ASTRONOMICAL

AND

METEOROLOGICAL OBSERVATIONS

MADE AT THE

UNITED STATES NAVAL OBSERVATORY

DURING

THE YEAR 1869.

PUBLISHED BY AUTHORITY OF THE
HON. SECRETARY OF THE NAVY.

COMMODORE B. F. SANDS, U. S. N.,
SUPERINTENDENT.

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UNITED STATES NAVAL OBSERVATORY, *Washington, September* 25, 1869.

COMMODORE: I have the honor to present the following report of the operations of this establishment for the past year, with estimates, also, of the amount required for its support for the fiscal year ending June 30, 1871.

ASTRONOMICAL WORK.

The Equatorial Instrument, in charge of Professor Asaph Hall, U. S. N., was employed, as in precediing years, in the observation of asteroids, occultations, comets, &c., until the first of May last, at which time Professor Hall was detailed by the Department and ordered to Behring Strait, to observe the total eclipse of the sun of the 7th of August, and the work of the instrument was temporarily suspended. It will be resumed on the return of that officer, now daily looked for.

In view of the comparatively small size of the Equatorial Telescope, and its inferiority to many of its kind in this country, there is among those acquainted with the wants of the Observatory a strong desire that it might, as an important national establishment, be furnished with the best instruments that can be procured; and, sharing in this desire, I am induced to repeat here the recommendation on the subject in my report of last year.

"At the present time the deficiency of the Observatory, which would be noticed with most surprise, is the absence of a telescope at all comparable with many owned by colleges, observatories, and private individuals throughout the country. This will seem the more remarkable since the most successful living constructor of telescopes is an American—Alvan Clark, of Cambridge, Massachusetts. Mr. Clark has constructed not only nearly all the best instruments lately erected in America, but some of the finest in Europe. It is understood that he has been for some time desirous of receiving an order for the largest refractor in the world; but the great cost—$40,000 in gold—has hitherto deterred individuals from giving the order. But it seems eminently desirable and proper that the Government of the United States should employ at its Observatory such an instrument of the highest power. Considering that any smaller instrument than that proposed would soon be superceded, that several institutions of learning in the country are endeavoring to procure one of this high character, and considering that not more than one such can probably ever be undertaken by Mr. Clark, it will be seen that delay endangers our being ever able to command it. As the construction of the instrument will occupy some four years, it is not necessary that more than one-fourth of the cost should be appropriated in any one year."

Impressed with the conviction that the opportunity thus offered should be availed of by the Government, I recommend that Congress be asked to make an appropriation of forty thousand dollars, and the superintendent of the Observatory authorized to contract with Mr. Clark, in that sum, for the finest instrument that eminent artist is capable of producing; the amount so appropriated to be paid in four annual installments, each of ten thousand dollars, (gold.)

Transit Circle.—This instrument has been in charge of Professor Simon Newcomb, U. S. N., who has also superintended the erection of the new wing of the Observatory.

In my last annual report, the very grave defects of the observing-room, in which this instrument was mounted, were set forth, and an appropriation of five thousand dollars to build a new one, with a proper foundation for the instrument, was recommended.

The requisite appropriation was made by Congress, and in April last proposals to build the wing were duly advertised for, and the work was commenced about the end of May. It is now nearly completed.

The architectural qualities of the new room have not yet been tested, but there is no doubt that for purely astronomical purposes it is the best meridian observing-room in the world.

Of the five observers employed with the instrument at the date of my last report, one, Professor Eastman, was transferred to the east wing in January last; another, Professor Harkness, has been disabled from observing by ill-health during a large part of the year; and the junior aid had not sufficient experience to make the more difficult observations. Observations have therefore been generally confined to the more necessary ones, namely, those of the sun, moon, larger planets, and fundamental stars.

The work of copying the observations from the note-books for the press has been done by Captain Whiting and Professor Beecher.

In June last the instrument was dismounted to allow its piers to be used in the new wing. The work of remounting it is about to commence.

Certain defects have been found to exist in the object-glass of this telescope, which can only be removed by re-grinding, and I have accordingly asked an appropriation for that purpose.

The Transit Instrument and the Mural Circle have continued in charge of Professor M. Yarnall, U. S. N., who was assisted in the work of the former instrument, from the 1st of January until the 1st of July, by Professor J. R. Eastman, U. S. N., and after that time by Mr. Edgar Frisby, "aid."

These instruments were employed in observing stars whose places were wanting either in right ascension or declination, for the general catalogue; and since the dismounting of the Transit Circle, in observing the moon and such of the planets as came to our meridian.

The observers were engaged with the Transit Instrument for a few nights in exchanging time-signals for difference of longitude between Washington and Des Moines, Iowa, and between Washington and Bristol, Tennessee; the results of which will presently be stated.

Mr. M. H. Doolittle, the senior assistant observer or "aid," has had charge of the Mural Circle, under direction of Professor Yarnall, and is especially commended for industry by that officer. He was assisted after the first of May by Mr. F. W. Bardwell, "aid."

Professor Yarnall has been engaged, during office hours, in reducing and preparing for the press the Transit Observations of 1868, which remain only to be copied on sheets, when they will be ready for publication. He has also been engaged in collating and preparing stars for publication in the General Catalogue, the epoch of the catalogue (1860) being different from that (1870) to which the current observations are reduced.

The observations to be made with the Transit Instrument, for the Catalogue, are now nearly completed, as far as observing is concerned, but much time will be needed to finish the reduction of the observations and transfer them to the Catalogue.

The observations with the Mural Circle are not so nearly finished, and exclusive attention will be given to that instrument after such observations as remain to be made with the Transit Instrument shall have been finished.

Meteorology.—Professor Eastman has had the supervision of the meteorological observations made during the year.

The instruments used are a Mercurial Barometer, Dry and Wet-bulb, and Solar Thermometers, Rain-Gauge, and Wind-Vane; also a Mercurial Barometer, by Green, of New York, employed as a *standard*, and two Registering Thermometers, indicating maximum and minimum temperature.

The observations have, as usual, been made every three hours, night and day, by the watchmen, Messrs. Hays, Horigan, and Cahill, under the direction of the officer in charge of the work.

Owing to more pressing duties, only the observations for 1867 have been prepared for the press during the year, which was done with the assistance of Professor Nourse.

I have submitted an estimate for the purchase of certain meteorological instruments with which it is desirable to furnish the Observatory.

Chronometers.—The labors of the officers on duty in the chronometer department have been unremitting, and when it is considered that all the ships of the Navy, going to various parts of the world, are supplied with chronometers from this establishment, the importance of these labors can hardly be overrated.

The system of keeping a complete record of all the chronometers has been continued, and the late increase of officers, so much wanted heretofore, has enabled us to make satisfactory progress in the history of all the chronometers from the earliest period possible.

Commander William N. Jeffers was ordered on duty here in December last, and took charge of the chronometers, relieving Commander A. W. Johnson, who was detached the same month.

The following officers have also been on duty as assistants in this department: (1868,) Lieutenant

Commander J. H. Sands, from 19th September to 31st December; (1869,) Lieutenant Charles J. Train, from 1st January to 30th April; Lieutenant Commander E. J. Dichman, from 1st May, (under orders to Naval Academy, on 1st October;) Commander J. Young, from 15th May; Commander W. C. West, from 22d May; and Lieutenant Commander J. H. Sands, from 28th July.

It is desirable that at least three of the grade of officers who are to be navigation officers at sea should serve at least one year each at the Observatory, to become conversant with the care of chronometers and the requirements of the Observatory in the correct record of their performance.

In order to increase the knowledge of thermometric laws, and to enable the navigator of each ship to keep an exact record of the temperature of the chronometer-room on shipboard, a Registering Thermometer, previously carefully compared with the standard, is sent with each issue of chronometers to every ship.

It is a matter of gratification to be able to inform the Bureau that the chronometers manufactured in this country are superior, in point of finish and appearance, to the instruments made abroad, and in point of accuracy our home-made instruments are equal to the best and superior to the ordinary foreign chronometers. For the observation of the time of the solar eclipse, for which the greatest possible accuracy and regularity of rate was required, chronometers were used made by T. S. & J. D. Negus, of New York.

The number of chronometers now on hand in the receiving cases is one hundred and nine, (109,) of which nearly all are ready for immediate issue. They are wound daily at noon, and compared with a standard clock keeping mean time, the error of which is ascertained every five days, and every ten days the error and rate of each chronometer are computed and entered in the rate-books, from which the performance of any chronometer can be obtained at any time. Upon return from sea, each instrument is carefully examined, and, if found defective, is sent to the chronometer-maker for cleaning or repairs.

Every day a time-ball is dropped at the exact moment of mean noon, by means of an electric connection, giving the exact time to Washington and the surrounding country.

TELEGRAPHIC APPARATUS AND CONNECTIONS.

The electro-magnetic and telegraphic apparatus connected with the Observatory is under the charge of Professor William Harkness, U. S. N., assisted by Mr. W. H. Gardner, the instrument-maker, and has worked well.

There are three lines of telegraph running out of the building. The first line runs to the Navy Department, where it controls a clock, which is made to beat in unison with the marble-case mean-time clock of the Observatory, by means of the apparatus invented by Mr. R. L. Jones, of Wolverhampton, England. Correct time is thus furnished to the Department, the working of the apparatus continuing in all respects satisfactory.

The second line of telegraph runs to the Washington Fire-alarm Telegraph Office. It puts us in connection with the fire-bells, and is used to furnish correct time to the city by striking them daily at seven a. m., twelve m., and six p. m.

The third line of telegraph belongs to the Western Union Telegraph Company, and is a loop from the wire which they designate as No. 7 south. By means of it are distributed the time-signals which serve to regulate the clocks of nearly all the railroads in the southern States. They are sent during the four minutes between 11.57 a. m. and 12.01 p. m., as follows: Daily to the Baltimore and Ohio Railroad, Baltimore City, and the other principal cities on their line, as far as New Orleans.

By the kindness of the Western Union Telegraph Company, we have had the free use of their wires to determine the longitude of four points during the past year.

At the request of the Spanish government, time-signals were, between September 8 and September 21, 1868, exchanged on four nights with Lieutenant C. Pujazon, of the Spanish navy, stationed in the arsenal grounds at Havana, Cuba. These signals place the station

$$0^h \quad 21^m \quad 12^s.58 \pm 0^s.035$$

west of center of dome of this Observatory.*

On the night of April 7, 1869, time-signals were exchanged with a United States Coast Survey party stationed at Staunton, Virginia.

* For full details of this work, see Appendix I to the volume of Observations for 1867.

On five nights, between July 26 and August 7, time-signals were exchanged with the Observatory party sent to Des Moines to observe the eclipse of August 7. These signals place the station at Des Moines

$$1^h \quad 6^m \quad 16^s.05 \pm 0^s.05$$

west of center of dome of this Observatory.

On three nights, between July 29 and August 7, time-signals were exchanged with a United States Coast Survey party, stationed at Bristol, Tennessee, and the result is that their station was

$$0^h \quad 20^m \quad 32^s.74$$

west of centre of dome of this Observatory.

THE TOTAL ECLIPSE OF THE SUN OF AUGUST 7.

Early in spring preparations began to be made here for the observation of the total eclipse of the sun of the 7th of August, an event of rare occurrence, and, fiom the important results to be derived from accurate observations, exciting among astronomers the liveliest interest.

The first party sent out from the Observatory consisted of Professor Asaph Hall, United States Navy, and Mr. Joseph A. Rogers, of the Hydrographic Office, who were detailed by the Department early in May, and ordered to proceed to Behring Strait, to a station there to be selected. The party reached San Francisco in June, and sailed on the last of that month for the strait in the United States steamer Mohican.

Accounts from San Francisco inform us that the expedition arrived at Plover Bay in ample time, and that every preparation was made for the observations, which were only partially successful, on account of the obscuration of the sun by clouds during the time of the eclipse. I feared this from the first, but observations at that location were so important as to prompt us to risk the chance of failure.

On the 14th of June the Department also detailed Professors Newcomb, Harkness, and Eastman to proceed to Des Moines, Iowa, a point on the line of totality, and select a suitable station for the purpose of observing the eclipse.

Mr. Bardwell, aid, was sent to Bristol, Tennessee, for observations at that point.

Surgeon General Barnes kindly detailed Assistant Surgeon Brevet Major Edward Curtis, of the Army, a gentleman skilled in photography, to accompany our Des Moines party. Previous to their departure, a little temporary frame building was erected in the grounds, as a practice observatory for photographing, &c., in which was mounted the Equatorial Telescope of the Naval Academy, kindly loaned by Vice-Admiral Porter, for observations of the eclipse. Arrived at Des Moines, the party selected stations, set up their instruments, and made all the needful preparations.

The weather on the day of the eclipse was favorable, and the observations were most successfully made.

The officers of the expedition, since their return to the Observatory, have been engaged upon their reports, the preparation of which involves some labor; and it will yet be some days before they are finished.* The results will prove highly interesting to the scientific world, and showing the large share the Observatory has had on this important occasion, will sustain the reputation the institution has already attained.

THE LIBRARY.

The Library is in charge of Professor J. E. Nourse, United States Navy. The annual volume of Astronomical and Meteorological Observations for the year 1866, forming a quarto of 472 pages, issued from the Government press in May last. The distribution of these volumes was begun on the day of their delivery to the Observatory. Five hundred copies in all were published. The demand for the observations by observatories and other scientific institutions, and by individuals, has left on hand a smaller number than ought justly to be reserved for the future supply of new observatories and institutions. The number of copies has been, therefore, increased for the volume now in press.

The Observatory is again indebted to the kind offices of the resident foreign legations, the Department of State, and the Smithsonian Institution, for the safe and prompt delivery of the volumes sent aboard. The calls continue for the separate reports upon the meteoric shower of November, 1868, the West India cyclone of 1867, and upon the routes for inter-oceanic canals and railroads.

* These reports have been published as Appendix II to the volume of Observations for 1867.

The additions to the Library, through its exchanges with other institutions, and with individuals eminent for scientific research, at home and abroad, have been of a very valuable character, and are still steadily increasing in number.

In case of a vacancy in the number of professors attached to the Observatory, the law of April 17, 1866, prohibiting the further appointment of professors of mathematics in the Navy, would cripple the Observatory to supply his place without further legislation.

I would suggest some modification of the law in regard to the professors at the Observatory, who are the astronomers and observers; and further to provide an increase of pay for every five years of service at this institution, in that capacity, as compensation for faithful and efficient service, and to hold out some inducement or promotion to retain an efficient corps of astronomers.

In speaking of the work of the Observatory, I must not omit to commend the three assistant observers, or "aids," allowed by law to the Observatory, for their zeal, intelligence, and industry in performing all the duties assigned them. These gentlemen, before being appointed, were required to undergo a strict examination as to mathematical attainments and knowledge of general science, and to prove their fitness for appointment by a high standard. They are frequently required to perform the duties of observer as well as computer, the more experienced observing on alternate nights with the professors. Considering, therefore, the value of their services, I earnestly recommend a small increase of the pay of the three assistant observers, or "aids." They now receive at the rate of $1,333 33 each, per annum; ($4,000 for the three.)

I recommend that their pay be graduated or classified as follows:

First aid, or assistant observer	$1,600 per annum.
Second aid, or assistant observer	1,500 per annum.
Third aid, or assistant observer	1,400 per annum.

The rewarding of meritorious service wherever and by whomsoever performed, is a just principle, always recognized and observed by our Government when a proper occasion for its exercise is presented. I believe the recommendation above affords such an occasion, and I hope it will meet with favor.

Very respectfully, your obedient servant,

B. F. SANDS,
Commodore, Superintendent.

Commodore JAMES ALDEN, U. S. N.,
Chief of Bureau of Navigation, Navy Department.

INTRODUCTION.

This Observatory was originally built as a depot of charts and instruments for the Navy, the work being done under supervision of Lieutenant James M. Gilliss, U. S. N., and a very full account of it is given in his "Report on the Plan and Construction of the Depot of Charts and Instruments, with a description of the Instruments, &c.," made to the Secretary of the Navy in February, 1845, and published as Senate Document No. 114, Twenty-eighth Congress, second session. A more general description, illustrated by plans of the building and drawings of the principal instruments, is contained in the volume of Washington Observations for 1845; and an account of the changes made for the reception of the large Transit Circle, together with a detailed description of that instrument, will be found in the volume of Washington Observations for 1865.

Position of the Observatory.—The latitude deduced from observations made with the Mural Circle in 1845 and 1846 was $+ 38° 53' 39''.25$;* and that value has been employed in the reduction of all observations made with the Mural down to the present time. The observations made with the same instrument from 1861 to 1864, inclusive, give a latitude $0''.47$ less, viz: $+ 38° 53' 38''.8$;† and this latter value is the one which has always been used in computing the published "Apparent North Polar Distances" obtained from observations made with the Transit Circle. It should be remarked, however, that in the published tables of "Right Ascensions, North Polar Distances, and Semi-diameters of the Sun, Moon, and Planets, deduced from Observations with the Transit Circle," and of "Corrections to the Right Ascensions and North Polar Distances of the American Ephemeris given by individual observations of Stars with the Transit Circle," the final north polar distances depend upon the position of the pole determined from all the observations of circumpolar stars made with the Transit Circle during the same year as those contained in the tables in question. The adopted longitude of the Observatory from Greenwich, used in interpolating tabular positions of the Moon and Planets, is $5^h\ 8^m\ 12^s.0$.‡

Arrangement of Work.—The system which has prevailed since the revival of the astronomical activity of the establishment in 1861, is still continued. Under this system, the observations with each instrument are directed by the officer having charge of it, who is held responsible for the proper performance of the work, and prepares the descriptions, explanations, and discussions of the observations contained in the annual volumes.

During the year 1869 the division of labor was as follows:

The Equatorial was in charge of Professor Asaph Hall, U. S. N.

The Transit Circle was in charge of Professor Simon Newcomb, U. S. N., who was assisted by Professor William Harkness, U. S. N., and by the following-named assistant observers during the periods specified, viz: Mr. Charles Thirion, from January 1 to May 1, and Mr. Edgar Frisby, from January 1 to June 15. The copying of the work from the original observing-books and reduction-sheets on to the sheets for the printer, was done by Captain William B. Whiting, U. S. N.

The Transit Instrument and the Mural Circle were in charge of Professor M. Yarnall, U. S. N., who was assisted by the following-named officers during the periods specified: In the work with the Transit Instrument, by Professor John R. Eastman, U. S. N., from January 1 to July 1; Assistant Observer Edgar Frisby from July 15 to October 8; and Assistant Observer F. W. Bardwell from November 10 to December 31; in the work with the Mural Circle by Assistant Observer M. H. Doolittle throughout the year; Assistant Observer F. W. Bardwell from June 12 to November 11; and Assistant Observer Edgar Frisby from October 9 to December 31. The reductions were checked by Professor Mark H. Beecher, U. S. N.

* Washington Observations for 1845; Appendix, p. 116.

† Washington Observations for 1864; Introduction, p. xliv.

‡ In some previous volumes this longitude is erroneously given. All the tabular positions of the Moon since 1860 have been computed with the adopted longitude $5^h\ 8^m\ 12^s.0$.

The department of chronometers, which includes the dropping of the time-ball at noon, and the transmission of time-signals to the city through the Police Telegraph, was in charge of Commander William N. Jeffers, U. S. N., from January 1 to November 16; and in charge of Commander J. Young, U. S. N., from November 16 till the end of the year. The following-named officers acted as assistants in this department during the periods specified, viz: Lieutenant Charles J. Train from January 1 to April 30; Lieutenant Commander E. J. Dichman from May 1 to September 30; Commander J. Young from May 15 to November 16; Commander W. C. West from May 22 to December 31; Lieutenant Commander J. H. Sands from July 28 to December 31; Ensign R. Clover from October 1 to December 31; Master Frank Turnbull from October 22 to December 31.

The Meteorological Observations were made under the supervision of Professor J. R. Eastman, U. S. N., by the watchmen of the establishment, Messrs. Thomas Hays, Dennis Horigan, and Nicholas Cahill.

Mr. William F. Gardner, instrument-maker, executed all necessary alterations and repairs to the instruments during the year.

Mr. Thomas Harrison, clerk and disbursing officer, had charge of the official correspondence and accounts of the establishment.

The Observatory, being a naval establishment, is under the general supervision of the Bureau of Navigation of the Navy Department.

THE TRANSIT CIRCLE.

During the year 1869 this instrument was employed on the stars of the American Ephemeris and the bodies of the solar system. In the month of June the instrument was dismounted to be removed to an improved observing room, and was not again used during the year.

CONDENSED DESCRIPTION.

For a detailed description of the instrument, with an investigation of its constants, reference may be had to the Washington Observations for 1865. The following condensed description will suffice for the explanation of the observations and their reductions:

The instrument is furnished with two circles, each divided to every 2′ of arc, and read by four microscopes. The circle on the clamp end of the axis, called circle A, has also a coarse division to every 10′ for setting. The division is read by a single horizontal microscope of low power. The readings of the two circles increase in opposite directions, so that their sum is a constant as the instrument revolves. The microscopes on the west pier are numbered I–IV; those on the east pier V–VIII. The readings of the former diminish and those of the latter increase as the telescope moves from the zenith toward the south. Each revolution of the microscope micrometers measures 30″ of arc.

The instrument is reversible, and each circle can be fastened in any required position relatively to the telescope.

Till the end of 1868 the reticule had twenty-three vertical and two horizontal fixed wires.* At the beginning of 1869 a new system of wires was put into the same scores, but the four close wires near each side of the field were omitted. In 1869 the instrument had therefore only fifteen vertical wires. Several determinations of the intervals of the new wires were made, but they differed so little from those of the old wires that the latter were adopted in the reductions. They are as follows, the notation of the actual wires being the reverse of that employed in 1868, the numbers or letters being employed in the order of transit of an equatorial star, whether the clamp be east or west:

	s.		s.		s.
I	+ 36.727	C_1	+ 4.060	D_1	− 8.150
II	+ 24.465	C_2	+ 2.025	D_2	− 9.661
		IV = C_3	− 0.008	V = D_3	− 12.253
III = B_1	+ 12.229	C_4	− 2.031		
B_2	+ 9.679	C_5	− 4.085	VI	− 24.465
B_3	+ 8.173			VII	− 36.723

Eye-piece Micrometers.—A single vertical wire is moved in R. A. by a micrometer screw. It serves for the determination of collimation error, and is sometimes used for observations of the transit of Polaris, when clouds prevent observations at the fixed wires. Each revolution measures $1^s.020$.

The Z. D. micrometer carries four horizontal wires. The middle two form a close pair, distant about 4″.6, the mean of which is regarded as the standard middle wire. The other two are placed at a distance of about ten micrometer revolutions on each side. That nearest the micrometer head is called wire A; the other, wire B.

The readings of both micrometers increase as the wires move from the head, and the position of the head of the Z. D. micrometer is such that an increase of reading is subtractive from the reading of circle A and additive to that of circle B. When the observer looking into the telescope has circle A on his right, the micrometer head is below the eye-piece. During 1869 this was the position when the telescope pointed south and the observer looked south.

* Description of the Transit Circle, § 32.

Collimators.—The instrument is furnished with two collimators, of which the object-glasses have each $2\frac{1}{4}$ inches aperture and 35 inches focus. Each end of a collimator projects 6 inches beyond the supporting pivots, which are only 23 inches apart. The collimators are interchangeable in position. Each is furnished with a delicate spirit-level, by which its axis of sight may be leveled. Collimator A has in its focus a pair of wires 10″ apart in one direction, and a single wire crossing them. Collimator B is furnished with a simple pair of rectangular cross-wires.

Each side of the central cube of the telescope is pierced with a circular opening $2\frac{1}{2}$ inches in diameter. Each opening is closed by a cap which screws into it. By unscrewing the caps and setting the telescope vertical, the wires of either collimator may be seen through the other.

The Sympiesometer.—This instrument was made by James Green, of New York. Its use is designed to lessen the number of observations and computations necessary in the determination of the correction to the refraction on account of the density of the air. It consists of a vertical tube, the top of which expands into a bulb, while the bottom is bent round in the form of a letter U. The large arm or cistern of the U holds sulphuric acid, and is closed by connection with an air-tight bag of oiled silk. The rest of the tube contains air. The quantity of air is so adjusted that in the hottest weather it nearly fills the vertical tube, while in the coldest weather the acid rises nearly to the bulb. If, now, the density of the fluid were zero, the density of the air within the bulb and tube would be the same as that of the external air. And, at all zenith distances at which it is worth while to observe for the determination of star positions, the refraction may be regarded as a function of the zenith distance and the density of the air simply. But, the sulphuric acid being quite a dense fluid, its height in the tube of the sympiesometer will be a function of any two of the three quantities, barometric pressure, temperature, and density of the external air. Since the datum wanted is the density of the external air, we shall express this density as a function of the height of the sympiesometer and barometer. Let us use the following notation:

B = height of barometer.

τ = temperature, counted from the absolute zero.

D = actual density of external air.

D_0 = density of air when the surfaces of the fluid in the tube and in the cistern are on the same level.

c = constant of elasticity of air.

l = total capacity of tube and bulb, counted from the point at which the surfaces of the acid in the cistern and tube are on the same level, measuring that capacity by the length to which it would be necessary to extend the tube in order that it might hold as much as the bulb.

h = height of internal surface of acid, counted from the same point with l.

a = specific gravity of acid, increased in the ratio of the bore of the tube to that of the cistern, specific gravity of mercury being unity.

B' = pressure of the confined air, in inches of mercury.

Then, from well known properties of elastic gases, we derive the equations,

$$B = c\,D\,\tau$$
$$B' = c\,D_0\,\tau\,\frac{l}{l-h}$$
$$B' = B - ah$$

From the last two equations,

$$B = ah + \frac{c\,D_0\,\tau\,l}{l-h}$$

Substituting for τ its value from the first equation, we find,

$$D = D_0\,\frac{l}{l-h}\,\frac{B}{B-ah}$$

Thus, D is expressed as a function of the height of the fluid in the sympiesometer, and of the height of the barometer. Let us put $B = B_0 + \beta$, B_0 being the mean height of the barometer, and β its small changes. Then, developing to the first powers of β, we have,

$$\frac{B}{B-ah} = \frac{B_0}{B_0-ah} - \frac{ah\beta}{(B_0-ah)^2}$$

To estimate the value of the last term of this equation we remark that—

The value of a is, roughly, about	$\frac{1}{8}$
The value of β seldom exceeds, during fine weather, ...	$\pm$ 0.4 inch.
The value of h rarely exceeds	8 inches
While we may put B_0	= 30.15

Consequently, the last term of the equation will rarely amount to $\frac{1}{2000}$, and may therefore be neglected, except in rare and exceptional cases. Neglecting it, we find,

$$D = \frac{B_0\, l\, D_0}{(B_0 - ah)\,(l - h)}$$

so that the density of the air is expressed as a function of the observed height of the sympiesometer, and of determinable constants.

Considering, however, that it was doubtful whether the invariableness of a and D_0 could be relied on for long intervals of time, it was deemed best not to attempt the direct determination of D, but to graduate the scale of the sympiesometer by comparison with the results of the thermometer and barometer. A scale was attached to the sympiesometer, the reading of which gave an approximation to the logarithm of the density of the air, the density at 29 inches and 100° being unity. A table of corrections to this scale was deduced from comparisons with the barometer and thermometer at various densities of the air.

USE OF THE TRANSIT CIRCLE.

Position of Axis.—The plan of work with the instrument contemplates its reversal at the beginning of each calendar year, and the use of a single circle in an invariable position, with a single set of four microscopes during each year. In the alternate years in which the axis is in the same position, the position of the circle used will be so changed that the polar distances of the stars will depend on different circle divisions in different years. It was therefore reversed at the beginning of the year 1869, and the zenithal reading of circle B was diminished 30′.

Arrangement of Observers.—As a general rule, one observer is charged with all the observations to be made during a definite twenty-four hours, which is considered the "observing day." The regular observing day begins at 9 o'clock a. m.; but when a special observation is to be made at an earlier hour in the morning, the observers may arrange among themselves to have the tour of duty commence earlier. An isolated observation, occurring at an inconvenient hour for the regular observer of the day, is frequently assigned to another.

Mode of Observing.—The telescope is set so as to bring some division of the circle under or near the zero of the microscopes. The subdivision of each 2′ of zenith distance thus depends entirely on the Z. D. micrometer. The bisections of a star in zenith distance are usually made as it crosses wires I, II, VI, and VII, by bringing its image midway between the middle pair of wires of the micrometer. Before each bisection the micrometer is drawn back so that the bisection shall always be made by moving the micrometer-screw forward. Bisections of stars whose polar distance is between 5° and 20° are frequently made at wires B_1, B_3, D_1, and D_3. Stars within 5° of the pole are usually bisected at the wires of set C. In the case of very faint objects, it was found impossible to bring the images between the close wires with accuracy, and such objects are therefore usually bisected with wire A or B. The micrometer readings are recorded, after the observation is completed, by means of the self-registering indexes.*

The transits of stars more than 5° from the pole over sets B, C, and D, are recorded by the electro-chronograph. Stars within 5° of the pole are observed by eye and ear, generally over the wires of set C, using the beat of the chronograph-pen.

It will be seen that by the adopted method of observation of quick-moving stars, the attention of the observer is occupied with the determination of but one co-ordinate at a time.

In the case of the sun the transit of the first limb is observed over the usual wires. The telescope is then clamped on one of the horizontal limbs, the image of which the observer brings between the micrometer wires at vertical wires I and II, while a second observer reads the microscopes. The telescope is next clamped on

* Description of the Transit Circle, § 30.

the opposite limb, which is measured at vertical wires VI and VII, while the second observer again reads the microscopes. The telescope is then unclamped and the transit of the second limb observed as usual.

When the second limb of the moon is to be observed the circle reading for the full horizontal limb is computed beforehand, the circle is set accordingly, and the microscopes are read before the moon enters the field. Five measures of the limb, if practicable, are then made as it crosses the field. The telescope is immediately unclamped and set on the second limb, the transit of which is observed in the usual way.

Arrangement of Clocks and Chronograph.—All the observations are recorded in time of the Kessel's clock. This clock has a gridiron pendulum, and its rate is tolerably regular. Its beats are recorded by a galvanic current in the way heretofore employed at this Observatory. To avoid any possible effect upon its rate, the mercurial connection is made near the middle of the rod, and the globule of mercury is made adjustable by being forced up from a small reservoir by a screw. It is kept quite small, and of such a height that the knife-edge just grazes its surface without causing any sensible vibration of its mass.

In February, 1867, fearing a possible diurnal inequality in the clock-rate during the summer months, arising from the diurnal change of temperature to which it would then be exposed, the clock was taken from its place in the superintendent's room and placed in a niche in the base of the pier of the great equatorial. The diurnal inequality of temperature is here insensible, and the annual inequality small. During warm weather it is exposed to dampness from condensation of the moisture of the air. To guard against this it was surrounded by quicklime. Unfortunately this substance was found, in slaking, to diffuse itself in the form of an impalpable dust, which penetrated the clock-case, and settled on the wheels. Its use had therefore to be discontinued and chloride of calcium to be substituted.

In the observing-room is placed a "counting-clock," regulated to run with the Kessel's clock, and thus serve to indicate the second corresponding to each beat of the latter, as indicated by the chronograph-pen. It is adjusted every day, on commencing observations, to beat coincidently with the chronograph-pen, but the sound of its beat is never employed in observation.

The transits are recorded on the cylinder chronograph, described in previous volumes of the observations. At each interval in the observations exceeding ten or fifteen minutes, the chronograph is stopped, and the hour, minute, and second of the last beat is taken from the face of the counting-clock and marked on the sheet. It was also intended that at least one other such indication of the clock-beat should always be marked on the sheet while the chronograph was still running, but in this the observers were frequently remiss. Errors of one second or one minute in the record therefore occur occasionally.

Determination of Error of Collimation.—This constant is determined from the opposing collimators, without reversal of the instrument. The covers of the opening through the cube of the telescope being removed, the latter is set on collimator A. One Y of the collimator is then so adjusted in azimuth that the middle wire of the telescope shall be about midway between the images of the parallel wires of the collimator. The observer can make this adjustment by viewing the reticule of the telescope through the collimator. The small deviation of the middle wire of the telescope from the mean of the collimator images is then measured with the R. A. micrometer. This measure is made by first so setting the micrometer wire that the mean of it and the fixed wire shall coincide with the mean of the images, and then moving it so as to coincide with the fixed wire. The required deviation is then one-half the space passed over. If, as is generally the case, the movable wire is almost in contact with the fixed one at the first setting, it is moved to an equal distance by estimation on the other side of the fixed wire. The required deviation is then one-fourth the space passed over.

The telescope is then pointed toward the zenith, and the observer brings the vertical wire of collimator B midway between the parallel wire images of collimator A.

The telescope is then pointed on collimator B, and the double distance of its wire image from the middle wire of the telescope is measured by first setting the movable wire so that the image shall be midway between it and the fixed wire, and then making it coincide with the latter. If, however, the image is very close to the wire, the first setting cannot be made with precision. In this case the telescope is clamped, and one of the single wires of the Z. D. micrometer is set alternately above and below the image of the horizontal collimator wire at a distance equal, by estimation, to that of the vertical fixed wire from the vertical image.

The telescope being again pointed toward the zenith, the observer looks into collimator A, and sets it independently on collimator B. Another set of measures is then made like the first. The mean result of the first and last set is taken as the concluded distance of image A from the middle wire.

Error of Level.—Two modes of determining this constant have been employed, namely:

(1.) Measurement of the distance between the middle wire and its image reflected from mercury when the telescope is pointed toward the nadir. This method was only employed three or four times, and then only as a check.

(2.) Use of the spirit-level. In each determination by this method four readings of the level are made, the latter being reversed between each pair of readings. The constant difference in the results of the two methods seems to be very small.

The separate results of the individual determinations of collimation and level errors are given at the end of this introduction.

Zenith Point Correction.—During the year 1869, this constant was determined by observations of the nadir point.

The use of the collimators for this purpose was entirely discontinued after June 1, 1867, it being found that the nadir observations could be made in the day-time nearly as well as at night. The process was the same as that described in the volume for 1866.

In observations of the nadir point, the microscope micrometers are read both before and after the measures with the Z. D. micrometer. The reading of the latter for coincidence of the close pair of wires with their reflected images is deduced from pairs of readings when the wires are so set that a reflected image is seen alternately north and south of a wire at a distance equal, by estimation, to the distance between the wires, or from similar pairs made when the wires and their two images form three equidistant spaces. Generally, two determinations are made by each method, and the mean of the results used.

EXPLANATION OF THE PRINTED OBSERVATIONS WITH THE TRANSIT CIRCLE.

General Remark.—In printing the observations the rule has been adopted to print every observation exactly as recorded by the observer, without alteration in any case whatever, and without addition, except in very rare cases, which are noted at the foot of the page. If a record seems erroneous, the error is pointed out in the foot-notes if it appears necessary so to do. Where there is no reasonable doubt of the nature of an error, a corresponding correction is introduced at such stage of the reductions as is most convenient. It has not been found practicable to adhere to any invariable rule respecting the point of introduction of the correction.

Detailed Explanation.—The first three columns need no explanation.

Column "*Observer*" gives the initial of the observer, as follows:

N.—Professor S. Newcomb.
H.—Professor A. Hall.
Ha.—Professor William Harkness.
T.—Mr. Charles Thirion.
F.—Mr. Edgar Frisby.

Column "*Weight*" indicates the quality of the observation as estimated by the observer. The weights are arranged on a scale from 1 to 5 as follows:

1 indicates a very bad or unsatisfactory observation.
2 indicates a poor one.
3 indicates an average one.
4 indicates a good one.
5 indicates a very good one.

The weights depend mainly upon the definition, steadiness, and distinctness of the image. When two numbers are given in this column the first refers to the observation of transit; the second to that of zenith distance.

Seconds of Transit over Wires.—In the case of stars more than 5° from the pole the times of transit usually recorded are those over the nine wires B_1 to B_3, C_2 to C_4, D_1 to D_3, which are regarded as the wires for regular observation. If the observation is irregular the wires observed can nearly always be inferred from the intervals between the transits. A frequent case is that of a transit over set C, and only one of the sets B or D. The former is then pushed aside one column from the middle to make room for the latter, so that a transit over B and C is found in columns I to VIII, and one over C and D in columns II to IX. Stars within 5° of the pole are observed by eye and ear, generally over the five wires of set C. The

seconds are then found in columns III to VII. Transits below the pole are recorded in an order the reverse of that actually observed, so that any one wire is found in the same column it would occupy if the transit were above the pole.

Mean Wire.—The imaginary wire to which all the observations are reduced to find the times given in this column is the mean of the nine regular wires mentioned above. When these wires are all observed their mean is taken. In other cases each wire is reduced separately and the mean of the reduced times taken. In most cases these reductions are facilitated by Tables I and II,* which give for each standard polar star, and for each degree of N. P. D. exceeding 30°, the reduction from each individual wire, frequently used, to the standard mean wire. In broken observations of the sun and planets this reduction is further corrected for motion of object in R. A., as given in the Ephemeris. In the case of the moon the reduction is computed from Tables III and IV†, which are founded on Airy's formula. Table III gives, for the latitude of Washington, the logarithm of the factor

$$\frac{\sin ☽\text{'s Geoc. Z. D.}}{\sin ☽\text{'s App. Z. D.}}$$

Table IV gives the logarithm of the factor

$$\frac{60m. + I}{60m}(1 + a)$$

I being the increase of the moon's mean time of transit in one hour of terrestrial longitude, as found in section "Moon Culminations" of the American Ephemeris, and a the ratio of acceleration of sidereal on solar time.

Correction for Instrument.—In this column is given the sum of the corrections for collimation, level, and azimuth. The table of adopted instrumental constants will be found at the end of the Introduction. (Table C.)

In the first column of this table we have the mean date, and, where necessary to the identification of short intervals, the tenth of a day. Where no tenth is added, the day commences with the tour of duty of the observer, generally about 3^h earlier than the commencement of the astronomical day. The constants for the nth day at 21^h mean time will therefore be found in the line $n + 1$. The letters d, n, indicate that observations were made during the day only, or the night only, indicated by the date. Column "Temp.," gives the approximate mean temperature Fahrenheit during the observations, and is used to compute the collimation.

Column c gives the adopted constant of collimation, concluded from the observations of collimation error, already explained. This constant is a function of the temperature, decreasing by $0^s.01$ for every rise of 3° Fahrenheit in the temperature. The adopted constants are therefore made to depend on the mean temperature of the atmosphere during each day, roughly derived from the Meterological Journal.

Column b gives the adopted level constant derived from the separate observations of level already explained. When transits of the reflected images of stars are observed, it is essential that the level constants should be known with precision, in order that they may be compared with transits observed directly. The level error has therefore been determined with more care on the dates of such observations.

Column a gives the adopted horizontal azimuth of the instrument. It has been derived almost entirely from the observed transits of the standard polar stars, Polaris, δ Ursæ Minoris, and λ Ursæ Minoris, in the following way:

If double transits of any of those stars were observed by one observer, the azimuth generally depends on them alone. When no such pair of transits was available, the azimuth is the mean result of all the single transits. The computation was, in all cases, conducted as follows: The time of each observed transit to be used for azimuth was first corrected for collimation, level, and clock error. A sufficiently close value of the latter correction was derived from transits of equatorial stars. The time of transit thus corrected was compared with a computed right ascension of the star.

On discussing the observations of 1866 and 1867 it was found that there were well-marked personal differences between the right ascensions of close polar stars deduced from the work of the different observers. The computed right ascensions were therefore obtained by applying to the positions of the American

* Found in the Washington Observations for 1866, pp. xxix and xxx. † Ibid., p. xxxi.

Ephemeris corrections depending on the observer, as shown in the following table. In the case of H., E., and F. no data for the correction were available; the correction employed is therefore that deemed nearest the absolute truth:

	Polaris.	δ Urs. Min.	51 Cephei.	λ Urs. Min.
	s.	s.	s.	s.
Observer N.	+ 0.8	− 0.4	+ 0.6	− 0.4
Observer H., E., or F. .	+ 1.0	0.0	+ 1.0	0.0
Observer T.	+ 2.2	+ 0.6	+ 1.6	+ 1.2

The difference between the corrected time of transit and the computed right ascension of the star was considered as due to azimuth, a value of which constant was deduced by multiplying the difference by the proper factor. In case of a pair of opposite transits, the mean result is adopted for the day. This mean is nearly independent of the adopted right ascension of the star, since a change in this element will produce opposite and nearly equal effects upon the two azimuths.

Table V* gives a condensed summary of factors by which the instrumental constants must be multiplied to obtain the correction to the time of transit, which will serve for the general purpose of verification. The tables in actual use are much more extensive, giving the required corrections for each degree of Z. D. and each .01 of the instrumental constants.

The *Apparent Clock Correction* is given only for direct observations of stars of the American Ephemeris within 40° of the equator. It is found by subtracting the sum of columns *Mean Wire* and *Instrument* from the computed apparent right ascension of the star. The latter is found by applying to the positions of the Ephemeris the corrections derived from the four years' observation with the transit instrument, 1862 to 1865, inclusive. They are found in Table D.

Adopted Clock Correction.—The apparent clock corrections derived from all the observations made by one observer in the course of his observing day are added up, and the mean taken. This mean is supposed to correspond to the mean of the times of observation. Both means are given in Table E, which also exhibits the computations of clock rate. The first column of this table gives the mean date, to which is added the tenth of a day when the time falls in the forenoon. The next two columns give the mean sidereal hour to the nearest tenth, and the mean clock correction. The small letters after the latter indicate the observers from whose observations the corrections were derived. In the next column the means are corrected for personal equation, and, in some instances, errors of an integral number of seconds in the counting clock.

The personal equation is derived from all the observations made during a period of three or six months. Equations of condition are formed by interpolating two corrections depending on the same observer at an interval not exceeding three, or, at the utmost, four days, on the supposition of a uniform rate, and comparing the interpolated values with the corrections given by other observers. The uniformity of the clock rate was such that all needful accuracy could be obtained by this method. The corrections to be applied to the clock corrections to reduce them to a uniform standard were thus found to be as follows:

	s.
N. (E. & E.)	− 0.24
N.	− 0.03
F.	+ 0.04
T.	+ 0.07

In the next column we have the daily rates for the intervals of the determinations, which are found by dividing the changes of reduced correction by the intervals.

Next, we have the adopted daily rates for each series of observations, which are derived from the observed rates preceding and following. In this determination a greater weight is given to a rate depending on an interval of one day than to one depending on a greater or less interval. Moreover, where there is much uncertainty in the rate, preference is given to multiples of 3 or 6 in adopting a rate.

* Found in the Washington Observations for 1866, p. xxxii.

The *Adopted Clock Corrections* are obtained by carrying the mean error for the observer forward or backward through his series of observations with the adopted rate. The occasional corrections for isolated observations are obtained by interpolating the corrected error between the nearest dates, on each side, and applying personal equation.

The *Apparent Right Ascension* is formed by applying the adopted clock and instrumental corrections to the time of transit over mean wire. It is therefore, in all cases, the right ascension of that part of the object actually observed.

Column *Miscellaneous Corrections* gives—

α. In the case of stars whose apparent positions are given in the American Ephemeris, the corrections to the right ascensions in the Ephemeris given by the observation.

β. In the case of other stars, the reduction to the mean position for the fictitious epoch 1870.0. This reduction is computed with the constants of precession, nutation, and aberration employed in the American Ephemeris, and no proper motion is applied.

γ. When only one limb of a planet is observed the sidereal time of its semi-diameter passing the meridian, as taken from the American Ephemeris, is given in this column.

Passing now to the right-hand page, the first column contains the number for reference.

Column *Circle Division* gives the degrees and minutes of circle reading as they would have been read by a fictitious horizontal microscope. From C may be deduced the four divisions of the circle on which the wires of the microscope micrometers were actually set; these divisions being,

		° ′
For microscope	V,	C + 314 34
For microscope	VI,	C + 44 34
For microscope	VII,	C + 134 34
For microscope	VIII,	C + 224 34

The circle division being usually copied into the observing-books from a table, or from the result of a calculation, it is to be regarded, at least in the case of well-known objects, as a result of calculation rather than of observation.

Next we have the readings of the micrometers of the four microscopes of the east pier. As it was always intended to set the circle so that these micrometers should read 10 revolutions and some small number of seconds, their entire revolutions are not generally recorded unless their reading falls without the limits of $9^r\ 20''$ and $10^r\ 20''$.

The next six columns give the readings of the zenith distance micrometer. The entire revolutions are deduced from the position of the double movable wires on the toothed scale in the focus of the telescope. The center of the field, as marked by the double fixed wires, corresponds to 30 revolutions. Columns 1, 2, 3, 4, and 5 give the thousandths of a revolution, as read from the micrometer-head for the different bisections of the object by the micrometer. The vertical wires at which the bisections were made may be inferred as follows:

For stars of more than 5° polar distance the columns 1–5 correspond to wires I, II, IV, VI, and VII.

For stars within 5° of the pole they refer to wires C_1–C_5.

Stars within 20° of the pole were generally bisected at the times of transits over the wires of sets B and D. These cases are indicated in the foot-notes, the words "bisections at sets B and D" indicating that the were made at B_1, B_3, D_1, D_3.

When the bisections were not made at the regular wires, a note will be found at the foot of the page stating at what wires, or at what minutes and seconds of clock-time the bisections were made.

The zenith point correction is derived entirely from the last column in the observations of the nadir point and collimators, the varying correction being interpolated between the times of its separate determination in such a way as to give its most probable value for each celestial observation. If the difference of consecutive determinations, or between three determinations on the same day, did not amount to half a second, the mean result was generally used throughout. When the difference exceeded this amount the varying series was made to approach each determination within an amount which increased with the discrepancy of the determinations.

The apparent zenith distance south is formed of the sum of the following quantities:

1. The mean circle reading formed by applying the mean of the excess of the microscope micrometer readings above 10 revolutions to the circle division.

2. The correction for mean reading of zenith distance micrometer. The value of this correction is,

$$R\ (M - 30^{r}) + 4'$$

R being the value in arc of one revolution of the micrometer, and M the mean micrometer reading. The constant 4′ is added to make the correction positive. This correction may be deduced from Table VI, of the volume for 1866, by subtracting the result from 7′.

3. The reduction to the meridian on account of deviation of the path of the star from a great circle. This correction depends upon the polar distance of the star and its hour-angle, or the vertical wire at which it was observed. It was taken from Table VIII,* in which the numbers are increased by 1″.80 to make them generally additive. When the bisections were made by clock-time, the correction was taken from the tables in the Appendix to the Washington Observations for 1845.

4. In case of unsymmetrical observations the corrections for inclination of wires and motion of object. The inclination was determined from time to time by comparing the micrometer readings of great numbers of stars at the first and last vertical wires. It was undisturbed and sensibly constant during the year. Its amount is given on page 3 of the Observations.

5. In the irregular cases in which wire A or B was used, the corrections for the distance of these wires from the middle pair. These corrections are found on page 3 of the Observations.

6. The zenith point correction in the preceding column.

At the beginning of 1867 the heads of the microscope micrometer screws were so adjusted that the mean correction for periodic inequalities of the screws should be very small. This correction was therefore not applied during the year 1869.

The corrections for flexure and division errors are not applied in the reductions, it being intended to apply them once for all to the concluded mean places of the stars and the apparent places of the planets.

The next column gives the reading of the sympiesometer. The readings of the external thermometer, barometer, and its attached thermometer, corresponding to occasional readings of the sympiesometer, and serving as a check upon it, are found at the foot of the page.

The refraction is computed from the apparent zenith distance, and the readings of the thermometers and barometer by means of the expansion of Bessel's Refraction Tables, found in the Appendix to the Washington Observations for 1845, using only four places of decimals. But generally the sum of the logarithms of the factors for barometer and external and attached thermometers are deduced at once from the reading of the sympiesometer by applying a small correction. This correction is given in the following table:

S.	Corrections.
400	+ 4
450	3
500	3
550	3
600	4
650	5
700	8
750	6
800	7
850	8
900	+ 9

The correction is deduced from comparisons of the sympiesometer readings with the results of the barometer and thermometer readings.

* Washington Observations for 1866, p. xxxiii.

The units of sympiesometer reading and correction both correspond to the fourth place of decimals in the logarithm of refraction.

When a star was too near the horizon to regard the refraction as a function of the height of the sympiesometer simply, the refraction was computed in the usual way. The apparent north polar distance is formed by adding the apparent zenith distance south, corrected for refraction, to the colatitude in case of a direct observation, or subtracting it in case of a reflection observation. The adopted colatitude is

$$51^\circ\ 6'\ 21''.2$$

The column *Miscellaneous Corrections* contains the following quantities:

α. In case of stars of the American Ephemeris, the apparent correction to the north polar distance there given.

β. In case of other stars the reduction of the apparent north polar distance to the mean north polar distance at the fictitious epoch 1870.0, using the constants of the American Ephemeris and omitting proper motion.

γ. In the case of planets other than the moon, the correction for parallax, in computing which the sun's mean equatorial horizontal parallax has been taken equal to

$$8''.85$$

In the case of the moon the corrections for parallax and semi-diameter will be found at the foot of the page. They are both computed from the data of the American Ephemeris, pages 341–344, the adopted formula for parallax being

$$\sin p' = [9.999430] \sin \pi \sin (\text{Z. D.} + \text{refraction} - 11'\ 14''.5)$$
$$p = p' \pm \delta p.$$

π being the interpolated value of the horizontal parallax, and δp the small correction taken from Table XI of the Appendix to the Washington Observations for 1865.

OBSERVATIONS OF THE NADIR POINT MADE TO DETERMINE THE ZENITH POINT CORRECTION OF THE TRANSIT CIRCLE.

The first column gives the mean day and tenth of a day, and the sidereal hour. The time of observation is thus, as a general rule, fixed within an hour. Failures on the part of the observer to record the exact hour are, however, very frequent.

The readings of the microscope micrometers are those taken from their heads when their wires are set on the following divisions:

	°	′
Microscope V,	134	30
Microscope VI,	224	30
Microscope VII,	314	30
Microscope VIII,	44	30

As already explained, the circle reading is referred to a fictitious horizontal microscope, which reads 179° 56′ when the telescope points to the nadir.

The entire revolutions of micrometer V are seldom recorded, unless they differ from 10. They may generally be inferred from the circumstance that the circle is usually set on or near 10 revolutions when a collimator was observed.

The next column shows the readings of the zenith distance micrometer for coincidence of each wire of its close pair with the image of the adjoining wire, or for coincidence of the mean wire with its image. A correction of $+0^r.250$ is to be applied to all these readings on account of a different index being read from that read in celestial observations.

The next column gives the concluded zenithal circle reading.

Lastly, we have the zenith point correction resulting from the observation. To obtain it, the circle reading should be corrected by the following quantities:

	$''$
Flexure of circle	+ 0.86
Effect of gravity on micrometer	— 0.30
Constant added to reduction to meridian in the reduction of celestial observations	+ 1.80
Total	+ 2.36

The circle reading thus corrected being subtracted from 360° will give the zenith point correction to be applied in the reductions. The correction actually used was, however, through some mistake, $2''.76$, so that the correction and the direct zenith and polar distances are all too small by $0''.40$, and the reflection distances too great by the same quantity. The error is eliminated by the correction for discordance of direct and reflection observations.

CORRECTIONS TO THE STAR POSITIONS OF THE AMERICAN EPHEMERIS, GIVEN BY INDIVIDUAL OBSERVATIONS OF STARS WITH THE TRANSIT CIRCLE. (Pages 238–247.)

Here are found (1) the date of each observation and (2) the initial of the observer. The latter is given to facilitate any discussion of personal peculiarities.

Next follows the correction to the right ascension. This is copied, without change, from the last column of the left-hand page of the observations. In the case of clock-stars, it is not put down unless it depends either on three other clock-stars, or on one or two stars distant more than six hours in right ascension.

In this and the following column a colon signifies that the result is doubtful; an *r* that it is rejected on account of discordance.

In the next column we have the correction to the polar distance, also copied from the last column of the observations, without change, except for erroneous micrometer revolutions.

The mean polar distances thus found still require the following corrections, which were not applied in the reductions:

1. For error of division.
2. For flexure.
3. For possible constant error in zenith point.
4. For error of assumed latitude.

The correction for error of division may be deduced from the table for circle B, given in § 72 of the description of the Transit Circle; the argument of the table being,

$$\left.\begin{array}{r} 38^\circ.4 - \text{Dec.} + i \times 90^\circ \\ \text{or } 38^\circ.4 + \text{N. P. D.} - i \times 90^\circ \end{array}\right\} \text{For direct observations.}$$

$$\left.\begin{array}{r} \text{and } 51^\circ.6 + \text{Dec.} - i \times 90^\circ \\ \text{or } 51^\circ.6 - \text{N. P. D.} + i \times 90^\circ \end{array}\right\} \text{For reflection observations.}$$

i being a whole number to bring the argument into the first quadrant. From this table, the correction for the nadir point, corresponding to 180° of the finding microscope, comes out $+ 0''.30$. As this correction has not been applied, it must be subtracted from all the division corrections. Moreover, to reflection results, the division must be applied with its sign changed. The final correction is given in one of the following tables.

The concluded correction for division is under the mean "Correction to the ephemeris" for each star. Under this again, in the line Flex., &c., is given the sum of all the other systematic corrections. As one of these corrections is derived from a comparison of the direct and reflection observations, the next step will be the discussion of that comparison.

COMPARISON OF DIRECT AND REFLECTION DETERMINATIONS OF POLAR DISTANCE.

This comparison is given in the following table. Column D. — R. gives the difference of results corrected only for error of division. The weights are not proportional to the number of observations, but are taken on the supposition that each star is affected with a probable constant error nearly one-third as great as the accidental errors of the individual observations. The formula actually employed is,

$$\text{Wt.} = \frac{12\,n}{n + 11}$$

Star.	Z. D.	D.	R.	Sine flex., etc.	D.−R.	Wt.
NORTH STARS.	°	″	″	″	″	
Polaris, S. P.	307	$+\ 0.19_{10}$	$+\ 0.50_{3}$	+ 0.04	− 0.27	2
32¹ Camelopardi	315	$-\ 19.71_{2}$	$-\ 18.80_{1}$	+ 0.04	− 0.87	1
32² Camelopardi	315	$-\ 1.66_{2}$	$-\ 1.35_{2}$	+ 0.04	− 0.27	1
4 Draconis	321	$-\ 1.72_{3}$	$-\ 0.52_{1}$	+ 0.03	− 1.17	1
β Ursæ Minoris	324	$-\ 0.88_{6}$	$-\ 0.23_{1}$	+ 0.03	− 0.62	1
σ Ursæ Majoris	331	$-\ 1.85_{3}$	$-\ 1.08_{2}$	+ 0.02	− 0.75	1
α Draconis	334	$-\ 1.46_{4}$	$-\ 0.53_{3}$	+ 0.02	− 0.91	2
α Ursæ Majoris	336	$-\ 1.10_{4}$	$-\ 0.30_{1}$	+ 0.02	− 0.78	1
θ Bootis	346	$-\ 0.70_{2}$	$+\ 0.07_{1}$	+ 0.01	− 0.76	1
η Ursæ Majoris	349	$+\ 1.46_{3}$	$+\ 0.76_{3}$	+ 0.01	+ 0.71	2
ι Ursæ Majoris	350	$+\ 0.10_{3}$	$-\ 0.44_{2}$	+ 0.01	+ 0.55	1
α Aurigæ	353	$-\ 1.43_{1}$	$+\ 1.14_{2}$	0.00	− 2.57	1
SOUTH STARS.						
α Coronæ Borealis	12	$+\ 2.10_{6}$	$+\ 2.54_{1}$	− 0.01	− 0.45	1
δ Leonis	18	$+\ 0.26_{6}$	$+\ 1.03_{1}$	− 0.02	− 0.79	1
α Bootis	19	$+\ 1.68_{6}$	$+\ 2.54_{4}$	− 0.02	+ 0.74	2
η Bootis	20	$-\ 0.35_{5}$	$+\ 0.26_{1}$	− 0.02	− 0.63	1
α Tauri	23	$+\ 1.55_{5}$	$+\ 1.28_{1}$	− 0.02	+ 0.25	1
β Leonis	24	$+\ 0.89_{6}$	$+\ 1.83_{2}$	− 0.02	− 0.96	2
α Herculis	24	$+\ 0.15_{2}$	$+\ 1.18_{1}$	− 0.02	− 1.05	1
α Ophiuchi	26	$+\ 1.31_{3}$	$+\ 2.15_{1}$	− 0.02	− 0.86	1
α Leonis	26	$+\ 0.45_{7}$	$+\ 2.38_{3}$	− 0.02	− 1.95	2
o Virginis	29	$-\ 0.62_{6}$	$+\ 1.65_{1}$	− 0.02	− 2.29	1
α Orionis	32	$-\ 0.12_{6}$	$+\ 0.60_{1}$	− 0.03	− 0.75	1
α Serpentis	32	$+\ 1.56_{6}$	$+\ 3.01_{3}$	− 0.03	− 1.48	2
τ Leonis	35	$+\ 0.33_{6}$	$+\ 1.85_{1}$	− 0.03	− 1.55	1
η Virginis	39	$+\ 0.40_{5}$	$+\ 2.68_{1}$	− 0.03	− 2.31	1

The number of observations is too small to deduce any law of variation on either side of the zenith. Taking the mean value of D. — R. for all the north stars, and then for all the south stars, we find

		$''$
Mean value of D.—R. north of the zenith	. .	— 0.54
Mean value of D.—R. south of the zenith	. .	— 0.90

or, correcting the results for error of zenith point correction just mentioned, they will be

		$''$
North	. .	+ 0.26
South	. .	— 0.10

This result is decidedly different from that of 1867, when the position of the instrument was almost exactly the same. It would seem, therefore, that the discordance depends on some cause which may vary from year to year. The most remarkable feature of the change is that the excess of reflection measures of north polar distance of stars south of the zenith is reduced from $1''.19$ to $0''.36$.

The corrections to be applied to different classes of observations will be determined, as in former years, on the supposition that the mean of the direct and reflection results is correct. The change of $0''.18$ near the zenith will be supposed to take place progressively from 355° to 5° zenith distance. The corrections to reduce the direct and reflection to one uniform system will then be:

		$''$
To direct results	. . . .	$+ 0.06 \sin Z + \alpha$
To reflection results	. . . . .	$+ 0.10 \sin Z - \alpha$

Where $\alpha = + 0''.27$ for zenith distances between 185° and 355°
$\alpha = + 0.45$ for zenith distances between 5° and 175°

To obtain absolute polar distances two more corrections are still necessary, one for cosine flexure of the telescope, and one for error in the assumed latitude.

The first can be obtained with most precision and certainty from a comparison of the zenith distances of the same stars found in opposite positions of the instrument. A comparison of the results for 1866 and 1867 indicated that the telescope tube itself, or, more precisely, the line joining the center of the object-glass and the fixed horizontal wires of the instrument, is not affected with any sensible cosine flexure. This result is probably very nearly correct, and, besides, its error, if any exist, will be eliminated from the mean of any two consecutive years' work with the instrument. Assuming its correctness, the cosine flexures to be actually applied will be those of the circle and the zenith distance micrometer. During the year 1867 the circle (B) was so set that it read 359° 30′ at the zenith, the readings increasing toward the south. The corrections to be applied to the zenith distances south, whether observed directly or by reflection, are*

Flexure of micrometer	. . . .	$+ 0.30 \cos Z$
Flexure of circle B	. . . .	$- 0.86 \cos Z$
Total	. . . .	$- 0.56 \cos Z$

INVESTIGATION OF THE CORRECTION TO THE ADOPTED LATITUDE, FROM THE OBSERVATIONS OF 1869.

The sum of all the corrections thus far found is applied to the mean north polar distances of each star observed on both sides of the pole in the course of the year. Its value is as follows:

		$''$ $''$ $''$
To direct results	. . . .	$+ 0.06 \sin Z - 0.56 \cos Z + 0.27 +$ Div.
To reflection results	. . .	$+ 0.10 \sin Z - 0.56 \cos Z - 0.27 -$ Div.

* Description of the Transit Circle, §§ 61, 67.

The resulting corrections to the positions of the American Ephemeris are given in columns 3 to 7 of the following table. The small subscript figures indicate the weights.

Star.	Dec.	Corrections.		$2\,\delta\,\phi$	$2\,W\,\delta\,\phi$
		U. C.	S. P.		
	°	"	"	"	"
Polaris	88	$+\,0.20_{11}$	$-\,0.06_{13}$	$+\,0.14_{12}$	$+\,1.68$
δ Ursæ Minoris	87	$-\,1.61_{3}$	$+\,0.49_{8}$	$-\,1.12_{2}$	$-\,2.24$
50 Cassiopeæ	72	$-\,0.75_{1}$	$+\,0.07_{2}$	$-\,0.68_{1}$	$-\,0.68$
β Cephei	70	$-\,1.42_{2}$	$+\,1.53_{2}$	$+\,0.11_{1}$	$+\,0.11$
ι Cassiopeæ	70	$-\,0.44_{1}$	$+\,0.41_{2}$	$-\,0.03_{1}$	$-\,0.03$
δ Draconis	67	$+\,0.45_{1}$	$+\,0.08_{1}$	$+\,0.53_{\frac{1}{2}}$	$+\,0.26$
α Camelopardi	66	$+\,0.28_{1}$	$-\,1.44_{1}$	$-\,1.16_{\frac{1}{2}}$	$-\,0.58$

The resulting correction to the assumed latitude is only $-\,0''.04$ instead of $-\,0''.50$, as in previous years. Comparing this with the change in the discordance of direct and reflection observations, it will be seen that the change is due mainly to the reflection observations.

It may therefore be of interest to inquire what value of the latitude would have been derived from direct and reflection observations separately in the different years in which the instrument has been in use. The zenith distances have been actually reduced on the following system:

(1.) In the preliminary reductions the zenith distances are reduced provisionally with a zenith point correction derived from nadir observations, or, during parts of 1866 and 1867, from observations of the leveled collimators.

(2.) The comparison of direct and reflection observations shows the correction which must be applied to the provisional zenith point correction to obtain the zenith point correction which would have been derived from the combination of direct and reflection observations. The correction thus obtained is applied to all the zenith distances of stars. It is also found that this correction is sensibly constant on each side of the zenith, but changes at or near that point by an amount varying between $0''.60$ in 1867, and $0''.18$ in 1869. When the zenith distances are thus corrected, the latitudes derived from direct and reflection observations are necessarily identical.

(3.) If we had depended solely on nadir observations for the zenith point, independent values of the latitude would have been derivable from the direct and from the reflection observations. But we should first have to know the exact value of the cosine flexure of the telescope, which we have not yet succeeded in determining otherwise than by comparison of different years' work in which the instrument was in opposite positions. The general result of this comparison is that the telescope-tube itself is not affected with any sensible cosine flexure, and that the latter depends solely on the micrometer and the circle. The correction actually applied has, however, never corresponded exactly with this hypothesis. We therefore give the derivation of the necessary correction to the provisional zenith distances, as follows:

	1866.	1867.	1868.	1869.
	"	"	"	"
Correction to nadir circle reading for flexure of circle	−0.01	+0.86	−0.86	+0.86
Correction of circle reading for effect of gravity on micrometer	+0.30	−0.30	+0.30	−0.30
Total correction	+0.29	+0.56	−0.56	+0.56
Correction actually used in provisional reductions	−0.14	+0.95	−0.86	+0.96
Difference to be subtracted from direct polar distances as provisionally reduced	+0.43	−0.39	+0.30	−0.40

We next apply these corrections to the mean value of $\frac{1}{2}$(D. − R.) derived from north stars, and thus find that the half value of the discordance would have been, if the proper zenith point correction had been used,

	"
1866	+ 0.53
1867	+ 0.84
1868	+ 0.48
1869	− 0.14

We now add this correction to the latitudes, given by the separate years' work, to get the result of direct observations, and subtract it to get the result of reflection observations. The result is:

Year.	Latitude deducible from—	
	Direct observations.	Reflection observ'ns.
	° ′ ″	° ′ ″
1866	38 53 38.73	38 53 37.67
1867	39.16	37.48
1868	38.69	37.73
1869	38.62	38.90

This result tends to throw suspicion on the reflection observations of zenith distance, and on the corrections to the latitude derived from them. The observations of polar distance having always been reduced to what they would have been if measured from a visible pole, any error of the latitude is eliminated from the concluded polar distances of all stars.

It may also be remarked that had the reflection observations been entirely rejected, there would have been no systematic differences between the polar distances of the northern stars then deduced and those actually concluded, while the actually concluded polar distances of southern stars would have been changed by the following amounts:

	″
1866	— 0.47
1867	— 0.60
1868	— 0.68
1869	— 0.18

By applying these corrections to the concluded N. P. D.'s of southern stars for the several years, they will be reduced to N. P. D.'s not differing *systematically* from those which would have been derived from direct observations alone.

Proceeding on the same system as in former years, we have the following corrections to be applied to the results of the preliminary reductions of the observations of 1869:

SYSTEMATIC CORRECTIONS TO BE APPLIED TO THE REDUCED NORTH POLAR DISTANCES OF OBJECTS OBSERVED DURING 1869, ON ACCOUNT OF DIVISION, FLEXURE, ERROR OF ASSUMED LATITUDE AND ZENITH POINT, AND DISCORDANCE OF DIRECT AND REFLECTION OBSERVATIONS.

N. P. D.	Div. Correction.		Flexure, &c.		Total Correction.	N. P. D.	Div. Correction.		Flexure, &c.		Total Correction.
	Dir.	Ref.	Dir.	Ref.	Dir.		Dir.	Ref.	Dir.	Ref.	Dir.
°	"	"	"	"	"	°	"	"	"	"	"
0	− 0.18	+ 0.18	− 0.09	− 0.66	− 0.27	40	+ 0.16	+ 0.01	− 0.25	− 0.80	− 0.09
1	.24	.18	.10	.67	.34	41	.15	.01	.25	.80	.10
2	.32	.21	.11	.67	.45	42	.13	.02	.25	.80	.12
3	.39	.27	.11	.68	.50	43	.10	.04	.25	.80	.15
4	.42	.30	.12	.68	.54	44	.07	.04	.25	.80	.18
5	− 0.41	+ 0.30	− 0.12	− 0.69	− 0.53	45	+ 0.06	+ 0.03	− 0.25	− 0.80	− 0.19
6	.35	.30	.13	.69	.48	46	.06	.03	.24	.80	.18
7	.31	.34	.14	.70	.47	47	.08	.06	.22	.82	.14
8	.30	.40	.14	.70	.44	48	.12	.10	.20	.83	.08
9	.30	.43	.15	.71	.45	49	.14	.12	.19	.85	.05
10	− 0.28	+ 0.40	− 0.15	− 0.71	− 0.43	50	+ 0.11	+ 0.09	− 0.17	− 0.86	− 0.06
11	.22	.33	.16	.72	.38	51	+ 0.04	+ 0.03	.15	.88	.11
12	.18	.26	.16	.72	.36	52	− 0.03	− 0.04	.13	.89	.16
13	.18	.18	.17	.73	.35	53	.09	.11	.11	.91	.20
14	.18	.16	.17	.73	.35	54	.12	.14	.10	.92	.22
15	− 0.17	+ 0.17	− 0.18	− 0.74	− 0.35	55	− 0.10	− 0.12	− 0.08	− 0.94	− 0.20
16	.16	.18	.18	.74	.34	56	.06	.08	.06	.95	.12
17	.15	.17	.19	.75	.34	57	.03	.06	.06	.95	.09
18	.13	.13	.19	.75	.32	58	.03	.06	.06	.95	.09
19	.12	.10	.20	.76	.32	59	.04	.07	.05	.95	.09
20	− 0.11	+ 0.07	− 0.20	− 0.77	− 0.31	60	− 0.04	− 0.10	− 0.05	− 0.94	− 0.09
21	.09	+ 0.05	.21	.77	.30	61	.02	.13	.05	.94	.07
22	.06	.00	.21	.77	.27	62	.01	.15	.05	.94	.06
23	.03	− 0.07	.21	.78	.24	63	− 0.01	.16	.04	.93	.05
24	.02	.11	.22	.78	.24	64	+ 0.02	.15	.04	.93	− 0.02
25	− 0.04	− 0.13	− 0.22	− 0.78	− 0.26	65	+ 0.09	− 0.12	− 0.04	− 0.93	+ 0.05
26	.06	.15	.23	.78	.29	66	.17	.07	.03	.92	.14
27	.08	.18	.23	.78	.31	67	.24	− 0.03	.03	.92	.21
28	.08	.22	.23	.79	.31	68	.26	+ 0.01	.03	.92	.23
29	.08	.23	.24	.79	.32	69	.27	.03	.03	.92	.24
30	− 0.08	− 0.21	− 0.24	− 0.79	− 0.32	70	+ 0.25	+ 0.04	− 0.02	− 0.91	+ 0.23
31	.07	.19	.24	.79	.31	71	.20	.06	.02	.91	.18
32	.06	.20	.24	.79	.30	72	.19	.07	.02	.91	.17
33	.04	.24	.24	.79	.28	73	.20	.08	.01	.90	.19
34	.03	.27	.24	.79	.27	74	.22	.08	− 0.01	.90	.21
35	− 0.01	− 0.27	− 0.25	− 0.80	− 0.26	75	+ 0.22	+ 0.08	.00	− 0.89	+ 0.22
36	+ 0.03	.24	.25	.80	.22	76	.18	.08	.00	.89	.18
37	.07	.17	.25	.80	.18	77	.15	.06	+ 0.01	.88	.16
38	.12	.10	.25	.80	.13	78	.13	.03	.01	.87	.14
39	+ 0.15	− 0.02	− 0.25	− 0.80	− 0.10	79	+ 0.11	+ 0.02	+ 0.02	− .87	+ 0.13

SYSTEMATIC CORRECTIONS TO BE APPLIED TO THE REDUCED NORTH POLAR DISTANCES OF OBJECTS OBSERVED DURING 1869, &c.—Continued.

N. P. D.	Div. Correction.		Flexure, &c.		Total Correction.	N. P. D.	Div. Correction.		Flexure, &c.		Total Correction.
	Dir.	Ref.	Dir.	Ref.	Dir.		Dir.	Ref.	Dir.	Ref.	Dir.
°	″	″	″	″	″	°	″	″	″	″	″
80	+ 0.08	+ 0.03	+ 0.02	− 0.86	+ 0.10	124	− 0.03	− 0.27	+ 0.39	− 0.48	+ 0.36
81	+ 0.01	.06	.03	.85	+ 0.04	125	− 0.01	− 0.27	+ 0.40	− 0.47	+ 0.39
82	− 0.04	.09	.04	.84	.00	126	.03	.24	.41	.46	.38
83	.07	.11	.04	.84	− 0.03	127	.07	.17	.42	.45	.35
84	.09	.12	.05	.83	.04	128	.12	.10	.43	.44	.31
85	− 0.13	+ 0.14	+ 0.06	− 0.82	− 0.07	129	.15	.02	.44	.43	.29
86	.17	.15	.06	.82	.11	130	− 0.16	− 0.01	+ 0.45	− 0.42	+ 0.29
87	.19	.16	.07	.81	.12	131	− 0.15	+ 0.01	+ 0.45	− 0.41	+ 0.30
88	.17	.17	.08	.80	.09						
89	.15	.18	.08	.80	.07	326	− 0.06	− 0.08	+ 0.20	− 0.39	+ 0.14
90	− 0.18	+ 0.18	+ 0.09	− 0.79	− 0.09	327	.03	.06	.19	.40	.16
91	.24	.18	.10	.78	.14	328	.03	.06	.18	.41	.15
92	.32	.21	.11	.77	.21	329	.04	.07	.17	42	.13
93	.39	.27	.11	.76	.28	330	− 0.04	− 0.10	+ 0.15	− 0.42	+ 0.12
94	.42	.30	.12	.76	.30	331	.02	.13	.15	.43	.13
95	− 0.41	+ 0.30	+ 0.13	− 0.75	− 0.28	332	.01	.15	.14	.44	.12
96	.35	.30	.14	.74	.21	333	− 0.01	.16	.13	.45	.12
97	.31	.34	.14	.73	.17	334	+ 0.02	.15	.13	.45	.15
98	.30	.40	.15	.72	.15	335	+ 0.09	− 0.12	+ 0.12	− 0.46	+ 0.21
99	.30	.43	.16	.71	.14	336	.17	.07	.11	.47	.28
100	− 0.28	+ 0.40	+ 0.17	− 0.70	− 0.11	337	.24	− 0.03	.10	.48	.34
101	.22	.33	.18	.69	− 0.04	338	.26	+ 0.01	.09	.49	.35
102	.18	.26	.19	.68	+ 0.01	339	.27	.03	.08	.49	.35
103	.18	.18	.20	.67	.02	340	+ 0.25	+ 0.04	+ 0.07	− 0.50	+ 0.32
104	.18	.16	.20	.66	.02	341	.20	.06	.06	.51	.26
105	− 0.17	+ 0.17	+ 0.21	− 0.66	+ 0.04	342	.19	.07	.05	.52	.24
106	.16	.18	.22	.65	.06	343	.20	.08	.05	.53	.25
107	.15	.17	.23	.64	.08	344	.22	.08	.04	.53	.26
108	.13	.13	.24	.63	.11	345	+ 0.22	+ 0.08	+ 0.03	− 0.54	+ 0.25
109	.12	.10	.24	.62	.12	346	.18	.08	.02	.55	.20
110	− 0.11	+ 0.07	+ 0.25	− 0.61	+ 0.14	347	.15	.06	+ 0.01	.56	.16
111	.09	.05	.26	.60	.17	348	.13	.03	.00	.57	.13
112	.06	.00	.27	.59	.23	349	.11	.02	.00	.58	.11
113	.03	.07	.28	.58	.25	350	+ 0.08	+ 0.03	− 0.01	− 0.59	+ 0.07
114	.02	.11	.29	.57	.27	351	+ 0.01	.06	.02	.60	− 0.01
115	− 0.04	− 0.13	+ 0.30	− 0.57	+ 0.26	352	− 0.04	.09	.03	.61	.07
116	.06	.15	.31	.56	.25	353	.07	.11	.03	.61	.10
117	.08	.18	.32	.55	.24	354	.09	.12	.04	.62	.13
118	.08	.22	.33	.54	.25	355	− 0.13	+ 0.14	− 0.05	− 0.62	− 0.18
119	.08	.23	.34	.53	.26	356	.17	.15	.06	.63	.23
120	− 0.08	− 0.21	+ 0.35	− 0.52	+ 0.27	357	.19	.16	.07	.63	.26
121	.07	.19	.36	.51	.29	358	.17	.17	.07	.64	.24
122	.06	.20	.37	.50	.31	359	.15	.18	.08	.64	.23
123	− 0.04	− 0.24	+ 0.38	− 0.49	+ 0.34	360	− 0.18	+ 0.18	− 0.09	− 0.65	− 0.27

POSITIONS OF THE SUN, MOON, AND PLANETS, DEDUCED FROM OBSERVATIONS WITH THE TRANSIT CIRCLE.

When both limbs of an object presenting a fully-illuminated disk were observed, the right ascension here given is that of the mean of the two limbs, as found in column *Apparent R. Ascension* of the observations.

When only one full limb was observed the right ascension of the center is found by applying the sidereal time of semi-diameter passing meridian, as given in the column *Miscellaneous Corrections*, without correction except for the sun. For this object, the semi-diameter corresponding to the observer, as given in the preceding volume, has been used.

When one of the limbs observed was defective, the observed difference of right ascension of limbs was multiplied by the computed ratio of this difference to the true semi-diameter, and the observed semi-diameter thus deduced was applied to the right ascension of the full limb to obtain that of the center. The adopted formulæ for the computation are as follows: Put

i = elongation of earth and sun as seen from planet.
$b = \cos i$.
δ, δ' = declinations of planet and sun.
A = difference of their right ascensions.
θ = angle which the line of cusps makes with the meridian.
f, f' = factors by which measured horizontal and vertical diameters must be multiplied to obtain true semi-diameter.

To find f we then have

$$\tan \theta = \frac{\cos \delta \tan \delta'}{\sin A} - \frac{\sin \delta}{\tan A}$$

When the planet is gibbous

$$g = \cos \theta \sqrt{b^2 + \tan^2 \theta} = \cos \theta'' \text{ when } \sin \theta'' = \cos \theta \sin i$$
$$g' = \sin \theta \sqrt{b^2 + \cot^2 \theta} = \cos \theta' \text{ when } \sin \theta' = \sin \theta \sin i$$
$$f = \frac{1}{1+g}$$
$$f' = \frac{1}{1+g'}$$

When the illuminated disk is a crescent,

$$g = \cos \theta; \qquad f = \frac{1}{1+g}$$
$$g' = \sin \theta; \qquad f' = \frac{1}{1+g'}$$

When the center of light of Mercury was observed, let ε be the reduction to true center. The value of ε was obtained from the empirical formulæ

$$n = \frac{(1-b)\ (5+b)}{12}$$

in R. A. ε = semi-diam. $\times\ n \cos \theta$
in N. P. D. ε = semi-diam. $\times\ n \sin \theta$

The north polar distances are reduced from the part actually observed to center in the same way with the right ascensions, and by the formulæ and numbers just given. The following further corrections are then applied:

1. The parallax in altitude found in the last column of the observations.
2. The corrections for division, flexure, latitude, and constant of zenith point, taken from the last column of the preceding table.

The columns of corrections always give, in the first place, the corrections to the positions given in the transit ephemeris of the American Ephemeris and Nautical Almanac. No transit ephemeris of the moon

being there found, the tabular right ascension is computed thus: the *observed right ascension of center*, considered as sidereal time, is reduced to Washington mean time, and the correction

$$5^h\ 8^m\ 12^s$$

applied to reduce it to Greenwich time. The co-ordinates are then interpolated to this moment from the Greenwich part of the Ephemeris.

When the polar distance only was observed, the mean time was taken immediately from the "Moon culminations" of the American Ephemeris.

The tabular place from Hansen's tables of the moon is interpolated from the British Nautical Almanac in the same way.

The observed positions of Venus and Mars are also compared with Le Verrier's tables. The co-ordinates are here interpolated occasionally from the British Nautical Almanac, as a check, but in most cases are obtained by applying to the transit position of the American Ephemeris the differences between the positions for Greenwich noon given in the two Ephemerides.

The positions of Neptune are also compared with Newcomb's tables, the tabular positions being interpolated from the Appendix to the American Ephemeris for 1869.

In the list of observed positions of the small planets, the Washington mean time is computed from the observed right ascension. This is increased by $6^h\ 1^m.8$ to reduce it to Berlin time, and the "aberration time," — [0.9148] $\varDelta$, usually given in the Ephemeris, is subtracted. Thus we have the Berlin mean time at which the light left the planet. To this time the position given in the Ephemeris is interpolated.

The Ephemeris with which each observed position of the asteroids is compared is indicated after its name, the following abbreviations being used:

B. Y.—Berliner Astronomisches Jahrbuch.
A. N.—Astronomische Nachrichten.

TABLE A.—INDIVIDUAL DETERMINATIONS OF COLLIMATION DURING THE YEAR 1869.

Date.		South. Image East.	North. Image East.	Coll. from Observation.	τ	C_0.
1869.		r.	r.	s.	°	s.
January	10.9	+ .046	+ .082	+ .049	46.0	+ .202
	18.0	− .064	+ .275	+ .092	39.0	+ .222
	27.1	− .062	+ .084	− .005	42.0	+ .135
February	1.1	+ .015	.000	− .008	43.0	+ .135
	8.1	− .010	+ .024	− .009	43.0	+ .134
	15.4	+ .146	− .274	− .081	54.0:	+ .099:
	21.9	− .019	− .013	− .032	48.0	+ .128
March	1.1	+ .120	− .058	+ .016	34.0	+ .129
	9.1	− .086	+ .061	− .029	51.0	+ .141
	15.1	− .026	− .054	− .055	51.4	+ .116
	22.0	− .095	+ .085	− .021	40.0	+ .112
April	1.1	+ .303	− .389	− .058	49.0	+ .105
	4.9	+ .147	− .201	− .042	48.0	+ .118
	13.1	− .073	+ .057	− .024	47.0	+ .133
	18.9	− .030	− .122	− .090	68.0	+ .137
	26.0	− .033	− .126	− .097	69.0	+ .133
May	2.9	+ .063	− .122	− .047	49.6	+ .118
	16.9	+ .040	− .286	− .141	61.5	+ .064*r*
	23.9	+ .001	− .172	− .103	66.5	+ .119
	31.3	+ .050	− .312	− .150	83.0	+ .127
June	6.9	− .014	− .183	− .116	69.3	+ .115

January 18. After this observation collimation was altered $-0^s.09$.
February 8.0. Eye-piece taken out.

TABLE B.—INDIVIDUAL DETERMINATIONS OF LEVEL DURING THE YEAR 1869.

1869.		s.	1869.		s.
January	5.3	+ .074	March	18.6	+ .145
	7.5	+ .040		23.3	+ .045
	12.5	+ .119		24.6	+ .069
	16.5	+ .088		27.4	− .027
	19.5	+ .083		30.7	+ .102
	20.6	+ .091		31.5	+ .090
	22.4	+ .034	April	3.4	+ .087
	23.5	+ .087		7.5	+ .019
	26.4	+ .062		8.5	+ .005
	27.5	+ .041		9.5	+ .047
	28.5	+ .012		13.3	+ .040
	30.6	.000		16.4	− .024
February	5.5	+ .143		17.4	− .059
	6.5	+ .159		19.5	− .093
	10.5	+ .060		21.5	+ .214
	11.5	+ .053		22.5	+ .168
	12.5	+ .105		24.4	+ .168
	13.5	+ .006		26.0	+ .138
	15.5	+ .086		29.7	+ .090
	16.4	+ .150	May	3.1	+ .065
	19.4	+ .098		3.6	+ .072
	24.5	+ .083		4.6	+ .066
	26.5	+ .081		5.4	.000
	27.5	+ .104		10.5	+ .004
March	1.5	+ .127		15.5	+ .096
	5.4	+ .131		20.5	+ .052
	12.4	+ .200		22.5	+ .049
	13.4	+ .136		24.5	+ .041
	15.5	+ .146		25.5	+ .033
	16.4	+ .197		26.4	+ .077
	17.4	+ .158	June	5.5	+ .315

TABLE C.—CORRECTIONS FOR COLLIMATION, LEVEL, AND AZIMUTH OF THE TRANSIT CIRCLE FOR 1869.

Date.	Temp.	*c*	*b*	*a*	Date.	Temp.	*c*	*b*	*a*
1869.	°	s.	s.	s.	1869.	°	s.	s.	s.
January 6	43	+ .07	+ .06	− 0.20	March 20	46	− .04	+ .10	+ 0.20
7	51	+ .04	+ .04	− 0.22	21	45	− .04	+ .09	+ 0.15
8*d*	48	+ .05	+ .04	− 0.10	23	41	− .02	+ .05	+ 0.10
12*n*	37	+ .09	+ .11	+ 0.20	24	49	− .05	+ .06	− 0.04
13	37	+ .09	+ .11	+ 0.10	27	60	− .09	.00	− 0.02
16	39	+ .08	+ .09	− 0.03	30*n*	57	− .08	+ .10	+ 0.40
19*n*	33	+ .02	+ .09	− 0.03	31	50	− .05	+ .09	+ 0.58
20	42	.00	+ .09	− 0.10	April 3	41	− .02	+ .08	+ 0.53
22*n*	33	+ .02	+ .04	− 0.16	5*d*	52	− .06	+ .05	+ 0.40
23	42	.00	+ .09	− 0.16	6*d*	60	− .09	+ .04	+ 0.18
26	35	+ .02	+ .06	− 0.20	7	48	− .05	+ .02	+ 0.32
27*n*	42	.00	+ .04	− 0.20	8	52	− .06	.00	+ 0.32
28	49	− .03	+ .01	− 0.20	9*n*	45	− .04	+ .04	+ 0.34
30	53	− .04	.00	+ 0.03	12	48	− .03	+ .04	+ 0.20
February 1	36	+ .02	+ .10	+ 0.20	13	45	− .02	+ .04	+ 0.20
4	31	+ .03	+ .14	+ 0.23	14*n*	40	.00	.00	+ 0.12
5	31	+ .03	+ .14	+ 0.23	15*n*	50	− .03	.00	+ 0.07
6	42	.00	+ .14	+ 0.20	16	61	− .07	− .02	+ 0.02
8	39	.00	+ .14	+ 0.20	17	60	− .07	− .06	+ 0.10
10*n*	42	− .01	+ .06	+ 0.03	19*n*	71	− .10	− .09	+ 0.36
11	50	− .04	+ .08	− 0.10	21*n*	65	− .08	+ .20	+ 1.29
12	50	− .04	+ .08	− 0.01	22	65	− .08	+ .17	+ 1.17
13	56	− .06	+ .04	− 0.05	23*d*	72	− .11	+ .17	+ 1.05
15	60	− .07	+ .09	+ 0.34	24*n*	65	− .08	+ .17	+ 0.92
16	42	− .01	+ .15	+ 0.50	26*d*	69	− .10	+ .14	+ 0.93
17*d*	44	− .02	+ .10	+ 0.41	27*d*	78	− .13	+ .12	+ 0.98
18*d*	44	− .02	+ .10	+ 0.37	28*d*	78	− .13	+ .10	+ 0.92
19	42	− .01	+ .10	+ 0.33	29	61	− .07	+ .09	+ 0.86
20	48	− .03	+ .10	+ 0.32	May 3	51	− .05	+ .07	+ 0.58
24	37	+ .01	+ .08	+ 0.25	4	58	− .07	+ .07	+ 0.52
25*d*	41	− .01	+ .08	+ 0.30	5	58	− .07	.00	+ 0.40
26*n*	38	.00	+ .08	+ 0.30	8*d*	60	− .08	.00	+ 0.42
27*n*	31	+ .03	+ .10	+ 0.35	10	68	− .11	.00	+ 0.44
March 1	32	+ .02	+ .13	+ 0.26	15	66	− .10	+ .09	+ 0.74
3*d*	45	− .01	+ .13	+ 0.20	17	62	− .09	+ .08	+ 0.74
4*n*	29	+ .03	+ .13	+ 0.10	18*d*	62	− .09	+ .08	+ 0.66
5	28	+ .04	+ .13	+ 0.21	20	60	− .08	+ .05	+ 0.51
6*c*	25	+ .05	+ .13	+ 0.02	21	68	− .11	+ .05	+ 0.50
9*d*	53	− .05	+ .15	+ 0.03	22*n*	57	− .07	+ .05	+ 0.46
11	43	− .01	+ .16	+ 0.21	24	68	− .10	+ .04	+ 0.48
12	37	+ .01	+ .16	+ 0.21	25*n*	70	− .11	+ .03	+ 0.48
13	50	− .04	+ .14	+ 0.21	26	80	− .15	+ .08	+ 0.52
15*n*	33	.00	+ .14	+ 0.40	31*d*	80	− .15	+ .10	+ 0.82
16	36	.00	+ .18	+ 0.34	June 3	80	− .15	+ .10	+ 0.90
17	39	− .02	+ .16	+ 0.26	4*d*	80	− .15	+ .10	+ 1.00
18	36	− .01	+ .14	+ 0.24	5*n*	64	− .09	+ .30	+ 1.25

TABLE D.—ADOPTED CORRECTIONS, IN HUNDREDTHS OF SECONDS OF TIME, TO THE POSITIONS OF CLOCK-STARS IN THE AMERICAN EPHEMERIS FOR 1869.

α Andromedæ		0	α Virginis	+	1
γ Pegasi	−	2	ζ Virginis		0
β Ceti	+	3	η Bootis	−	3
ε Piscium	−	5	α Bootis	+	1
θ^1 Ceti		0	ε Bootis	−	1
η Piscium	+	5	α^2 Libræ	−	2
ο Piscium	−	4	β Libræ	−	1
β Arietis	+	1	μ^1 Bootis		0
α Arietis	+	1	α Coronæ Borealis		0
65 Ceti	+	3	α Serpentis		0
γ Ceti		0	ε Serpentis	−	1
α Ceti	+	2	δ Scorpii		0
ζ Arietis	−	3	β^1 Scorpii	+	5
η Tauri	+	1	δ Ophiuchi	+	2
ζ Persei		0	α Scorpii	+	2
γ^1 Eridani	+	3	ζ Ophiuchi	−	5
γ Tauri	+	2	κ Ophiuchi	+	3
ε Tauri		0	α^1 Herculis		0
α Tauri		0	b Ophiuchi		0
ι Aurigæ	−	3	α Ophiuchi	+	1
11 Orionis	−	4	μ Herculis		0
β Orionis	+	1	γ^2 Sagittarii	−	3
β Tauri	−	1	μ^1 Sagittarii	−	2
δ Orionis	−	2	η Serpentis	+	1
α Leporis	−	2	1 Aquilæ	+	4
ε Orionis	+	1	α Lyræ		0
α Columbæ	−	6	β Lyræ	+	2
α Orionis		0	σ Sagittarii	−	2
μ Geminorum		0	ζ Aquilæ	+	4
γ Geminorum		0	d Sagittarii	−	8
α Canis Majoris	−	7	δ Aquilæ	+	1
ε Canis Majoris	−	2	κ Aquilæ		0
δ Geminorum	−	3	λ Aquilæ	+	1
α^2 Geminorum	+	20	α Aquilæ	+	1
α Canis Minoris	−	2	β Aquilæ		0
β Geminorum		0	τ Aquilæ	−	9
φ Geminorum	−	4	α^2 Capricorni		0
15 Argus	−	2	ε Delphini	+	1
ε Hydræ		0	α Cygni		0
κ Cancri		0	μ Aquarii	+	2
α Hydræ		0	ζ Cygni	−	1
ε Leonis	−	1	1 Pegasi	−	8
μ Leonis	+	5	β Aquarii		0
α Leonis	−	1	ξ Aquarii	−	2
γ^1 Leonis	+	2	ε Pegasi	−	2
ρ Leonis	−	4	μ Capricorni	−	5
l Leonis	+	7	α Aquarii	−	1
δ Leonis	−	2	θ Aquarii	−	1
δ Crateris		0	π Aquarii	−	1
τ Leonis	+	1	η Aquarii		0
91 Leonis (v)	−	1	ζ Pegasi	+	4
β Leonis	+	1	λ Aquarii	+	6
ο Virginis	−	6	α Piscis Australis	−	1
η Virginis	−	1	α Pegasi	+	1
β Corvi	+	6	ι Piscium	−	2
12 Canum Venaticorum	+	1	ω Piscium	−	2
θ Virginis	−	3			

TABLE E.—ADOPTED CORRECTIONS AND RATE OF SIDEREAL CLOCK IN 1869.

Mean day and sidereal hour.			Clock correction from mean of observations.	Clock correction corr'd for personal equation.	Apparent rate between groups.	Adopted daily rate.
1869.	d.	h.	s.	s.	s.	s.
Jan.	5	1.8	+ 35.95 : *n.e.*	+ 35.71 :		+ 0.45
	6	4.7	+ 36.45*n.e.*	+ 36.21	+ 0.45	+ .40
	7	0.7	+ 36.47*f*	+ 36.51	+ .36	+ .24
	8	21.1	+ 36.84 : *n.e.*	+ 36.60	+ .10	+ .20
	12	6.7	+ 37.67*f*	+ 37.71	+ .25	+ .32
	13	1.1	+ 38.26*n.e.*	+ 38.02	+ .40	+ .36
	16	5.0	+ 38.86*f*	+ 38.90	+ .28	+ .24
	19	6.8	+ 39.36*f*	+ 39.40	+ .16	+ .18
	20	2.6	+ 39.60*n*	+ 39.57	+ .21	+ .16
	22	4.3	+ 39.77*f*	+ 39.81	+ .12	+ .09
	23	6.4	+ 39.83*f*	+ 39.87	+ .06	+ .05
	26	22.0	+ 39.90*f*	+ 39.94	+ .03	+ .12
	27	10.5	+ 40.21*f*	+ 40.25	+ .20	+ .12
	28	9.7	+ 39.28*hl*		+ .03	+ .03
	30	3.8	+ 40.29*f*	+ 40.33		+ .09
Feb.	1	0.6	+ 42.63*n*	+ 40.60	+ .15	+ .12
	5	2.8	+ 40.74*f*	+ 40.78	+ .04	+ .12
	6	6.3	+ 40.86*t*	+ 40.93	+ .13	+ .14
	8	7.3	+ 41.28*n*	+ 41.25	+ .16	+ .08
	10	7.3	+ 41.20*t*	+ 41.27	+ .01	+ .03
	11	5.3	+ 41.36*n*	+ 41.33	+ .07	+ .12
	12	4.8	+ 41.48*f*	+ 41.52	+ .20	+ .12
	13	3.3	+ 40.46*t*	+ 41.53	+ .01	+ .01
	15	4.5	+ 41.58*n*	+ 41.55	+ .01	− .06
	16	6.7	+ 41.36*f*	+ 41.40	− .14	− .12
	17	0.1	+ 41.35 : *t*	+ 41.42 :	− .11	− .11
	18	0.0	+ 41.24*n*	+ 41.21		− .08
	19	5.7	+ 41.10*f*	+ 41.14	− .06	− .04
	20	7.9	+ 41.05*t*	+ 41.12	− .02	− .02
	24	3.3	+ 41.01*t*	+ 41.08	− .01	.00
	26	9.8	+ 41.17*f*	+ 41.21	+ .06	+ .08
	27	8.8	+ 41.24*t*	+ 41.31	+ .10	+ .08

Mean day and sidereal hour.			Clock correction from mean of observations.	Clock correction corr'd for personal equation.	Apparent rate between groups.	Adopted daily rate.
1869.	d.	h.	s.	s.	s.	s.
Mar.	1	4.8	+ 41.37*f*	+ 41.41	+ 0.05	.00
	2.9	21.1	+ 41.24 : *t*	+ 41.31 :		−.07
	4	17.7	+ 41.18*n*	+ 41.15	− .07	.00
	5	8.6	+ 41.16*f*	+ 41.20	+ .08	.00
	6	18.6	+ 41.06*t*	+ 41.13	− .05	.00
	8.9	21.6	+ 42.28 : *f*	+ 41.32 :		.00
	11	3.9	+ 41.20*n*	+ 41.17	+ .01	+.04
	12	7.3	+ 41.22*f*	+ 41.26	+ .08	.00
	13	6.0	+ 41.12*t*	+ 41.19	− .07	−.06
	15	10.4	+ 41.12*n*	+ 41.09	− .05	+.06
	16	8.4	+ 41.19*f*	+ 41.23	+ .15	+.10
	17	8.8	+ 41.20*t*	+ 41.27	+ .04	.00
	18	5.8	+ 41.27*n*	+ 41.24	− .03	.00
	20	6.2	+ 41.22 : *t*	+ 41.29 :		+.10
	21	6.2	+ 41.42 : *n*	+ 41.39 :	+ .10	+.10
	23	9.8	+ 41.78*f*	+ 41.82		+.12
	24	12.3	+ 41.93*t*	+ 42.00	+ .16	+.18
	27	9.8	+ 42.54*t*	+ 42.61	+ .21	+.16
	30	16.2	+ 42.94*f*	+ 42.98	+ .11	.00
	31	6.1	+ 42.83*t*	+ 42.90	− .14	.00
Apr.	3	13.0	+ 43.25*t*	+ 43.32	+ .13	+.24
	4.9	22.0	+ 43.82*n*	+ 43.79	+ .34	+.30
	5.9	22.3	+ 44.01*f*	+ 44.05	+ .26	+.22
	7	8.2	+ 44.20*t*	+ 44.27	+ .17	+.20
	8	10.7	+ 44.55*n*	+ 44.52	+ .23	+.24
	9	11.5	+ 44.75*f*	+ 44.79	+ .27	+.28
	13	11.2	+ 45.93*f*	+ 45.97	+ .30	+.30
	14	9.1	+ 46.19*t*	+ 46.26	+ .31	+.24
	15	4.5	+ 46.53 : *n*	+ 46.50 :		+.16
	16	8.9	+ 46.54*f*	+ 46.58	+ .16	+.12
	17	9.8	+ 46.71*h*	+ 46.63	+ .05	.00
	19	10.2	+ 46.62*n*	+ 46.59	− .02	−.02

February 1. The counting clock would appear to be 1^s slow.

TABLE E.—ADOPTED CORRECTIONS AND RATE OF SIDEREAL CLOCK IN 1869—Continued.

Mean day and sidereal hour.		Clock correction from mean of observations.	Clock correction corr'd for personal equation.	Apparent rate between groups.	Adopted daily rate.	Mean day and sidereal hour.		Clock correction from mean of observations.	Clock correction corr'd for personal equation.	Apparent rate between groups.	Adopted daily rate.
1869. d.	h.	s.	s.	s.	s.	1869. d.	h.	s.	s.	s.	s.
Apr. 21	12.0	+ 46.62*h*	+ 46.54	− 0.02	+ 0.03	May 15	11.0	+ 0.07*f*	+ 0.11	− .20	−.20
22	10.7	+ 46.63*n*	+ 46.60	+ .06	+ .06	17	12.9	− 0.27*n*	− 0.30	− .27	−.24
24	12.2	+ 46.66*f*	+ 46.70	+ .05	+ .10	18	5.4	− 0.52*f*	− 0.48	− .24	−.24
25.9	23.8	+ 46.93*n*	+ 46.90	+ .14	+ .12	20	11.8	− 0.98*n*	− 1.01	− .31	−.28
27	4.5	+ 46.85 : *f*	+ 46.89 :	+ .11	+ .12	22	14.3	− 1.70*f*	− 1.66	− .40	−.36
29	11.0	+ 47.31*n*	+ 47.28	+ .13	+ .12	24	14.3	− 2.42*n*	− 2.45	− .30	−.36
May 3	8.1	+ 47.83*n*	+ 47.80	+ .08	+ .10	25	15.6	− 2.80*f*	− 2.76	− .34	−.32
4	8.6	+ 47.84*f*	+ 47.88	+ .24	+ .16	26	15.4	− 3.02*h*	− 3.10	− .01	−.18
5	12.4	+ 48.24*h*	+ 48.16	+ .16	+ .20	June 3	15.1	− 3.15*n*	− 3.18	+ .21	.00
8	6.1	+ 48.58*f*	+ 48.62		+ .16	5	15.8	− 2.80*f*	− 2.76		+.21
10	13.4	+ 53.48*n*	+ 53.45		.00						

THE MERIDIAN TRANSIT INSTRUMENT.

During the year this instrument was used for observing stars whose positions in declination had been previously determined by the Mural Circle or the Prime Vertical Transit Instrument, and for a portion of the year the moon and the larger planets were likewise observed. The method of observation was that used in previous years.

The transit system consists of five groups or tallies of vertical threads, and in addition to these there are three vertical threads, movable by a micrometer-screw, and two stationary horizontal ones. With the clamp-end of the axis to the east, the tallies are named in the order of the transit of stars above the pole A, B, C, D, and E.

The tally over which an object has been observed is shown by the inspection of the intervals between the threads. The individual threads of each tally are designated by the numbers 1, 2, 3, 4, 5, for A, C, and E, and 1, 2, and 3 for B and D, respectively. One vertical thread, A_0, is outside of tally A, and another, E_6 is outside of E. These two, with A_5, B_1, C_3, E_3, and E_1, constitute a system over which transits with eye and ear may be conveniently observed.

From the mean of a number of observations of Polaris and δ Ursæ Minoris, the equatorial intervals between each thread and the mean of B_1, B_2, B_3, C_1. C_2, C_3, C_4, C_5, D_1, D_2, D_3, were found to be as follows, the notation corresponding to clamp east:

EQUATORIAL INTERVALS.

Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.
	s.		s.		s.		s.		s.
A_1	+35.628	.	. .	C_1	+2.197	D_1	−11.869	E_1	−30.231
A_2	+34.493	.	. .	C_2	+1.218	D_2	−12.950	E_2	−32.641
A_3	+33.084	B_1	+15.021	C_3	−0.003	D_3	−14.978	E_3	−33.888
A_4	+31.836	B_2	+12.966	C_4	−1.188	.	. .	E_4	−35.137
A_5	+29.762	B_3	+11.808	C_5	−2.222	.	. .	E_5	−36.365

On the 13th of October, the threads having been destroyed by an accident, a new set was put in by Mr. Gardner on the old scores nearly. The intervals of these threads read as follows:

Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.	Thread.	Interval.
	s.		s.		s.		s.		s.
A_1	+35.702	.	. .	C_1	+2.365	D_1	−11.901	E_1	−30.147
A_2	+34.583	.	. .	C_2	+1.257	D_2	−13.091	E_2	−32.605
A_3	+33.253	B_1	+14.715	C_3	+0.125	D_3	−14.715	E_3	−33.828
A_4	+31.951	B_2	+12.927	C_4	−1.167	.	. .	E_4	−35.017
A_5	+29.831	B_3	+11.785	C_5	−2.303	.	. .	E_5	−36.289

The intervals for A_0 and E_6, not having been used, are not given.

The times of transit of all objects more than 5° distant from the pole were recorded by means of the Morse register.

INSTRUMENTAL ERRORS.

Aided by a collimating eye-piece, the error of level and collimation were obtained by reversing the instrument over a basin of mercury, and measuring with the micrometer-screw of the eye-piece the distance between the central thread and its image seen in the mercury. If we represent by 2Δ the distance of the central thread west of its image when the clamp-end of the axis is east; by $2\Delta^1$, the same quantity, when the clamp is west; by p, the excess of the radius of the clamp-pivot divided by the distance between the pivots; and by $-r$ the reduction of the central thread to the mean of the system B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, and by a the correction for diurnal *aberration* $= -0^s.016$ in this latitude, we have:

$$c = \tfrac{1}{2}(\Delta - \Delta^1) - p + r + a, \text{ for clamp east.}$$
$$c = -\tfrac{1}{2}(\Delta - \Delta^1) + p - r + a, \text{ for clamp west.}$$
$$b = -\tfrac{1}{2}(\Delta + \Delta^1) - p, \text{ for clamp east.}$$
$$b = -\tfrac{1}{2}(\Delta + \Delta^1) + p, \text{ for clamp west.}$$

The value of p, as determined in 1864, was $p = +0^s.008$; the numerical value of r for the current year is $r = 0^s.00$. After October 13 the value of r is $r = -0^s.125$. All the observations for determining the errors of collimation and their results are given in the subjoined table, in which r, the value of a revolution of the micrometer, is $1^s.5865$. When great changes occur in the values of c between consecutive dates, they have been caused by adjustment with the collimating screws.

Date.		2 Δ	2 Δ¹	C. E.	C. W.	Date.		2 Δ	2 Δ¹	C. E.	C. W.
1869.		r.	r.	s.	s.	1869.		r.	r.	s.	s.
January	9	+ 0.60	+ 0.18	+0.147	−0.179	August	7	− 0.18	− 0.41	+0.071	−0.103
	30	+ 0.18	− 0.07	+0.079	−0.111		19	− 0.37	− 0.50	+0.031	−0.063
February	22	+ 0.15	− 0.08	+0.071	−0.103	September	7	− 0.19	− 0.36	+0.047	−0.079
March	22	+ 0.18	− 0.05	+0.071	−0.103		27	− 0.10	− 0.18	+0.011	−0.043
April	15	+ 0.06	− 0.09	+0.039	−0.071	October	16	+ 0.11	− 0.06	+0.047	−0.079
May	6	− 0.14	− 0.36	+0.067	−0.099		20	0.00	− 0.44	+0.027	−0.059
June	8	− 0.39	− 0.58	+0.055	−0.087		29	+ 0.48	+ 0.33	−0.089	+0.057
July	3	− 0.38	− 0.50	+0.027	−0.059	November	15	− 0.06	+ 0.05	−0.193	+0.161
	13	− 0.10	− 0.42	+0.107	−0.139		16	+ 0.05	− 0.12	−0.081	+0.049
	26	− 0.25	− 0.45	+0.059	−0.091	December	16	+ 0.10	− 0.16	−0.045	+0.013
	30	− 0.15	− 0.36	+0.063	−0.095		31	0.00	− 0.17	−0.081	+0.049

When observations to determine the value of c are tolerably accordant on successive dates, a mean is adopted for the whole period of such accordance; and where the differences are too great to permit inference that they may be due to errors of observation, the changes are assumed to have been uniformly progressive.

The values used in the reductions are stated at the bottom of each page of the printed observations.

The distance which the line of collimation passes from the pole and the point in which the meridian intercepts the equator are used instead of errors of level and azimuth. When the error of collimation is known, the first distance is directly obtained by observations of stars very near the pole, and may be represented by n. The second distance is determined by combining the value of n with the error of the level. Designating the latter by b, the latitude of the Observatory by φ, and representing this second distance by m, we obviously have,

$$m = -n \tan \varphi + b \sec \varphi$$

and the correction applicable to the observed transit of any star, to reduce it to the meridian, will be obtained by the formula,

$$\text{Correction} = m + n \tan \delta + c \sec \delta$$

in which δ represents the apparent declination of the star.

An approximate clock-error having been first obtained from one or more equatorial stars, the value of n was determined generally by comparing the time of transit of Polaris, δ Ursæ Minoris, λ Ursæ Minoris, or 51 Cephei, with the right ascension given in the American Ephemeris and Nautical Almanac for the year 1870, reduced to the date of the observation.

The value of n, found in this manner and used in the reduction of the stars, is published in the table at the bottom of the page of the published observations, under the head of corrections, &c.

It will be readily seen that if m is neither large nor subject to great variation, it will be eliminated through the clock-error. It has not been used separate from the clock-error except when the instrument was used for regulating the mean time of the Observatory, or when large enough to affect the reduction of the moon, and is therefore not always published in it susual place.

The clock-error was obtained from the corrected transits of one or more of the standard stars whose mean place for 1870.0 is given in the American Ephemeris.

The apparent place of these stars for the date was taken from the Ephemeris for 1869.

The clock used in observing was that of Charles Frodsham, and occasionally the Kessels clock.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Column 1 contains the date and initial letter of the observer's name, the day commencing at apparent noon.

Column 2 contains the name of the object, or its approximate declination.

The following system of nomenclature was adopted. Stars contained in the Catalogue of the British Association are designated in the order of precedence:

1. By the constellation and Bayer letter there given.
2. By the constellation and Flamsteed number there given.
3. By their number in the catalogue.

Other stars found in published catalogues are designated by the name and number in the catalogue.

Column 3 contains the number for reference.

The following abbreviations occur:

O. Arg. N.—Oeltzen's Catalogue from Argelander's Northern Zones.

O. Arg. S.—Oeltzen's Catalogue from Argelander's Southern Zones.

Weisse (2) for Weisse's Catalogue from Bessel's Zones, from 15 to 25 degrees of north declination.

Some anonymous stars, used in the comparisons of the equatorial, are denominated by a number, followed by the letter W.

Columns 4 to 14, inclusive, contain the seconds and tenths of the transits over the several threads, as noted by the observer at the time, or as subsequently read from the chronographic record; but as there are twenty-one threads, over each of which observations were taken at different times, the numbers over the columns may not represent the thread at which a star was observed, and this can only become known by comparing the observation with the equatorial intervals.

Column 15 contains the minutes, seconds, and decimals of a second obtained by taking the mean of the preceding times of transits over the threads observed.

Column 16 contains the sum of the corrections necessary to reduce the numbers of the preceding column to the clock-time at which the object crossed the great circle passing through the pole, and the point in which the line of collimation intersects the equator. It consists of two parts:

1. For broken observations of stars, from the mean of the threads B_1, B_2, B_3, C_1, C_2, C_3, C_4, C_5, D_1, D_2, D_3, by the formula,

$$R = \text{equatorial interval} \times \sec \delta$$

or, if the star was so near the pole that the difference between the sine and arc of the reduction was sensible,

$$\sin R = \sin \text{equatorial interval} \times \sec \delta$$

In case of the moon, the reduction was computed by Professor Airy's formula, published in the Greenwich Observations—

$$\frac{3600 + I}{3600} \times \frac{\sin ☽\text{'s Geo. Z. D.}}{\sin ☽\text{'s App. Z. D.}} \sec ☽\text{'s Geo. Z. D.}$$

in which I represents, in seconds of time, the moon's increase of right ascension in one hour of longitude, as given in the Nautical Almanac.

2. The correction for collimation and polar azimuth computed by the formula,

$$\text{Correction} = n \tan \delta + c \sec \delta$$

of which the method of obtaining the factors n and c has already been stated.

Column 17 contains the correction for clock-errors, obtained as stated, and brought forward to the instant of observation by the rate.

Column 18 contains the apparent right ascension of the object observed, obtained from the sum of the three columns immediately preceding.

Column 19 contains the corrections applicable to the preceding column to reduce the observations of the stars to their mean places, 1870.0, or the instant when the sun's mean longitude was 280°. These were computed from "Constants for the reduction of fixed stars," given in this volume, and in the preparation of which the coefficients are the same as those used in the American Ephemeris and Nautical Almanac. The corrections include no proper motions except those used in the list of time and azimuth stars.

There will be found at the foot of the page the adopted clock and instrumental corrections, observations of the reflected image of the middle thread, position of the clamp E. or W., and such notes as the observations called for. The several observations of each fixed star reduced to its mean place for 1870.0 are collected in pages 249–291.

As a general rule, the results for the fundamental stars are not given when there were less than four observations in the group used for determining clock-errors.

The magnitude of each star, when estimated by the observer at the time of observation, is given in the tables.

The observations of the year with this instrument were made by Professors Yarnall and Eastman, and Messrs. Frisby and Bardwell, assistant observers. The observations were reduced by Professor Yarnall, and copied by Mr. Thomas Harrison, the clerk of the Observatory. The list of mean places was made out by Mr. Frisby, and the observations were checked by Professor Beecher.

THE MURAL CIRCLE.

During the year 1869 the Mural Circle was employed in observing stars whose right ascensions had been previously determined by the Transit Instrument, and for a portion of the year the moon and larger planets were also observed.

MICROMETER AND TRANSIT THREADS.

The diaphragm inserted in October, 1864, was in use throughout 1869. The intervals of the threads were as follows:

Thread . .	I.	II.	III.	IV.	1.	2.	3.	4.	5.	VI.	VII.	VIII.	IX.
	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
Interval .	+ 53.6	+ 40.6	+ 28.8	+ 15.7	+3.3	+1.6	0.0	−1.7	−3.5	− 16.3	− 28.8	− 40.8	− 52.9

The value of the micrometer-screw used was determined from the following observations made in 1870; the readings being for intervals of five minutes of arc:

	r.	r.	r.
March 22,	21.7081	31.3027	40.8596
April 18,	20.3742	29.9793	39.5384
May 4,	20.4879	30.0818	39.6453
May 6,	20.4637	30.0667	39.6156

These observations being reduced, give the value of r at 30 revolutions $r = 31''.316$.

From this value tables were made in which the variable value from the nadir to each extreme reading was considered as uniform and allowed for as such.

The following notes, bearing on the adjustment, &c., of the instrument, have been extracted from the observing-books:

March 18. Adjusted the inclination.
March 19. Re-adjusted micrometers C and D.
March 22. Found that the eye-piece had received a very hard blow.
March 27. Level found correct; adjusted collimation.
May 12. Adjusted microscopes to read alike.
June 12. Night's work rejected.

THE NADIR POINT.

For determination of the nadir point a cap is provided which fits loosely over any of the eye-pieces of the telescope. Just above the eye-lens the cap has a plate of thin glass inclined at an angle of 45°. This arrangement has the advantage of enabling the observer to collimate without removing the eye-piece used in observation, and thereby avoids the risk of injury to the threads, and prevents the frequent admission of dust by air-currents, &c.

The mode of observation is as follows: The circle telescope is so pointed that when the nadir divisions of the former are accurately under the zeros of the microscopes, the images of the horizontal threads in the field of the latter may be seen at a small distance from the threads themselves. The circle microscopes are read then or at the conclusion of the reflection measures.

The micrometer reading for the true nadir being that which corresponds to the coincidence of each thread seen directly, with the image of the other seen by reflection, the images were alternately made to measure, on each side of the threads, spaces equal to their distance apart. As the nadir point thus determined always depends upon the same set of divisions of the circle, and is made with the same part of the micrometer-screw, it is uniformly affected with the errors of those divisions and by an inaccuracy peculiar to that portion of the screw.

METHOD OF OBSERVING.

The method of observing was the same as in previous years, and consisted essentially in transferring the subdivision of the circle from the microscopes to the micrometer eye-piece. The circle was set so that the divisions nearest to the reading for the given declination were as accurately as possible under the zero of the microscopes. The circle microscopes were read either before or after the observation.

The observations of Mr. Doolittle were made by bisecting the objects with the southern horizontal thread, while Mr. Frisby and Mr. Bardwell observed them at an equal distance from each of the horizontal threads. For bisection observations the nadir reading was corrected by the quantity $-0^{r}.120$, the estimated half distance of the horizontal threads, made from a great number of observations.

EXPLANATION OF THE PRINTED OBSERVATIONS.

Columns 1 to 3 and 7 to 12 need no explanation beyond that given in former years. The magnitudes in column 4 are those estimated by the observer at the time of observation.

Columns 5 and 6 show the number of micrometer readings, generally three for each star, and the transit threads over which these readings were made. When the number of micrometer readings does not correspond to the number of threads included between the limits given in column 6, it is understood that the observations were made at equal intervals between those limits.

Column 13 contains the mean of the six microscope readings.

Column 14 contains the mean of the observed micrometer readings.

Column 15 contains the adopted "nadir correction," expressed in micrometer revolutions. It is formed by subtracting the excess of the micrometer reading above 30 revolutions from the excess of the mean circle reading above 100°, the reading of microscope A when the telescope pointed to the nadir, that excess being first expressed in micrometer revolutions.

Column 16 gives the corrected meridian micrometer reading formed by applying the following corrections to column 14:

1. The nadir correction.
2. The reduction to the meridian. For observations made on any of the vertical wires, the reduction is given by the formula,

$$\Delta\, m = -\frac{\sin^2 \frac{1}{2}\, h}{2\, r \sin 1''} \tan \delta$$

h being the equatorial interval in arc of the vertical wire, and r the value of one revolution of the micrometer. Expressing h in seconds of time, and putting for r its value, already given, this expression becomes

$$\Delta\, m = -\, [5.2405]\, h^2 \tan \delta$$

the value of which, for different wires, is tabulated on pages xxxii and xxxiii of the Introduction to the Washington Observations for 1863.

For stars near the pole, the time having been recorded, this expression becomes

$$\Delta\, m = -\frac{225 \sin 1''}{4\, r}\,(t - a)^2 \sin 2\,\delta$$

t being the true sidereal time of observations and a the right ascension of the star.

3. The correction of unsymmetrical observations of the sun, moon, and planets, on account of motion in declination. In the case of the moon the correction was computed by the formula,

$$\Delta\, m = [4.943]\; hs \sec \delta\, \Delta\, \delta;$$

hs being the equatorial interval in seconds of time of the vertical wire at which the observation is made, and $\Delta\delta$ the change of declination in seconds of arc for one hour of terrestrial longitude.

4. The correction of unsymmetrical observations for inclination of the micrometer-threads to the horizon. This was,

Jan. 1 to Mar. 19	. . .	$i = -0.17h$
Mar. 27 to July 6	. . .	$i = +0.30h$
July 6 to Dec. 31	. . .	$i = +0.41h$

i denoting the correction for inclination in thousandths of a micrometer revolution, and h the equatorial interval in seconds of time.

Columns 18, 19, and 20 contain the reading of the Newman barometer, its attached thermometer, and the external thermometer. The external thermometer is designated No. 3 in the Appendix to the Washington Observations for 1845, page 54. It is placed outside of the north aperture, several inches beyond the wall, and is read by the help of a sextant telescope attached to the window frame.

Column 21, entitled "Instrumental corrections," contains the micrometer equivalent, or the difference between the corrected micrometer reading and 30 revolutions converted into arc. If the former quantity is denoted by m, the values in this column will be given by the formula,

$$\text{Corr.} = (30 \text{ rev.} - m)\, r$$

Column 22 contains the apparent zenith distance, equal to the sum of columns 13 and 21, diminished by 90° if the sum be greater than 90°, or substracted from 90° if less. In the former case the result is marked S, as south; in the latter N, as north.

Column 23 contains the correction for refraction corresponding to the apparent zenith distance and the barometer and thermometer readings. This quantity is computed from Bessel's tables, as given in an expanded form in the Appendix to the Washington Observations for 1845. This correction, added to the apparent zenith distance, gives the corrected geocentric zenth distance, which is not printed.

The following corrections are applied to the thermometer readings for irregularities in the bore of the tube:

CORRECTIONS OF THERMOMETER.

Ther. scale.	Corr.	Δ log. ref.	Ther. scale.	Corr.	Δ log. ref.
°	°		°		
30	−0.04	+.00004	66	+0.20	−.00016
32	− .06	+ 5	68	+ .25	− 21
34	− .11	+ 10	70	+ .22	− 18
36	− .08	+ 7	72	+ .12	− 10
38	− .05	+ 4	74	+ .03	− 3
40	− .02	+ 2	76	− .01	+ 1
42	− .01	+ 1	78	− .04	+ 3
44	.00	0	80	− .04	+ 3
46	− .01	+ 1	82	− .01	+ 1
48	− .03	+ 3	84	.00	0
50	− .04	+ 3	86	− .06	+ 5
52	− .03	+ 3	88	− .12	+ 10
54	− .01	+ 1	90	− .14	+ 11
56	− .01	+ 1	92	− .14	+ 11
58	− .03	+ 3	94	− .14	+ 11
60	00	0	96	− .13	+ 11
62	+ .05	− 4	98	− .12	+ 10
64	+0.12	−.00010	100	−0.12	+.00010

2. The correction for parallax for observations of the sun, moon, and planets, computed for the first and last, by the formula,

$$p = \pi . \sin (z' - 11'.2)$$

For the moon:

$$\sin p' = \sin \pi . \sin (z' - 11'\ 14''.54) . [9.9994302,]$$

or

$$p' = \pi . \sin (z' - 11'\ 14''.54) . [9.9994302] \cdot \frac{\sin \pi}{\text{arc } \pi} \cdot \frac{\text{arc } p'}{\sin p'}$$

$$\text{and } p = p' \mp \tfrac{1}{2} (p \mp s) \sin p \sin s$$

the upper signs corresponding to observations of the upper limb, and *vice versa*. The quantities $\frac{\sin \pi}{\text{arc } \pi}$ and $\frac{\text{arc } p}{\sin p}$ are given in Tables IX and X, and the correction of p' in the last formula is given in Table XI of the Appendix to the Washington Observations for 1845.

In these formulas

z' represents the observed zenith distance, corrected for refraction.

π, the equatorial horizontal parallax, as given in the American Ephemeris.

s, the semi-diameter of the object.

p, the required correction for parallax.

3. In cases when only one limb of an object is observed, the correction for semi-diameter is included under this head. This correction is in all cases taken from the American Ephemeris.

Column 24 contains the declination of the star, using the assumed north latitude, 38° 53′ 39″.25.

Column 25 contains the reduction from the apparent declination at date to the mean declination for 1870.0.

It was computed by Bessel's formulæ, with constants prepared from the logarithms A, B, C, and D of the American Ephemeris and Nautical Almanac; and, in addition to the terms included in that work, it includes also those depending on twice the Moon's longitude. Corrections for proper motion have not been applied to any star.

Column 25 contains the initials of the observers' names:

D.—Mr. M. H. Doolittle.

F.—Mr. Edgar Frisby.

B.—Mr. F. W. Bardwell.

The observations were reduced by Professor Yarnall, and Mr. A. N. Skinner, assistant observer.

THE EQUATORIAL.

During the early part of the year 1869 this instrument was employed chiefly in observing stars in the group Præsepe. The results of these observations have been published in Appendix IV of the annual volume of the Naval Observatory for 1867. From May, 1869, until the latter part of October, the observer was absent in connection with the eclipse expeditions of that year.

The observations of Felicitas, (109), and the observed occultations of stars by the moon, will be found on pages 235 and 236. The observations of the planet were made in the same manner, and are printed in the same form as the Equatorial observations of 1868. Thus, $\Delta\alpha$ and $\Delta\delta$ are the observed differences of right ascension and declination; $\Delta\rho$ is the differential refraction; and α and δ are the apparent right ascensions and declinations uncorrected for parallax. Under the head $l.\ \Delta\ p$ are given the logarithms of the parallactic coefficients. The observations were made with the filar micrometer, and a magnifying power of 132 was employed. The value of one revolution of the micrometer-screw was assumed to be $15''.337$.

OBSERVATIONS

WITH THE

TRANSIT CIRCLE.

1869.

SUMMARY OF THE PRINCIPAL DATA FOR REDUCTION OF THE OBSERVATIONS MADE WITH THE TRANSIT CIRCLE DURING THE YEAR 1869.

Approximate distances of wires I to VII			$12\frac{1}{4}s.$
One revolution of the microscope micrometers			30″
One revolution of the telescope micrometer			$15.''320+0.''0068\ (r.-30r.)$
			′ ″
Correction for wire A	At vertical wire I		− 2 33.44
	At vertical wire VII		− 2 34.66
			′ ″
Correction for wire B	At vertical wire I		+ 2 30.90
	At vertical wire VII		+ 2 26.90
			″
Constant	Added to reduction to meridian	Subtracted from zenith point correction	1.80
			″
Corrections for inclination of wires	At vertical wire I		+ 1.00
	At vertical wire II		+ 0.66
	At vertical wire VI		− 0.66
	At vertical wire VII		− 1.00
			° ′ ″
Adopted latitude of the instrument			38 53 38.80
			s.
One division of hanging level			0.058
			″
One division of collimator levels			0.84

Position of the instrument. Clamp west.

Circle B, on the east end of the axis, was this year used in observation.

In reversing the instrument, the notation of the transit wires is also reversed, so that the wire which an equatorial star first reaches is always called wire I.

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Jan. 5	1	Polaris	N.	4	55.0	39.5	42.0	. .	. .	. .	56.0	1.0	45.0	10 19.50	+10.69	. .	+35.94	. . . . .	. .
	2	Polaris	N.	4	. .	. .	32.5	55.0	19.0	43.0	8.0	. .	. .						
	3	β Arietis, (E. & E.) .	N.	.	15.1	28.1	41.5	. .	54.2	. .	7.1	20.4	33.2	46 54.24	+ 0.06	+29.95	+35.95	. . . . .	. .
6	4	Sun I, N. . . .	N.	2	36.7	39.5	41.0	47.6	49.9	52.2	58.7	0.4	3.3	9 49.92	− 0.08	. .	+36.50	19 10 26.34	. .
	5	Sun II, N. . . .	N.	2	57.9	0.7	2.4	8.9	11.2	13.5	20.0	21.8	24.5	12 11.21	− 0.08	. .	+36.50	19 12 47.63	. .
	6	Polaris . .	N.	4to3	7.0	3.0	48.0	52.0	. .	. .	15.7	10.5	23.0	10 29.04	+10.69	. .	+36.39	1 11 16.12	+ 2.37
	7	Polaris . .	N.	4to3	. .	. .	39.5	5.0	29.0	53.0	19.0	. .	. .						
	8	Neptune, (E. & E.)	N.	4	. .	. .	. .	. .	. .	. .	. .	57.6	9.9	55 33.10	+ 0.01	. .	+36.39	0 56 9.50	. .
	9	o Piscium . . .	N.	4	14.8	27.1	39.6	. .	51.9	. .	4.2	16.8	29.1	37 51.93	+ 0.02	+36.41	+36.40	1 38 28.35	− 0.05
	10	α Arietis, . . .	N.	4	31.0	44.5	57.8	. .	11.0	. .	34.2	37.8	50.7	59 11.00	+ 0.08	+36.40	+36.40	1 59 47.48	+ 0.01
	11	ξ^1 Ceti	N.	4	49.9	2.2	14.5	. .	26.9	. .	39.3	51.6	4.0	5 26.91	+ 0.02	+36.40	+36.41	2 6 3.34	+ 0.04
	12	ι Cassiopeæ . . .	N.	3	9.6	40.9	11.6	. .	42.9	. .	14.0	44.9	16.2	17 42.87	+ 0.56	. .	+36.41	2 18 19.84	+ 0.42
	13	δ Ursæ Minoris, S. P.	N.	.	6.3	38.5	11.7	29.3	. .	. .	. .	. .	. .	13 45.47	− 4.53	. .	+36.47	18 14 17.41	− 0.51
	14	γ Geminorum . .	N.	3	54.5	. .	19.9	. .	32.8	. .	45.7	58.4	11.0	29 32.80	+ 0.05	+36.49	+36.48	6 30 9.33	− 0.01
	15	α Canis Majoris .	N.	3	. .	. .	34.0	. .	46.9	. .	59.8	12.5	25.2	38 46.92	− 0.06	+36.44	+36.48	6 39 23.34	− 0.03
	16	ε Canis Majoris .	N.	4	11.5	25.6	39.5	. .	53.4	. .	7.4	21.4	35.3	52 53.44	− 0.10	+36.50	+36.48	6 53 29.82	− 0.04
	17	Uranus, C. . .	N.	4	24.4	37.8	51.1	. .	4.3	. .	17.5	31.0	44.2	6 4.33	+ 0.08	. .	+36.48	7 6 40.89	. .
	18	δ Geminorum . .	N.	4	2.2	15.5	28.8	. .	42.0	. .	55.2	8.6	11.7	11 42.00	+ 0.08	+36.53	+36.48	7 12 18.56	− 0.02
	19	Venus II, S. . .	F.	3	11.4	14.2	15.7	22.5	24.5	26.6	33.4	35.0	37.7	6 24.56	− 0.14	. .	+36.40	17 7 0.82	− 0.44
	20	α Ophiuchi . . .	F.	3	0.6	2.1	4.7	11.1	13.0	15.1	21.5	23.0	25.5	28 12.96	− 0.02	+36.47	+36.40	17 28 49.34	− 0.06
	21	α Lyræ	F.	.	35.8	39.2	41.0	48.9	51.7	54.0	1.9	3.9	7.3	31 51.52	+ 0.10	+36.50	+36.41	18 32 28.03	− 0.09
7	22	Sun I	F.	.	. .	. .	7.8	10.0	12.1	14.5	16.6	. .	. .	14 12.19	− 0.14	. .	+36.41	19 14 48.46	. .
	23	Sun II	F.	.	20.5	23.1	24.7	31.4	33.5	35.9	42.4	44.3	47.0	16 33.64	− 0.14	. .	+36.41	19 17 9.91	. .
	24	Polaris . .	F.	.	. .	46.0	. .	. .	. .	7.0	50.0	21.0	51.0	10 25.56	+ 9.55	. .	+36.47	1 11 11.58	− 1.36
	25	Polaris . .	F.	.	. .	47.0	36.0	2.0	24.0	50.0	15.0	3.0	. .						
	26	α Arietis	F.	.	57.8	0.5	2.2	8.8	10.9	13.2	19.9	21.4	24.2	59 10.99	+ 0.02	+36.45	+36.48	1 59 47.49	+ 0.04
	27	α Orionis . . .	F.	.	16.8	19.2	20.8	26.9	29.0	31.0	37.3	38.9	41.4	47 29.03	− 0.03	+36.47	+36.52	5 48 5.52	+ 0.05
	28	22 Camelopardalis .	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .		. . . . .	. .
	29	δ Ursæ Min., S. P. .	F.	.	. .	12.0	28.5	2.5	. .	. .	. .	. .	. .	13 45.10	− 4.10	. .	+36.52	18 14 17.52	− 0.45
	30	51 Cephei	F.	.	. .	. .	26.0	10.0	50.5	33.5	15.5	. .	. .	37 50.94	+ 4.79	. .	+36.53	6 38 32.26	+ 0.09
	31	ε Canis Maj., (E.&E.)	F.	.	39.5	. .	. .	. .	. .	. .	58.1	. .	7.2	52 53.33	− 0.17	+36.69	+36.53	6 53 29.69	. .
	32	β Geminorum . .	F.	.	. .	. .	37.4	39.6	42.0	44.3	46.6	. .	. .	36 41.98	+ 0.04	+36.48	+36.54	7 37 18.56	+ 0.06
	33	λ Ursæ Min., S. P. .	F.	.	. .	. .	43.0	52.0	5.0	18.0	29.0	. .	. .	54 5.80	−12.52	. .	+36.54	7 54 29.82	− 0.19
8	34	Sun I, S. . . .	N.	2	. .	. .	20.8	. .	33.8	. .	47.2	. .	. .	18 33.93	− 0.02	. .	+36.82	19 19 10.73	. .
	35	Sun II, N. . . .	N.	2	. .	. .	. .	. .	. .	. .	8.1	21.4	34.9	20 55.07	− 0.02	. .	+36.82	19 21 31.87	. .
	36	ζ Cygni	N.	4	0.9	15.0	29.0	. .	43.1	. .	57.2	11.2	25.4	6 43.11	+ 0.08	+36.84	+36.84	21 7 20.03	− 0.01
12	37	δ Orionis	F.	3	29.2	31.8	33.5	39.6	41.6	43.7	49.7	51.3	53.8	24 41.58	+ 0.30	+37.63	+37.65	5 25 19.53	0.00
	38	α Orionis	F.	.	15.2	17.7	19.5	25.4	27.4	29.7	35.8	37.3	39.9	47 27.54	+ 0.29	+37.65	+37.66	5 48 5.49	+ 0.01
	39	22 Camelopardalis .	F.	.	. .	. .	37.0	42.9	48.7	54.5	0.4	. .	. .	3 48.70	+ 0.22	. .	+37.66	6 4 26.58	− 0.01
	40	δ Ursæ Min., S. P. .	F.	.	. .	. .	49.5	15.0	41.5	6.5	31.0	. .	. .	13 40.82	+ 0.14	. .	+37.66	18 14 18.62	+ 0.48
	41	γ Geminorum . .	F.	.	18.6	21.1	22.9	29.2	31.4	33.6	39.9	41.6	44.2	29 31.39	+ 0.28	+37.70	+37.67	6 30 9.34	− 0.03
	42	Uranus I, S. . .	F.	.	42.5	45.2	47.0	. .	. .	. .	4.5	6.3	9.2	4 55.78	+ 0.27	. .	+37.68	7 5 33.73	. .
	43	Uranus II, N. .	F.	.	. .	. .	51.7	54.0	56.0	58.3	0.5	. .	. .	4 56.10	+ 0.27	. .	+37.68	7 5 34.05	. .
	44	α^2 Geminorum . .	F.	.	. .	. .	32.4	34.6	37.2	39.5	42.0	. .	. .	25 37.13	+ 0.26	+37.60	+37.68	7 26 15.07	+ 0.28
	45	β Geminorum . .	F.	3	26.7	29.6	31.4	38.3	40.6	42.8	49.9	51.6	54.5	36 40.60	+ 0.26	+37.71	+37.68	7 37 18.54	− 0.03
	46	φ Geminorum . .	F.	.	37.7	40.4	42.2	49.1	51.3	53.7	0.6	2.2	5.2	44 51.38	+ 0.27	+37.72	+37.69	7 45 29.34	− 0.07
	47	λ Ursæ Min., S. P. .	F.	.	35.0	18.0	1.0	24.0	. .	. .	. .	. .	. .	53 47.75	− 0.04	. .	+37.69	19 54 25.40	− 2.44
	48	ε Ursæ Minoris .	N.	4	. .	. .	. .	27.5	42.3	57.2	12.7	. .	. .	58 42.30	+ 0.62	. .	+38.14	16 59 21.07	− 0.39
	49	α Herculis . . .	N.	4	. .	. .	. .	47.9	0.5	13.1	25.8	38.4	. .	8 0.48	+ 0.24	+38.10	+38.14	17 8 38.86	+ 0.04

1. After this observation adjusted azimuth.
3.8–12.14–18.34–36.49. R. A. observed over wires I–VII.
4. After this observation lessened the reading of microscopes VII and VIII 2″ or 3″ each.
6. Last reading at vertical wire VI.
24. R. A. observed over wires B_2, D_2–VII.
31. R. A. observed over wires B_1, C_5, and D_3.
34. Hazy; limb faint but quite steady.
39. Bisections at sets B and D.
47. R. A. observed over C_1 and B.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1																	
2																	
3																	
4	60 58	24.1	22.0	27.2	27.0	25	342	350	. .	. .	. .	56.2	61 1 42.3	640	+ 1 46.7	112 9 50.2	− 7.8
5	61 30	28.6	29.0	2.2	3.0	27	. .	. .	. .	002	128	56.2	61 34 12.9	. .	+ 1 49.1	112 42 23.2	− 7.9
6																	
7																	
8																	
9	30 20	9 29.4	29.0	4.5	0.4	23	. .	. .	535	. .	. .	56.2	30 23 19.9	682	+ 35.1	81 30 16.2	+ 0.5
10	16 0	9 27.8	26.4	2.2	28.2	21	872	. .	. .	. .	981	56.2	16 2 53.5	. .	+ 17.2	67 9 31.9	+ 0.7
11	30 36	29.8	29.5	4.7	1.3	23	. .	. .	445	. .	. .	56.2	30 39 19.0	. .	+ 35.5	81 46 15.7	+ 0.2
12	332 2	7.3	6.5	10.1	7.8	22	940	025	. .	142	115	56.2	332 5 20.9	689	− 31.7	23 11 10.4	− 0.3
13																	
14	22 20	9 27.4	26.6	2.3	28.7	21	720	. .	. .	. .	882	56.2	22 22 51.6	718	+ 24.8	73 29 37.6	− 0.4
15	55 22	3.5	4.0	9.0	5.9	20	. .	. .	659	. .	. .	56.2	55 24 40.8	. .	+ 1 27.4	106 32 29.4	+ 2.2
16	67 36	1.3	1.7	7.7	4.2	22	. .	. .	492	. .	. .	56.2	67 39 6.9	720	+ 2 26.0	118 47 54.1	− 0.3
17	15 50	4.9	3.2	8.4	5.1	22	190	. .	264	. .	345	56.2	15 53 5.3	. .	+ 17.2	66 59 43.7	− 0.1
18	16 36	5.1	3.7	8.5	5.2	26	. .	. .	774	. .	. .	56.2	16 40 14.2	720	+ 18.1	67 46 53.5	0.0
19	60 32	5.5	7.6	11.5	8.8	29	142	119	. .	225	249	56.3	60 36 53.7	708	+ 1 46.6	111 45 1.5	− 5.6
20	26 10	29.8	29.2	3.5	0.7	24	782	752	. .	809	818	56.3	26 13 59.3	694	+ 29.6	77 20 30.1	+ 2.1
21	0 10	0.1	29.6	3.9	1.1	25	262	293	. .	422	451	56.3	0 13 48.7	652	+ 0.2	51 20 10.1	+ 1.4
22																	
23																	
24, 25	310 14	11 9.9	11.2	13.5	9.3	30	890	824	884	992	994	56.1	310 18 53.1	. .	− 1 9.3	1 23 5.0	− 1.3
26	16 0	9 7.4	4.0	8.4	5.9	23	. .	351	. .	450	. .	56.1	16 2 53.5	618	+ 17.0	67 9 31.7	+ 0.4
27	31 28	1.0	29.5	4.1	0.2	19	790	825	. .	. .	930	56.1	31 30 24.2	654	+ 36.4	22 37 21.8	+ 0.5
28	329 30	4.5	4.4	6.5	4.5	20	. .	. .	. .	890	886	56.1	329 32 44.2	. .	− 35.0	20 38 30.4	+ 6.0
29	305 26	3.4	3.2	5.8	2.7	31	580	535	522	. .	. .	56.1	305 31 25.3	. .	− 1 23.1	356 36 23.4	+ 2.1
30	311 36	29.1	29.0	1.0	28.2	27	875	820	843	839	840	56.1	311 40 24.3	660	− 1 6.8	2 45 38.7	+ 0.5
31																	
32	10 30	26.1	26.1	29.5	25.0	23	. .	. .	. .	370	432	56.1	10 33 12.6	672	+ 11.1	61 39 44.9	+ 0.5
33	307 46	4.5	4.0	7.8	3.4	25	850	930	815	880	906	56.1	307 49 59.5	674	− 1 16.8	358 55 3.9	+ 0.3
34	61 14	9 29.6	29.9	7.7	2.1	27	. .	. .	800	. .	. .	56.1	61 18 26.6	. .	+ 1 47.1	112 26 34.9	− 7.9
35	60 42	9 2.1	3.6	8.8	4.9	27	. .	. .	. .	. .	841	56.1	60 45 58.5	. .	+ 1 44.7	111 54 4.4	− 7.8
36	9 8	5.0	3.7	9.4	4.5	25	678	. .	769	. .	818	56.1	9 11 58.9	590	+ 9.5	60 18 29.6	− 1.2
37	39 12	10 16.9	16.5	20.1	15.8	28	685	720	. .	760	775	56.5	39 16 56.3	745	+ 49.7	90 24 7.2	+ 0.6
38	31 28	6.6	6.1	9.5	4.7	19	. .	460	. .	488	. .	56.5	31 30 24.2	750	+ 37.3	82 37 22.7	+ 1.0
39	329 28	8.0	5.3	5.4	2.3	28	390	408	. .	394	384	56.5	329 32 39.1	. .	− 35.7	20 38 24.6	+ 1.5
40	305 28	6.0	6.5	8.7	4.1	23	446	388	400	410	448	56.5	305 31 23.9	. .	− 1 25.0	356 36 20.1	+ 0.3
41	22 20	9.7	9.7	9.4	8.3	20	972	012	. .	118	132	56.5	22 22 51.0	750	+ 25.0	73 29 37.2	− 1.0
42	15 48	6.0	4.3	8.6	3.6	23	138	. .	. .	. .	200	56.5	15 51 19.7	754	+ 17.3	66 57 58.2	− 0.1
43	15 48	6.0	4.3	8.6	3.6	22	. .	868	. .	890	. .	56.5	15 51 15.1	. .	+ 17.3	66 57 53.6	− 0.1
44	6 40	6.7	5.7	10.2	4.9	22	. .	930	. .	936	. .	56.5	6 43 17.6	. .	+ 7.2	57 49 46.0	+ 0.5
45																	
46	11 44	10.2	8.8	13.5	8.1	23	249	272	. .	332	367	56.5	11 47 26.3	756	+ 12.7	62 54 0.2	− 1.0
47	307 46	4.5	6.3	7.8	3.7	26	102	959	920	888	. .	56.5	307 50 0.0	762	− 1 18.4	358 55 2.8	+ 0.6
48	316 36	5.5	7.2	9.6	5.7	24	. .	. .	930	. .	. .	56.1	316 39 47.3	787	− 57.9	7 45 10.6	+ 0.4
49	24 16	1.1	2.1	7.8	1.8	28	. .	. .	533	. .	. .	56.1	24 20 38.6	. .	+ 27.8	75 27 27.6	+ 0.5

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
36	30.167	49.5	74.5
48	30.456	31.4	72.4

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Jan. 12	1	α Ophiuchi	N.	4	. .	33.4	46.2	58.7	11.2	23.8	36.3	49.0	. .	28 11.23	+ 0.24	+38.06	+38.15	17 28 49.62	+ 0.10
	2	δ Ursæ Minoris	N.	4	45.0	10.7	54.0	20.2	. .	56.5	22.7	5.5	. .	13 38.72	+ 1.53	. .	+38.14	18 14 18.39	+ 0.23
	3		N.	4	. .	. .	30.5	4.3	39.0	14.0	48.5	. .	. .						
	4	α Lyræ	N.	3	2.0	18.5	34.0	. .	49.8	. .	5.5	21.1	36.9	31 49.83	+ 0.26	+38.11	+38.16	18 32 28.25	+ 0.05
13	5	Sun I, S.	N.	1	. .	47.8	1.0	. .	14.4	. .	27.3	. .	. .	40 14.15	+ 0.25	. .	+38.18	19 40 52.58	. .
	6	Sun II, N.	N.	1	. .	. .	21.2	. .	34.6	. .	47.7	1.0	14.0	42 34.54	+ 0.25	. .	+38.18	19 43 12.97	. .
	7	β Aquarii	N.	3	22.5	34.8	47.2	. .	59.5	. .	11.8	. .	36.4	23 59.47	+ 0.24	+38.18	+38.20	21 24 37.91	+ 0.02
	8	ε Pegasi	N.	3	27.9	40.2	52.6	. .	5.1	. .	17.4	29.8	42.1	37 5.01	+ 0.24	+38.26	+38.21	21 37 43.46	− 0.07
	9	Neptune	N.	3	8.0	20.1	32.6	. .	44.9	. .	57.1	9.4	21.7	55 44.83	+ 0.24	. .	+38.26	. . . .	. .
	10	Polaris	N.	4	. .	33.7	0.0	47.5	. .	8.5	54.0	20.5	49.7	10 27.99	+ 3.46	. .	+38.26	1 11 9.71	+ 1.99
	11		N.	4	. .	53.0	40.0	3.0	27.7	51.7	16.0	4.7	. .						
	12	δ Ursæ Minoris, S.P.	N.	4	. .	. .	49.7	15.0	41.7	7.5	. .	. .	. .	13 41.38	− 1.24	. .	+38.33	18 14 18.47	+ 0.27
	13	γ Geminorum	N.	3	52.5	5.3	17.8	. .	30.8	. .	43.6	. .	9.1	29 30.75	+ 0.24	+38.38	+38.34	6 30 9.33	− 0.04
	14	α Canis Majoris	N.	3	6.2	19.2	32.0	. .	44.7	. .	57.5	10.2	23.0	38 44.69	+ 0.24	+38.39	+38.34	6 39 23.27	− 0.12
	15	ε Canis Majoris	N.	3	9.2	23.3	37.3	. .	51.2	. .	5.1	19.0	33.1	52 51.17	+ 0.26	+38.44	+38.35	6 53 29.78	− 0.11
	16	Uranus	N.	3	4.2	17.8	31.0	. .	44.4	. .	57.6	11.0	24.2	4 44.31	+ 0.24	. .	+38.35	7 5 22.90	. .
	17	τ Draconis, S. P.	N.	3	3.0	49.0	35.1	. .	21.2	. .	7.6	53.2	38.9	17 21.16	− 0.15	. .	+38.35	19 21 59.36	− 0.10
	18	α Canis Minoris	N.	4	12.0	24.2	36.5	. .	48.9	. .	1.1	13.4	25.8	31 48.84	+ 0.24	+38.31	+38.36	7 32 27.44	− 0.01
	19	β Geminorum	N.	4	. .	12.2	26.0	. .	40.0	. .	54.0	7.9	21.8	36 40.03	+ 0.24	+38.32	+38.36	7 37 18.63	+ 0.04
15	20	α Lyræ	F.	.	33.7	36.9	39.0	46.8	49.3	51.9	59.7	1.7	5.1	31 49.34	+ 0.22	+38.69	+38.76	18 32 28.32	+ 0.07
16	21	Sun I, S.	F.	.	54.3	57.0	58.7	5.2	7.5	9.7	16.2	18.0	20.3	53 7.43	+ 0.11	. .	+38.77	19 53 46.31	. .
	22	Sun II.	F.	.	. .	. .	. .	. .	. .	31.6	36.1	37.9	40.5	55 27.40	+ 0.11	. .	+38.77	19 56 6.28	. .
	23	Polaris	F.	.	41.0	30.0	54.0	21.0	42.0	5.0	53.0	58.0	44.0	10 17.82	+ 4.70	. .	+38.82	1 11 1.34	− 3.32
	24	η Piscium	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	25	o Piscium	F.	.	37.0	39.5	41.0	47.2	49.3	51.4	57.6	59.3	1.8	37 49.34	+ 0.15	+38.74	+38.83	1 38 28.32	+ 0.05
	26	β Tauri	F.	.	8.3	11.1	12.9	20.0	22.2	24.4	31.5	33.4	36.2	17 22.22	+ 0.19	+38.96	+38.86	5 18 1.27	− 0.11
	27	δ Orionis	F.	.	28.3	30.6	32.4	38.4	40.4	42.6	48.4	50.3	52.8	24 40.47	+ 0.13	+38.89	+38.86	5 25 19.46	− 0.05
	28	α Columbæ	F.	.	1.6	4.9	6.6	13.9	16.4	18.9	26.5	28.1	31.1	34 16.44	+ 0.09	+38.84	+38.87	5 34 55.40	− 0.03
	29	α Orionis	F.	.	14.0	16.7	18.3	24.4	26.5	28.5	34.6	36.3	38.8	47 26.46	+ 0.14	+38.87	+38.87	5 48 5.47	0.00
	30	22 Camelopardalis	F.	.	. .	. .	. .	41.7	47.3	53.3	59.3	. .	. .	3 47.50	+ 0.49	. .	+38.87	6 4 26.86	+ 0.29
	31	δ Ursæ Min., S. P.	F.	.	7.0	24.0	59.5	. .	. .	. .	24.5	57.5	8.0	13 41.68	− 2.66	. .	+38.87	18 14 17.89	− 0.61
	32		F.	.	. .	. .	50.5	14.0	43.5	7.0	33.0	. .	. .						
	33	γ Geminorum	F.	.	16.7	19.3	20.8	25.2	27.3	29.2	. .	. .	. .	29 29.37	+ 0.16	+39.86	+39.87	6 30 9.40	+ 0.01
	34	ε Canis Majoris	F.	.	37.0	39.8	41.4	48.7	50.9	53.0	0.2	1.9	4.9	52 50.87	+ 0.10	+38.90	+38.88	6 53 29.85	− 0.04
	35	Uranus I, S.	F.	.	57.5	0.2	1.9	. .	. .	. .	19.7	21.2	24.3	5 10.80	+ 0.17	. .	+38.88	7 5 49.85	. .
	36	Uranus II, N.	F.	.	. .	. .	6.8	9.0	11.2	13.3	15.6	. .	. .	5 11.18	+ 0.17	. .	+38.88	7 5 50.23	. .
	37	λ Ursæ Minoris, S.P.	F.	.	. .	. .	. .	44.0	57.0	8.0	19.0	. .	. .	53 56.00	− 8.35	. .	+38.89	19 54 26.54	− 0.21
	38	15 Argus	F.	.	. .	. .	. .	20.2	22.4	24.4	29.0	30.9	33.5	1 20.13	+ 0.10	+38.88	+38.89	8 1 59.12	− 0.01
	39	I Præsepe	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	40	L Præsepe	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	41	ρ Leonis	F.	.	3.6	6.2	7.7	14.1	15.9	18.0	24.4	26.0	28.6	25 16.06	+ 0.15	+38.93	+38.91	10 25 55.12	− 0.06
	42	Mars, S.	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
19	43	Polaris	F.	.	. .	. .	. .	. .	. .	. .	. .	42.0	10.0	10 16.25	+ 4.14	. .	+39.32	1 10 58.71	− 3.15
	44	Moon I, S.	F.	.	47.6	50.2	51.8	58.1	0.1	2.3	8.4	10.0	12.5	11 10.11	+ 0.07	. .	+39.32	1 11 39.50	+ 1.86
	45	γ Ceti	F.	3	38.9	41.5	42.9	49.3	51.3	53.4	59.4	1.0	3.5	35 51.24	+ 0.07	+39.35	+39.33	2 36 30.64	− 0.02
	46	α Ceti	F.	3	34.4	36.9	38.4	44.5	46.6	48.6	54.7	56.2	58.8	54 46.57	+ 0.08	+39.27	+39.33	2 55 25.98	+ 0.08
	47	ζ Arietis	F.	3	30.0	32.7	34.2	40.9	43.0	45.3	51.8	53.6	56.2	6 43.08	+ 0.10	+39.35	+39.33	3 7 22.51	− 0.05
	48	51 Cephei	F.	.	. .	. .	. .	. .	49.0	34.0	15.0	. .	. .	37 50.27	+ 2.12	. .	+39.36	6 38 31.75	− 0.06
	49	ε Canis Majoris	F.	.	36.7	39.5	41.2	48.3	50.4	52.8	59.7	1.6	4.5	52 50.52	+ 0.03	+39.32	+39.36	6 53 29.91	+ 0.04

1.4–9.13–16.18.19. R. A. observed over wires I–VII.
2. R. A. observed over wires II, B, and D.
21. Wire B used.
23. R. A. observed over wire B_3 and sets C and D.
30. Bisections at set D.
33. Counting clock supposed to be 1^s wrong.
39.40. Five revolutions subtracted from reading of telescope micrometer.
43. R. A. observed over wires D_3 and VI. Bisection at wire VI.
44. Circle reading changed from 2° 4′ to 1° 56′, the 4′ being probably read the wrong way.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	26 10	29.3	0.4	5.2	0.0	24	713	751	. .	851	887	56.1	26 13 39.7	782	+ 30.2	77 20 31.1	+ 0.8
2 3	312 14	2.3	3.1	5.9	1.6	27	665	655	631	708	685	56.1	312 18 25.5	768	− 1 7.0	3 23 39.7	+ 0.8
4	0 10	6.9	6.2	11.1	6.7	24	961	016	. .	062	086	56.1	0 13 50.0	. .	+ 0.2	51 20 11.4	+ 0.8
5	60 28	3.2	4.6	9.5	4.9	22	. .	949	. .	. .	. .	56.1	60 31 16.3	. .	+ 1 46.2	111 39 23.7	− 7.8
6	59 56	0.9	2.4	6.7	2.1	21	. .	. .	. .	154	249	56.1	59 58 45.6	710	+ 1 44.0	111 6 50.8	− 7.8
7	44 58	1.3	1.5	6.6	2.0	23	. .	. .	. .	922	. .	56.1	45 1 27.1	716	+ 1 0.3	96 8 48.6	+ 0.5
8	29 32	2.0	3.3	7.3	2.9	27	990	. .	. .	. .	133	56.1	29 36 32.2	. .	+ 34.3	80 43 27.7	− 0.2
9	34 32	2.9	2.8	6.8	2.1	28	. .	142	. .	220	. .	56.1	34 36 33.7	732	+ 41.8	85 43 36.7	− 0.2
10 11	310 14	29.8	0.4	2.2	28.8	25	954	010	992	015	980	56.1	310 17 57.0	. .	− 1 11.4	1 23 6.8	+ 0.9
12	305 28	3.0	2.8	7.0	2.9	23	640	635	640	640	. .	56.1	305 31 24.5	770	− 1 25.5	356 36 20.2	+ 0.9
13	22 20	3.5	3.0	7.5	3.2	21	405	417	. .	485	496	56.1	22 22 51.6	. .	+ 25.1	73 29 37.9	− 0.3
14	55 22	3.0	2.3	6.2	3.0	20	784	850	. .	912	965	56.1	55 24 41.9	765	+ 1 28.3	106 32 31.4	+ 2.6
15	67 36	2.1	3.2	7.9	4.0	22	392	388	. .	425	470	56.1	67 39 6.0	. .	+ 2 27.4	118 47 54.6	− 1.7
16	15 48	4.4	2.9	7.6	3.6	21	875	. .	. .	. .	040	56.1	15 50 59.8	763	+ 17.4	66 57 38.4	− 0.1
17	291 58	3.4	3.9	6.2	3.2	29	. .	. .	310	. .	. .	56.1	292 2 51.5	. .	− 2 29.7	343 6 43.0	− 1.4
18	33 16	6.2	4.8	9.1	5.0	24	251	. .	. .	. .	392	56.1	33 19 37.4	. .	+ 40.1	84 26 38.7	+ 0.6
19	10 30	5.6	4.4	8.5	4.7	22	. .	. .	720	. .	. .	56.1	10 33 12.3	767	+ 11.4	61 39 44.9	+ 0.7
20	0 10	8 7.9	5.2	11.1	2.7	28	968	001	. .	108	114	55.9	0 13 50.3	692	+ 0.2	51 20 11.7	+ 0.1
21	59 52	10 8.2	9.0	12.5	8.5	28	030	995	. .	. .	. .	55.9	59 59 6.9	680	+ 1 43.3	111 7 11.4	− 7.8
22																	
23																	
24	24 10	1.9	1.4	6.3	2.4	22	452	466	. .	286	297	55.9	24 13 4.2	. .	+ 26.7	75 19 52.1	− 1.7
25	30 20	4.4	4.5	8.4	5.0	23	225	290	. .	185	140	55.9	30 23 19.5	698	+ 35.2	81 30 15.9	− 0.5
26	10 20	0.2	29.1	3.1	29.5	25	. .	. .	. .	887	863	55.9	10 23 54.5	762	+ 11.2	61 30 26.9	+ 1.2
27	39 12	8.5	6.2	10.3	7.8	29	. .	. .	. .	450	414	55.9	39 16 56.4	. .	+ 49.9	90 24 7.5	+ 0.5
28	72 56	4.7	4.8	8.8	5.4	23	. .	. .	. .	. .	448	55.9	72 59 21.9	. .	+ 3 17.1	124 9 0.2	+ 1.3
29	31 28	3.9	3.0	7.2	3.7	19	. .	. .	. .	646	678	55.9	31 30 23.4	768	+ 37.4	82 37 22.0	0.0
30	329 28	5.9	5.3	6.9	4.2	28	. .	. .	. .	295	330	55.9	329 32 37.3	768	− 35.9	20 38 22.6	+ 0.6
31 32	305 28	4.5	3.2	7.6	3.1	23	508	508	518	652	686	55.9	305 31 23.9	. .	− 1 25.2	356 36 19.9	+ 1.7
33	22 20	8.5	6.5	11.5	7.5	21	. .	055	. .	246	. .	55.9	22 22 51.0	. .	+ 25.1	73 29 37.3	− 0.9
34	67 34	5.8	6.5	9.6	8.1	30	. .	. .	. .	122	130	56.0	67 39 6.1	. .	+ 2 27.6	118 47 54.9	− 2.3
35	15 46	5.8	4.8	8.9	5.4	26	. .	. .	. .	468	. .	56.0	15 50 9.4	. .	+ 17.3	66 56 47.9	− 0.1
36	15 46	5.8	4.8	8.9	5.4	26	. .	. .	. .	. .	220	56.0	15 50 5.5	. .	+ 17.3	66 56 44.0	− 0.1
37	307 46	5.0	3.9	5.3	3.0	25	. .	832	818	830	890	56.0	307 49 58.3	. .	− 1 18.5	358 55 1.0	+ 0.3
38	62 44	1.1	27.8	2.5	29.2	24	. .	. .	. .	168	210	56.0	62 47 28.0	766	+ 1 58.2	113 55 47.4	− 1.9
39	18 36	4.5	3.2	7.6	4.3	27	. .	579	. .	608	. .	56.0	18 39 9.6	. .	+ 20.6	69 45 51.4	+ 3.7
40	18 30	10.0	8.5	13.7	8.2	27	. .	050	. .	068	. .	56.0	18 33 6.6	768	+ 20.5	69 39 48.3	+ 3.8
41	28 52	2.4	1.7	5.6	1.4	19	518	725	. .	. .	. .	56.0	28 54 22.9	. .	+ 33.8	80 1 17.9	− 1.3
42	24 58	5.5	5.3	8.8	5.6	15	. .	. .	. .	. .	020	56.0	24 59 14.7	780	+ 28.5	76 6 4.4	− 4.9
43	310 14	7.9	7.6	9.9	6.5	24	. .	. .	. .	570	. .	57.3	310 17 56.7	730	− 1 11.3	1 23 6.6	+ 0.6
44	36 54	8 6.7	3.8	8.0	5.7	28	. .	778	762	770	. .	57.3	36 57 46.3	. .	+ 45.5	88 4 53.0	
45	36 10	29.5	28.4	2.5	0.0	18	. .	908	. .	930	. .	57.3	36 12 9.9	730	+ 44.4	87 19 15.5	− 0.1
46	35 16	0.5	28.8	4.4	0.4	20	782	796	. .	857	870	57.3	35 18 39.9	738	+ 42.9	86 25 44.0	+ 0.3
47	18 16	4.3	2.8	7.8	3.3	25	575	668	. .	708	738	57.3	18 19 57.6	740	+ 20.1	69 26 38.9	+ 0.1
48	311 36	3.4	3.9	6.8	3.9	27	. .	308	422	412	408	57.5	311 40 23.9	764	− 1 8.5	2 45 36.6	+ 2.4
49	67 36	6.5	29.6	3.3	5.2	22	596	600	. .	618	670	57.5	67 39 9.8	764	+ 2 27.4	118 47 58.4	+ 0.4

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
44	− 32 39.9	− 14 57.4

DATE.	Number.		OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
															m. s.	s.	s.	s.	h. m. s.	s.
1869. Jan. 19	1		Uranus I, S.	F.	.	24.6	27.5	29.0	. .	. .	. .	46.8	48.3	51.0	3 37.87	+ 0.11	. .	+39.36	7 4 17.34	. .
	2		Uranus II, N.	F.	.	. .	. .	34.1	36.0	38.2	40.5	42.8	. .	. .	3 38.31	+ 0.11	. .	+39.36	7 4 17.78	. .
	3	α^2	Geminorum	F.	3	21.1	24.0	26.0	33.1	35.7	37.9	45.2	47.0	50.0	25 35.56	+ 0.12	+39.37	+39.36	7 26 15.04	+ 0.19
	4	α	Canis Minoris	F.	.	35.4	38.2	39.8	45.8	47.8	49.8	56.0	57.8	0.2	31 47.87	+ 0.08	+39.48	+39.37	7 32 27.32	— 0.17
	5	β	Geminorum	F.	.	25.2	28.0	30.0	37.0	39.2	41.4	48.3	50.1	53.3	36 39.17	+ 0.12	+39.35	+39.37	7 37 18.66	+ 0.02
	6	ϕ	Geminorum	F.	.	. .	. .	45.5	47.7	50.0	52.2	54.8	. .	. .	44 50.03	+ 0.11	+39.30	+39.37	7 45 29.51	+ 0.03
	7	λ	Ursæ Min., S. P.	F.	.	. .	. .	20.0	32.0	45.0	59.0	12.0	. .	. .	53 46.00	— 5.20	. .	+39.37	19 54 20.17	— 6.38
	8	μ	Leonis	F.	3	26.0	28.8	30.5	37.3	39.4	41.8	48.7	50.6	53.3	44 39.60	+ 0.11	+39.41	+39.38	9 45 19.09	+ 0.04
	9	α	Leonis	F.	3	32.2	34.6	36.3	42.7	44.7	46.7	53.0	54.5	57.3	0 44.67	+ 0.09	+39.42	+39.38	10 1 24.14	— 0.05
	10	32	Ursæ Majoris	F.	3	21.2	27.5	31.3	46.0	50.8	56.1	10.9	14.5	20.5	7 50.98	+ 0.28	. .	+39.38	10 8 30.64	+ 0.20
	11	γ^1	Leonis	F.	.	. .	. .	1.6	3.9	5.8	8.1	10.2	. .	. .	12 5.91	+ 0.10	+39.31	+39.38	10 12 45.39	+ 0.09
	12		Mars I, S.	F.	.	36.7	39.3	40.8	. .	. .	. .	57.6	59.1	1.8	25 49.22	+ 0.09	. .	+39.39	IC 26 28.70	. .
	13		Mars II, N.	F.	.	. .	. .	46.2	48.2	50.5	52.6	54.7	. .	. .	25 50.43	+ 0.09	. .	+39.39	10 26 29.91	. .
	14	α	Ophiuchi	N.	4	57.6	0.2	1.7	8.0	10.0	12.2	18.4	20.0	22.7	28 10.09	+ 0.04	+39.56	+39.54	17 28 49.67	— 0.01
	15	μ	Herculis	N.	4	24.8	27.7	29.5	36.3	38.6	40.9	47.8	49.5	52.5	40 38.62	+ 0.08	+39.59	+39.54	17 41 18.24	— 0.05
	16	δ	Ursæ Minoris.	N.	4	. .	. .	28.0	3.0	36.7	11.5	46.0	. .	. .	13 36.92	+ 2.28	. .	+39.55	18 14 18.75	— 0.28
	17	ι	Aquilæ	N.	3	. .	. .	19.3	21.2	23.4	25.4	27.5	. .	. .	27 23.35	— 0.01	+39.57	+39.55	18 28 2.89	+ 0.02
	18	α	Lyræ	N.	5	33.0	36.3	38.2	46.1	48.7	51.4	59.0	1.0	4.3	31 48.67	+ 0.12	+39.53	+39.55	18 32 28.34	+ 0.02
20	19		Sun I, S.	N.	2	55.2	57.8	59.4	5.9	7.9	10.3	16.9	18.5	21.1	10 8.11	— 0.04	. .	+39.56	20 10 47.63	. .
	20		Sun II, N.	N.	2	. .	. .	22.7	24.8	27.1	29.2	31.4	. .	. .	12 27.03	— 0.04	. .	+39.56	20 13 6.55	. .
	21	β	Cephei	N.	3	39.3	46.7	51.3	9.3	15.1	21.0	39.0	43.4	50.7	26 15.09	+ 0.38	. .	+39.57	21 26 55.04	+ 0.18
	22	ε	Pegasi	N.	3	. .	. .	. .	. .	. .	. .	12.1	13.8	16.3	37 3.90	+ 0.03	+39.63	+39.57	21 37 43.50	— 0.02
	23		Polaris	N.	4	52.5	38.5	42.0	53.5	17.5	41.0	55.7	59.5	44.0	10 18.24	+ 5.50	. .	+39.59	1 11 3.33	+ 2.30
	24	β	Arietis	N.	3	31.4	34.1	35.8	42.2	44.4	46.6	53.0	54.7	57.4	46 44.40	+ 0.06	+39.58	+39.59	1 47 24.05	+ 0.02
	25		Moon I, S.	N.	3	21.7	24.3	25.9	32.1	34.2	36.3	42.5	44.2	46.8	58 34.22	+ 0.02	. .	+39.60	1 59 13.84	+62.96
	26	ξ^1	Ceti	N.	3	11.2	13.8	15.4	21.5	23.6	25.6	31.8	33.4	35.8	5 23.57	+ 0.03	+39.55	+39.60	2 6 3.20	+ 0.08
	27	δ	Ursæ Min., S. P.	N.	3	7.0	24.7	59.5	50.5	16.0	. .	. .	. .	. .	13 41.38	— 2.26	. .	+39.62	18 14 18.74	— 0.49
	28	α	Canis Majoris	N.	3	31.1	33.7	35.3	41.5	43.6	45.7	52.2	53.9	56.6	38 43.73	— 0.03	+39.62	+39.63	6 39 23.33	— 0.06
	29		Uranus I, (center).	N.	4	. .	. .	22.7	25.0	27.1	29.3	31.6	. .	. .	3 27.13	+ 0.06	. .	+39.63	7 4 6.82	. .
	30		Uranus II	N.	4	14.2	16.9	18.6	. .	. .	. .	36.3	37.8	40.8	3 27.43	+ 0.06	. .	+39.63	7 4 7.12	. .
	31		Aglaia	N.	2	34.0	36.8	38.8	45.6	48.0	50.4	57.3	59.5	2.4	12 48.09	+ 0.08	. .	+39.63	7 13 27.80	. .
	32	α^2	Geminorum	N.	5	21.0	24.0	25.9	33.1	35.4	37.8	45.0	46.9	50.0	25 35.46	+ 0.09	+39.51	+39.63	7 26 15.18	+ 0.32
	33	α	Canis Minoris	N.	4	35.5	38.0	39.5	45.7	47.7	49.8	56.0	57.6	0.0	31 47.76	+ 0.02	+39.66	+39.63	7 32 27.41	— 0.09
	34		Pandora	N.	3	47.3	50.3	52.0	59.0	1.6	3.9	11.3	13.2	16.2	42 1.64	+ 0.09	. .	+39.63	7 42 51.36	. .
	35	3	Ursæ Majoris	N.	5	32.8	40.0	44.1	1.1	6.7	12.4	29.5	33.6	40.7	59 6.77	+ 0.36	. .	+39.63	7 59 46.76	+ 0.05
	36	15	Argus	N.	4	6.2	9.0	10.7	17.3	19.5	21.7	28.5	30.1	32.9	1 19.54	— 0.05	+39.65	+39.64	8 1 59.13	— 0.03
	37	κ	Cephei, S. P.	N.	4	. .	. .	49.6	40.4	31.2	22.0	12.6	. .	. .	12 31.13	— 0.59	. .	+39.64	20 13 10.18	— 0.20
	38	σ	Ursæ Majoris, (R.)	N.	4	40.0	46.5	50.5	6.7	12.1	17.3	33.4	37.6	44.4	58 12.06	— 0.08	. .	+39.64	20 58 51.62	+ 0.10
	39		Lutetia	N.	2	39.8	42.5	44.1	50.7	53.2	55.3	1.6	3.4	6.0	5 52.96	+ 0.06	. .	+39.64	9 6 32.66	. .
	40		Leto	N.	2	6.4	9.3	11.1	17.8	20.4	22.8	29.5	31.2	34.2	10 20.30	+ 0.08	. .	+39.64	9 11 0.02	. .
	41	α	Hydræ	N.	3	. .	. .	26.1	28.2	30.2	32.3	34.3	. .	. .	20 30.21	— 0.01	+39.66	+39.64	9 21 9.84	— 0.02
	42	α	Leonis	N.	4	32.0	34.6	36.2	42.4	44.6	46.6	52.9	54.5	57.0	0 44.53	+ 0.04	+39.63	+39.63	10 1 24.22	+ 0.01
	43	γ^1	Leonis	N.	4	52.6	55.4	57.0	3.5	5.7	7.9	14.3	16.0	18.7	12 5.68	+ 0.06	+39.60	+39.65	10 12 45.39	+ 0.07
	44		Mars I, N.	N.	5	50.0	52.7	54.2	. .	. .	. .	11.0	12.6	15.3	25 2.63	+ 0.04	. .	+39.65	10 25 42.32	. .
	45		Mars II, S.	N.	5	. .	. .	59.3	1.4	3.5	5.6	7.7	. .	. .	25 3.49	+ 0.04	. .	+39.65	10 25 43.18	. .
22	46		Moon I, S.	F.	.	32.8	35.2	37.0	43.5	45.6	47.7	53.8	55.2	58.4	40 45.47	— 0.01	. .	+39.77	3 41 25.23	+66.70
	47	γ	Tauri	F.	3	28.4	30.8	32.3	39.0	41.0	43.2	49.2	51.0	53.7	11 40.96	— 0.01	+39.78	+39.77	4 12 20.72	+ 0.01
	48	ε	Tauri	F.	.	5.6	8.3	10.2	16.6	18.8	21.0	27.1	29.1	31.7	20 18.71	0.00	+39.79	+39.77	4 20 58.48	— 0.02
	49	α	Tauri	F.	.	32.4	34.9	36.5	42.8	45.0	47.0	53.4	55.0	57.7	27 44.97	0.00	+39.75	+39.77	4 28 24.74	+ 0.02

10. Wire B used.
21.37.38. Bisections at sets B and D.
25. Bisections at wires II–VI.
31.34.39.40. Wire A used.
41. Put level on pivots before reading microscopes.
44. After this observation adjusted focus of microscope V, pushing it in ¼ turn of screw.
46. Bisections at wires B_1, C_1, C_5, and D_3.

Number.	Circle Division.	MICROCSOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	15 46	5.6	2.1	6.2	3.2	23	. .	217	. .	211	. .	57.5	15 49 19.9	766	+ 17.3	66 55 58.4	− 0.1
2	15 46	5.6	2.1	6.2	3.2	22	. .	. .	. .	. .	902	57.5	15 49 14.3	. .	+ 17.3	66 55 52.8	− 0.1
3	6 40	1.7	29.6	5.7	1.5	22	940	964	. .	028	038	57.5	6 43 14.6	766	+ 7.2	57 49 43.0	− 2.1
4	33 16	3.2	1.5	7.1	3.3	24	308	328	. .	338	334	57.5	33 19 36.3	. .	+ 40.2	84 25 37.7	− 1.1
5	10 30	5.2	1.1	3.1	4.7	22	728	758	. .	770	792	57.5	10 33 12.4	. .	+ 11.4	61 39 45.0	+ 1.1
6	11 44	7.5	2.0	2.8	4.4	23	. .	. .	. .	754	762	57.5	11 47 27.4	766	+ 12.8	62 54 1.4	+ 0.4
7	307 46	1.7	29.0	0.4	27.8	26	138	132	120	095	078	57.5	307 49 59.3	764	− 1 18.4	358 55 2.1	+ 2.5
8	12 12	8.5	7.0	10.5	7.2	26	506	518	. .	568	600	57.5	12 16 15.0	758	+ 13.3	63 22 49.5	+ 1.5
9	26 14	3.2	2.9	7.3	3.8	21	. .	405	. .	500	. .	57.5	26 16 53.0	. .	+ 30.1	77 23 44.3	+ 0.4
10	333 4	5.1	3.3	2.8	2.3	18	. .	996	. .	044	. .	57.5	333 8 44.5	. .	− 30.8	24 14 34.9	− 0.9
11	18 20	7.4	6.7	10.9	7.5	22	. .	. .	. .	. .	538	57.5	18 23 12.6	. .	+ 20.2	69 29 54.0	− 3.6
12	24 38	0.1	29.4	5.3	0.8	23	702	. .	. .	. .	002	57.5	24 41 26.8	756	+ 28.0	75 48 16.0	− 4.9
13	24 38	0.1	29.4	5.3	0.8	22	. .	948	. .	110	. .	57.5	24 41 14.1	756	+ 28.0	75 48 3.3	− 4.9
14	26 10	9 28.2	27.1	2.9	28.0	24	. .	. .	982	030	045	56.6	26 13 40.8	696	+ 29.5	77 20 31.5	+ 0.6
15	11 2	4.9	4.1	7.8	4.2	23	. .	958	. .	030	. .	56.6	11 5 31.9	. .	+ 11.7	62 12 4.8	− 0.4
16	312 14	7.8	8.1	9.6	6.2	27	. .	324	338	330	. .	56.6	312 18 25.5	661	− 1 5.4	3 23 41.3	− 1.4
17	47 8	6.6	6.5	12.6	7.7	27	. .	. .	. .	654	721	56.6	47 12 30.5	. .	+ 1 4.2	98 19 55.9	− 0.6
18	0 10	8.1	7.1	11.9	7.4	25	. .	080	. .	173	. .	56.6	0 13 52.7	. .	+ 0.2	51 20 14.1	+ 1.3
19	59 4	22.2	28.5	1.3	5.0	27	. .	270	202	. .	. .	56.6	59 8 15.7	. .	+ 1 38.0	110 16 14.9	− 7.7
20	58 32	9 28.5	1.0	1.9	2.6	25	. .	. .	. .	194	152	56.6	58 35 44.8	603	+ 1 36.0	109 43 42 0	− 7.7
21	328 52	5.8	6.2	8.1	4.6	21	576	619	. .	636	644	56.6	328 54 56.6	611	− 35.5	20 0 42.3	− 1.5
22	29 32	4.4	3.7	7.4	2.3	28	. .	. .	. .	. .	153	56.6	29 36 33.7	. .	+ 33.5	80 43 28.4	− 0.5
23	310 14	6.1	7.1	9.2	4.9	25	. .	. .	. .	420	. .	57.0	310 17 55.6	662	− 1 10.2	1 23 6.6	+ 0.5
24	18 40	5.1	4.5	8.6	4.7	23	. .	345	. .	260	. .	57.0	18 43 22.2	668	+ 20.2	69 50 3.6	0.0
25	32 44	12 11.5	10.8	14.3	10.2	21	672	579	446	360	228	57.0	32 45 59.9	. .	+ 38.4	83 52 59.5	
26	30 36	5.8	3.9	7.5	3.5	23	. .	. .	304	306	314	57.0	30 39 21.1	671	+ 35.4	81 46 17.7	+ 1.4
27	305 28	6.5	6.9	9.2	5.5	23	175	. .	. .	. .	. .	57.0	305 31 21.4	707	− 1 24.2	356 36 18.4	+ 1.7
28	55 22	2.0	0.8	4.1	1.8	21	082	065	. .	105	145	57.0	55 24 44.7	. .	+ 1 27.1	106 32 33.0	+ 2.8
29	15 46	4.9	2.2	5.5	1.3	22	. .	. .	082	090	100	57.0	15 49 0.9	. .	+ 17.1	66 55 39.2	− 0.1
30	15 46																
31	9 36	5.6	3.0	6.0	1.5	25	. .	106	. .	060	. .	57.0	9 37 13.7	704	+ 10.2	60 43 45.1	− 0.6
32	6 40	5.3	4.0	7.5	3.8	23	001	035	. .	079	066	57.0	6 43 17.9	. .	+ 7.1	57 49 46.2	+ 1.2
33	33 16	2.0	2.0	7.2	3.0	24	470	527	. .	596	619	57.0	33 19 39.1	709	+ 39.6	84 26 39.9	+ 1.0
34	6 38	7.4	6.2	10.6	6.4	22	. .	776	. .	740	. .	57.0	6 38 41.8	. .	+ 7.0	57 45 10.0	− 0.5
35	330 0	2.9	2.0	5.0	1.2	22	. .	. .	008	. .	. .	57.0	330 2 59.4	. .	− 34.7	21 8 45.9	− 0.6
36	62 44	2.5	1.8	6.7	3.3	24	. .	. .	125	. .	. .	57.0	62 47 32.5	. .	+ 1 56.7	113 55 50.4	+ 0.1
37	296 12	4.1	4.8	6.7	3.5	20	. .	740	728	740	. .	57.0	296 14 41.6	710	− 2 1.7	347 19 1.1	+ 1.2
38	208 42	4.1	3.6	7.2	1.5	23	705	711	. .	751	769	57.0	208 45 26.9	. .	+ 33.2	22 20 21.1	− 1.6
39	18 36	3.8	2.9	7.2	3.2	21	. .	266	. .	240	. .	57.0	18 36 15.4	. .	+ 20.4	69 42 57.0	− 1.4
40	10 40	7.9	5.9	10.4	6.2	27	. .	535	. .	466	. .	57.0	10 41 54.2	730	+ 11.5	61 48 26.9	− 0.7
41	46 54	2.5	2.5	6.5	2.1	26	. .	. .	. .	794	786	57.0	46 58 12.2	. .	+ 1 4.7	98 5 38.1	+ 1.5
42	26 14	4.5	4.0	7.5	3.2	21	430	461	. .	521	512	57.0	26 16 53.4	720	+ 29.9	77 23 44.5	+ 1.5
43	18 20	5.5	5.3	8.3	3.9	22	838	885	. .	952	944	57.0	18 23 16.2	. .	+ 20.1	69 29 57.5	− 0.2
44	24 32	6.0	5.7	10.1	5.1	21	010	. .	. .	. .	058	57.0	24 34 48.6	. .	+ 27.6	75 41 37.4	− 4.9
45	24 32	6.0	5.7	10.1	5.1	21	. .	878	. .	900	. .	57.0	24 35 1.6	721	+ 27.6	75 41 50.4	− 4.9
46	25 6	11 13.5	12.7	15.0	10.0	28	518	456	. .	434	362	56.9	25 11 17.7	746	+ 28.6	76 18 7.5	
47	23 32	4.0	3.0	6.6	2.4	21	000	008	. .	118	115	56.9	23 34 46.2	752	+ 26.6	74 41 34.0	− 1.7
48	19 56	9 29.0	27.7	0.0	26.9	26	745	772	. .	858	870	56.9	20 0 8.5	. .	+ 22.1	71 6 51.8	− 0.6
49	22 34	9 29.3	29.1	2.9	28.4	29	060	070	. .	090	098	57.0	22 38 44.8	756	+ 25.4	73 45 31.4	+ 1.3

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
16	29.918	36.6	74.0

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
25	− 30 45.6	− 14 7.1
46	− 24 4.3	− 15 33.9

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us. Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Jan. 23	1	Sun I, N.	F.	.	35.3	36.9	41.4	43.4	45.7	47.8	50.0	54.5	56.0	22 45.67	− 0.09	. .	+39.81	20 23 25.39	. .
	2	Sun II, S.	F.	.	50.8	53.6	55.3	1.8	3.9	6.1	12.6	14.4	17.0	25 3.94	− 0.09	. .	+39.81	20 25 43.66	. .
	3	Polaris	F.	3	30.5	33.0	29.0	47.0	10.0	33.5	0.0	47.0	22.0	10 10.22	+ 7.37	. .	+39.82	1 10 57.31	− 1.33
	4	β Arietis	F.	3	31.2	33.9	35.6	42.0	44.2	46.4	51.8	54.6	57.1	46 44.09	+ 0.04	+39.87	+39.82	1 47 23.95	− 0.04
	5	50 Cassiopeæ	F.	.	58.9	7.0	11.8	31.6	38.2	44.6	4.2	9.0	17.3	51 38.07	+ 0.53	. .	+39.82	1 52 18.42	+ 0.17
	6	α Arietis	F.	.	. .	. .	3.0	5.2	7.4	9.6	11.9	. .	. .	59 7.41	+ 0.05	+39.77	+39.82	1 59 47.28	+ 0.06
	7	α Tauri	F.	.	32.4	34.7	36.4	42.8	45.0	47.1	53.4	55.3	57.6	27.44.97	+ 0.02	+39.72	+39.83	4 28 24.82	+ 0.11
	8	Moon I, S.	F.	4	39.2	41.9	43.6	50.1	52.4	54.4	0.9	2.5	5.4	36 52.27	+ 0.02	. .	+39.83	4 37 32.12	+69.00
	9	γ Geminorum	F.	.	16.8	19.4	21.0	27.3	29.5	31.6	38.1	39.6	42.4	29 29.52	+ 0.02	+39.85	+39.83	6 30 9.37	− 0.02
	10	α Canis Majoris	F.	.	31.9	34.5	36.0	42.5	44.7	46.6	53.1	54.6	57.3	38 44.58	− 0.08	+38.81	+38.83	6 39 23.33	− 0.05
	11	ε Canis Majoris	F.	.	37.2	40.0	41.8	48.7	51.1	53.4	0.5	2.3	5.1	52 51.12	− 0.13	+38.87	+38.83	6 53 29.82	− 0.06
	12	Uranus, (center)	F.	.	. .	. .	51.1	53.1	55.4	57.6	0.0	. .	. .	2 55.43	+ 0.05	. .	+39.83	7 3 35.31	. .
	13	δ Geminorum	F.	.	25.6	28.2	29.9	36.6	38.9	40.8	47.6	49.2	52.0	11 38.76	+ 0.04	+39.87	+39.83	7 12 18.63	− 0.07
	14	67 Piazzi	F.	..	. .	. .	. .	. .	41.2	46.6	58.2	2.2	9.1	16 35.44	+ 0.44	. .	+39.83	7 17 15.71	− 0.08
	15	λ Ursæ Minoris, S.P.	F.	.	41.0	25.0	4.0	34.0	. .	. .	. .	. .	. .	53 54.32	− 9.54	. .	+39.83	19 52 24.61	− 1.71
	16	L Præsepe	F.	.	26.3	29.0	30.6	37.1	39.4	41.4	48.3	49.8	52.6	33 39.39	+ 0.04	. .	+39.83	8 34 19.26	+ 2.66
	17	ε Hydræ	F.	.	58.8	1.4	3.0	9.2	11.2	13.4	19.4	21.2	23.6	39 11.24	− 0.01	+39.86	+39.83	8 39 51.06	− 0.03
	18	ι Ursæ Majoris	F.	.	. .	. .	28.5	31.6	34.4	37.7	41.0	. .	. .	49 34.63	+ 0.17	. .	+39.83	8 50 14.63	+ 0.05
	19	σ^2 Ursæ Majoris	F.	.	39.1	45.8	50.0	6.3	11.2	16.8	32.7	36.8	43.7	58 11.38	+ 0.41	. .	+39.84	8 58 51.63	+ 0.03
	20	α Leonis	F.	.	32.0	34.4	36.1	42.5	44.4	46.5	52.7	54.4	57.0	0 44.44	+ 0.01	+39.81	+39.84	10 1 24.29	+ 0.02
	21	γ^1 Leonis	F.	.	52.4	55.2	56.8	3.4	5.6	7.6	14.3	16.0	18.5	12 5.53	+ 0.04	+39.83	+39.84	10 12 45.41	+ 0.03
	22	Mars I, S.	F.	.	12.2	14.9	16.5	. .	. .	. .	33.4	35.2	37.6	22 24.97	+ 0.02	. .	+39.84	10 23 4.83	. .
	23	Mars II, N.	F.	.	. .	. .	22.0	24.0	26.1	28.1	30.2	. .	. .	22 26.07	+ 0.02	. .	+39.84	10 23 5.93	. .
25	24	α Lyræ	F.	.	32.8	36.0	38.1	45.9	48.7	51.2	58.9	0.9	4.0	31 48.50	+ 0.10	+39.83	+39.88	18 32 28.48	+ 0.05
	25	β Lyræ	F.	.	18.5	21.4	23.2	30.6	32.9	35.3	42.8	44.8	47.5	44 32.00	+ 0.07	+39.83	+39.88	18 45 12.95	+ 0.07
26	26	Sun I, N.	F.	.	3.1	5.8	7.4	13.9	16.0	18.3	24.7	26.5	28.9	35 16.07	− 0.12	. .	+39.89	20 35 55.84	. .
	27	Sun II, S.	F.	.	20.7	23.6	25.3	31.9	34.0	35.9	42.4	44.2	46.9	37 33.88	− 0.12	. .	+39.89	20 38 13.65	. .
	28	Mercury, (center)	F.	1.3	. .	3.7	5.0	11.7	13.7	15.8	22.2	23.8	. .	39 13.70	− 0.11	. .	+39.90	21 39 53.47	+ 0.03
	29	α Pegasi	F.	.	. .	. .	. .	. .	35.1	37.2	41.4	43.0	45.4	57 32.94	− 0.01	+39.93	+39.90	22 58 12.83	− 0.02
	30	γ^1 Eridani	F.	.	2.8	5.4	6.9	13.2	15.3	17.3	23.7	25.4	27.9	51 15.32	− 0.11	+39.99	+39.93	3 51 55.14	− 0.03
27	31	γ Geminorum	F.	.	16.5	19.1	20.8	27.0	29.3	31.3	37.8	39.3	42.0	29 29.23	− 0.04	+40.18	+40.19	6 30 9.38	− 0.01
	32	λ Ursæ Minoris, S.P.	F.	.	23.0	. .	. .	. .	. .	. .	. .	. .	. .	54 1.30	− 9.59	. .	+40.19	19 54 31.90	+ 6.00
	33	ε Hydræ	F.	3	58.7	1.2	2.8	8.8	10.9	13.1	19.2	20.7	23.3	39 10.97	− 0.07	+40.24	+40.20	8 39 51.10	− 0.04
	34	Moon II, S.	F.	3	27.9	30.6	32.2	38.9	41.0	43.4	49.7	51.5	54.1	52 41.03	− 0.04	. .	+40.20	8 53 21.19	−72.85
	35	κ Cancri	F.	.	47.3	49.8	51.2	55.5	59.7	3.9	7.7	9.5	12.0	59 59.62	− 0.06	+40.25	+40.20	9 0 39.76	− 0.05
	36	ε Leonis	F.	.	31.6	. .	36.3	43.0	45.1	47.3	54.2	. .	58.8	37 45.19	− 0.01	+40.26	+40.20	9 38 25.38	− 0.07
	37	α Lyræ	F.	4	32.5	35.9	37.9	45.7	48.4	50.9	58.7	0.7	4.0	31 48.30	+ 0.05	+40.12	+40.29	18 32 28.64	+ 0.17
28	38	Sun I, S.	F.	.	19.4	21.7	23.7	30.2	32.2	34.3	40.6	42.5	45.2	43 32.20	− 0.20	. .	+40.30	20 44 12.30	. .
	39	Sun II, N.	F.	.	37.0	39.1	40.9	47.4	49.3	51.7	58.1	59.6	2.4	45 49.50	− 0.20	. .	+40.30	20 46 29.60	. .
	40	λ Ursæ Minoris, S.P.	H.	2	. .	. .	24.0	37.0	52.0	. .	. .	. .	. .	53 51.40	− 7.05	. .	+39.28	19 54 23.63	− 2.28
	41	F Præsepe	H.	2	19.7	22.3	23.8	30.4	32.6	34.6	41.2	42.9	45.5	31 32.56	− 0.09	. .	+39.28	8 32 11.75	+ 2.61
	42	L Præsepe	H.	2	26.9	29.7	31.3	37.5	40.2	42.4	48.9	50.5	53.3	33 40.12	− 0.09	. .	+39.28	8 34 19.31	+ 2.61
	43	κ Cancri	H.	2	48.2	50.8	52.4	58.6	0.7	2.8	8.9	10.6	13.0	0 0.67	− 0.12	+39.27	+39.28	9 0 39.83	+ 0.01
	44	ε Leonis	H.	2	32.8	35.6	37.2	43.9	46.2	48.4	55.1	56.9	59.6	37 46.19	− 0.08	+39.34	+39.28	9 38 25.39	− 0.07
	45	μ Leonis	H.	2	26.4	29.2	30.9	37.7	40.0	42.4	49.3	50.9	53.9	44 40.08	− 0.07	+39.26	+39.28	9 45 19.29	+ 0.07
	46	Mars I, S.	H.	2	54.4	57.1	58.6	. .	. .	. .	15.4	17.0	19.8	17 7.05	− 0.10	. .	+39.28	10 17 46.23	. .
	47	Mars II, N.	H.	2	. .	. .	3.8	6.0	8.1	10.2	12.2	. .	. .	17 8.07	− 0.10	. .	+39.28	10 17 47.25	. .
	48	ρ Leonis	H.	2	3.8	6.4	8.0	14.2	16.2	18.3	24.5	26.0	28.5	25 16.21	− 0.06	+39.24	+39.28	10 25 55.43	+ 0.00

3. R. A. observed over wires B_2–D_2.
6. Seems five revs. wrong in N. P. D.
7. Telescope micrometer revolutions doubtful; probably 20.722 reduced on that supposition.
8. Bisections at wires B_1, C_1, C_5, and D_3.
10.11. Counting clock probably 1^s wrong.
11.30.41. Wire B used.
14. Bisection at D_3.
15. R. A. observed over C_1 and set B.
32. R. A. and bisection observed over wire I.
41. Revolution of telescope micrometer doubtful; reduced of the supposition 28.
42. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan's Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	57 50	28.0	28.0	0.6	24.2	28	072	013	. .	. .	. .	57.0	57 54 26.9	. .	+ 1 34.4	109 2 22.5	− 7.6
2	58 22	0.0	28.7	0.2	26.3	29	. .	. .	. .	552	610	57.0	58 26 51.5	645	+ 1 36.4	109 34 49.1	− 7.6
3	310 14	0.1	29.7	2.1	1.0	25	742	722	750	762	768	57.0	310 17 54.6	604	− 1 9.2	1 23 6.6	+ 0.4
4	18 40	5.9	5.5	8.4	5.3	23	. .	. .	. .	172	202	57.0	18 43 20.2	. .	+ 20.0	69 50 1.4	− 2.4
5	327 2	11 1.7	2.5	3.2	27.1	27	. .	842	. .	875	. .	57.0	327 6 58.2	. .	− 38.2	18 12 41.2	− 0.5
6	16 0	10 1.6	25.8	27.5	25.7	26	975	902	. .	082	078	57.0	16 4 10.9	625	+ 17.0	67 10 49.1	+77.0
7	22 36	7.8	8.1	10.3	4.7	26	. .	722	. .	748	. .	57.0	22 38 45.0	652	+ 24.8	73 45 31.0	+ 0.8
8	22 14	8 21.0	18.0	22.0	19.0	20	788	830	. .	892	964	57.0	22 15 59.2	648	+ 24.3	73 22 44.7	
9	22 20	6.7	5.0	9.0	6.0	21	239	209	. .	378	310	57.0	22 22 52.4	674	+ 24.6	73 29 38.2	− 0.1
10	55 22	9 28.8	28.5	1.8	28.8	21	. .	270	. .	410	. .	57.0	55 24 45.8	. .	+ 1 26.5	106 32 33.5	+ 2.7
11	67 34	1.5	0.4	1.8	27.8	21	070	148	. .	210	223	57.0	67 39 12.7	676	+ 2 24.4	118 47 58.3	− 0.6
12	15 44	0.2	28.2	0.7	27.7	27	. .	. .	. .	. .	050	57.0	15 48 12.1	. .	+ 17.0	66 54 50.3	− 0.1
13	16 36	5.3	4.0	7.2	3.9	26	708	665	. .	716	703	57.0	16 40 13.6	. .	+ 17.9	67 46 52.7	− 0.7
14	330 6	10 25.5	26.1	22.5	25.2	26	. .	. .	. .	. .	662	57.0	330 10 32.4	. .	− 34.3	21 16 19.3	− 1.8
15	307 46	27.5	27.0	29.6	26.7	26	112	086	. .	092	122	57.0	307 49 54 8	. .	− 1 16.8	358 54 59.2	+ 0.7
16	18 30	5.1	4.6	8.5	5.1	22	. .	. .	. .	296	345	57.0	18 33 6.5	. .	+ 20.1	69 39 47.8	+ 3.7
17	31 56	9 27.5	26.4	0.9	27.2	23	. .	. .	. .	592	630	57.0	31 59 18.3	676	+ 37.3	13 6 16.8	+ 0.0
18	350 16	2.0	0.0	4.0	1.5	29	. .	. .	. .	010	906	57.0	350 20 44.5	. .	− 10.2	41 26 55.5	+ 0.0
19	331 10	7.1	6.4	6.9	5.4	27	. .	. .	. .	720	767	57.0	331 14 31.2	. .	− 32.7	22 20 19.7	− 2.3
20	26 14	29.0	28.2	3.3	28.8	21	828	844	. .	872	884	57.0	26 16 54.2	660	+ 29.4	77 23 44.8	+ 0.5
21	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . . .	654			
22	24 10	4.9	4.0	7.4	4.4	27	682	. .	. .	. .	682	57.0	24 14 28.7	654	+ 26.8	75 21 16.7	− 5.0
23	24 10	4.9	4.0	7.4	4.4	26	. .	962	. .	950	. .	57.0	24 14 17.5	. .	+ 26.8	75 21 5.5	− 5.0
24	0 10	9 29.1	28.8	0.1	28.6	25	788	829	. .	908	936	56.1	0 13 54.2	796	+ 0.3	51 20 15.7	+ 1.1
25	5 38	2.8	1.2	5.8	0.1	21	438	510	. .	578	598	56.1	5 40 51.2	788	+ 6.1	56 47 18.5	− 0.4
26	57 6	9 25.0	25.8	26.0	23.5	26	052	184	. .	. .	. .	56.1	57 9 53.9	730	+ 1 33.5	108 17 48.6	− 7.5
27	57 38	9 23.9	23.4	26.8	22.7	28	. .	. .	. .	360	333	56.1	57 42 26.1	. .	+ 1 35.5	108 50 22.8	− 7.6
28	54 0	29.9	1.2	4.0	0.2	28	165	286	. .	296	306	56.1	54 4 32.5	708	+ 1 23.0	105 12 16.7	− 6.0
29	24 20	3.5	1.1	8.9	1.7	22	. .	. .	. .	760	750	56.1	24 23 10.2	696	+ 27.0	75 29 58.4	+ 0.8
30	52 40	29.5	29.3	3.4	28.8	22	. .	476	. .	640	. .	56.1	52 45 33.2	764	+ 1 20.1	103 53 14.5	− 1.4
31	22 20	10 11.2	11.1	14.4	8.9	21	. .	. .	. .	018	072	57.0	22 22 52.6	688	+ 24.7	73 29 38.5	+ 0.1
32	307 46	5.5	6.0	8.0	4.0	27	860	. .	. .	. .	. .	57.0	307 49 52.5	686	− 1 17.0	358 54 56.7	− 0.4
33	31 56	0.2	29.3	2.7	29.2	23	508	568	. .	592	660	57.0	31 59 21.0	. .	+ 37.5	83 6 19.7	+ 2.5
34	22 28	4.1	3.8	7.4	2.2	26	658	698	844	868	888	57.0	22 32 14.1	688	+ 24.9	73 39 0.2	
35																	
36	14 28	5.4	4.0	7.6	2.7	21	722	736	. .	836	852	57.0	14 30 58.3	700	+ 15.6	65 37 35.1	− 0.4
37	0 10	7.6	7.4	10.1	5.5	25	192	220	. .	382	396	57.0	0 13 54.9	686	+ 0.3	51 20 16.4	+ 1.2
38	57 8	3.1	3.1	6.7	2.1	30	232	272	. .	. .	. .	57.0	57 13 6.7	. .	+ 1 30.3	108 20 58.2	− 7.5
39	56 36	4.2	2.9	7.5	2.6	28	. .	. .	. .	632	605	57.0	56 40 41.3	570	+ 1 28.5	107 48 31.0	− 7.5
40																	
41	18 32	2.8	2.8	5.6	1.3	29	. .	. .	. .	860	835	57.0	18 39 11.7	. .	+ 20.2	69 45 53.1	+ 3.6
42	28 32	2.8	2.8	5.6	1.3	24	. .	. .	. .	817	821	57.0	18 33 8.3	688	+ 20.1	69 39 49.6	+ 3.5
43	27 36	26.1	26.4	0.1	25.7	32	. .	. .	. .	. .	979	57.0	27 41 40.7	687	+ 31.5	78 48 33.4	+ 1.5
44	14 26	2.5	0.9	4.5	29.8	29	. .	. .	. .	930	959	57.0	14 30 59.1	686	+ 15.5	65 37 35.8	+ 0.3
45	12 10	8.0	7.5	11.7	6.1	34	360	390	. .	502	499	57.0	12 16 15.3	. .	+ 13.0	63 22 49.5	+ 1.6
46	23 32	8.6	8.0	11.9	6.8	27	. .	932	. .	971	. .	57.0	23 36 36.5	684	+ 26.2	74 43 23.9	− 5.0
47	23 32	8.6	8.0	11.9	6.8	26	893	. .	. .	. .	044	57.0	23 36 21.3	. .	+ 26.2	74 43 8.7	− 5.0
48	28 48	27.9	28.2	2.5	27.3	35	835	803	. .	900	891	57.0	28 54 27.5	684	+ 33.1	80 1 21.8	+ 1.3

No.	Barom.	External Therm.	Attached Therm.
	in.		

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
8	− 21 46.7	− 15 50.0
34	− 23 11.8	− 16 40.0

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Jan. 30	1	Mercury I, S.	F.	3	37.8	40.3	41.8	47.9	50.2	52.2	58.5	0.2	2.8	1 50.19	− 0.02	. .	+40.27	22 2 30.44	+ 0.20
	2	α Andromedæ	F.	.	41.8	44.9	46.8	53.7	. .	58.2	5.2	6.9	9.8	0 55.91	− 0.04	+40.27	+40.28	0 1 36.15	+ 0.01
	3	Polaris	F.	.	. .	. .	23.0	49.0	13.0	37.0	2.0	. .	. .	10 12.48	− 2.57	. .	+40.28	1 10 50.19	− 1.91
	4	α Orionis	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	5	Uranus, (center)	F.	.	. .	. .	40.3	42.9	44.9	47.2	49.4	. .	. .	1 44.93	− 0.05	. .	+40.29	7 2 25.17	. .
	6	φ Geminorum	F.	.	35.3	38.5	40.0	47.0	49.2	51.6	58.4	0.2	3.0	44 49.24	− 0.05	+40.31	+40.30	7 45 29.49	− 0.05
	7	λ Ursæ Minoris, S.P.	F.	.	. .	. .	16.0	27.0	42.0	53.0	. .	. .	. .	53 40.82	+ 3.25	. .	+40.30	19 54 24.47	− 1.72
	8	Præsepe	F.	.	41.7	44.4	46.1	52.4	54.8	56.9	3.5	5.2	7.8	31 54.76	− 0.05	. .	+40.31	8 32 35.02	+ 2.60
	9	Præsepe	F.	.	. .	. .	. .	. .	. .	. .	8.7	10.2	12.9	31 59.93	− 0.05	. .	+40.31	8 32 40.19	+ 2.60
31	10	β Lyræ	N.	4	15.6	18.6	20.5	27.8	30.1	32.6	39.9	41.7	44.8	44 30.18	+ 0.16	+42.69	+42.60	18 45 12.94	− 0.07
	11	γ Aquilæ	N.	3	4.8	7.8	9.3	15.4	17.5	19.6	25.9	27.3	30.0	39 17.51	+ 0.21	+42.58	+42.61	19 40 0.33	+ 0.04
	12	α Aquilæ	N.	3	26.9	29.4	31.0	37.0	39.1	41.1	47.3	48.9	51.4	43 39.12	+ 0.21	+42.54	+42.61	19 44 21.94	+ 0.08
	13	β Aquilæ	N.	3	. .	. .	4.4	6.3	8.4	10.3	12.4	. .	. .	48 8.35	+ 0.21	+42.48	+42.61	19 48 51.17	+ 0.13
Feb. 1	14	Sun I, N.	N.	1	. .	. .	. .	. .	. .	. .	0.7	2.6	5.2	59 52.37	+ 0.25	. .	+42.61	21 0 35.23	. .
	15	Sun II, S.	N.	1	. .	. .	. .	. .	10.7	13.0	17.3	18.8	21.5	2 8.70	+ 0.25	. .	+42.61	21 2 51.56	. .
	16	Polaris	T.	3	. .	. .	23.0	49.0	13.0	39.0	3.0	. .	. .	10 13.08	− 2.77	. .	+42 63	1 10 52.94	. .
	17	51 Cephei	N.	3	. .	. .	23.5	6.0	47.5	29.5	13.0	. .	. .	37 47.74	− 1.30	. .	+42.66	6 38 29.10	− 0.88
	18	ε Canis Majoris	N.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	19	Uranus, (center.)	N.	2	10.2	12.9	14.6	21.3	23.6	25.8	32.4	34.0	36.8	1 23.51	+ 0.18	. .	+42.66	7 2 6.35	. .
	20	τ Draconis, S. P.	N.	2	. .	. .	31.0	23.9	16.9	9.3	2.7	. .	. .	17 16.74	+ 0.44	. .	+42.66	19 17 59.84	+ 0.05
	21	α^2 Geminorum	N.	1	18.0	20.8	22.6	29.8	32.2	34.6	42.0	43.5	46.8	25 32.26	+ 0.17	+42.73	+42.66	7 26 15.09	+ 0.19
	22	α Canis Minoris	N.	3	32.2	34.8	36.4	42.5	44.6	46.6	52.8	54.4	57.0	31 44.59	+ 0.22	+42.66	+42.66	7 32 27.47	− 0.06
	23	β Geminorum	N.	2	22.0	24.9	26.5	33.5	35.8	38.0	45.0	46.7	49.7	36 35.79	+ 0.18	+42.72	+42.66	7 37 18.63	− 0.06
	24	Mars I, N.	N.	3	. .	. .	. .	. .	. .	. .	11.3	12.9	15.5	13 2.87	+ 0.20	. .	+42.68	10 13 45.75	. .
	25	Mars II, S.	N.	3	. .	. .	59.5	1.5	3.7	5.7	7.9	. .	. .	13 3.65	+ 0.20	. .	+42.68	10 13 46.53	. .
	26	Polaris, S. P.	N.	2	25.0	41.0	52.0	28.0	. .	. .	. .	. .	. .	10 2.58	+ 3.18	. .	+42.69	1 10 48.45	− 0.71
	27	Moon S.	N.	1	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
4	28	α Scorpii	F.	3	27.2	30.0	31.7	38.5	40.8	43.1	50.0	51.7	54.5	20 40.83	+ 0.33	+40.76	+40.69	16 21 21.85	− 0.05
	29	Moon II. S.	F.	4	18.0	20.7	22.5	29.0	31.2	33.4	40.0	41.6	44.5	32 31.21	+ 0.32	. .	+40.69	16 33 12.22	−66.86
	30	κ Ophiuchi	F.	3	34.0	36.4	38.0	44.2	46.2	48.2	54.5	56.0	58.6	50 46.23	+ 0.27	+40.62	+40.69	16 51 27.19	+ 0.10
	31	ε Ursæ Minoris	F.	2	. .	. .	. .	. .	43.5	. .	14.0	43.0	16.0	58 43.70	− 0.48	. .	+40.69	16 59 23.91	− 0.22
	32	α Lyræ	F.	.	32.0	35.3	37.0	45.1	47.6	50.3	58.0	0.0	3.2	31 47.61	+ 0.22	+40.73	+40.70	18 32 28.63	− 0.03
	33	α Aquilæ	F.	3	. .	. .	. .	40.9	43.0	45.0	49.2	50.9	53.4	43 40.97	+ 0.27	+40.69	+40.70	19 44 21.94	+ 0.02
5	34	α Pegasi	F.	.	. .	. .	27.7	29.8	31.8	33.9	36.2	. .	. .	57 31.87	+ 0.26	+40.69	+40.72	22 58 12.85	+ 0.04
	35	α Andromedæ	F.	.	41.4	44.2	45.7	52.8	55.0	57.5	4.4	6.3	9.0	0 55.14	+ 0.24	+40.69	+40.73	0 1 36.11	+ 0.04
	36	γ Pegasi	F.	.	34.8	37.6	39.0	45.4	47.6	49.6	55.8	57.3	0.0	5 47.46	+ 0.26	+40.66	+40.73	0 6 28.43	+ 0.05
	37	Polaris	F.	.	26.0	31.0	20.0	43.0	7.0	31.0	55.0	45.0	51.0	10 7.67	− 2.25	. .	+40.73	1 10 46.15	− 1.14
	38	α Orionis	F.	.	12.0	14.7	16.2	22.3	24.2	26.4	32.4	34.2	36.5	47 24.32	+ 0.27	+40.75	+40.75	5 48 5.34	0.00
	39	22 Camelopardalis	F.	4	. .	. .	33.9	39.4	45.1	50.8	56.8	. .	. .	3 45.18	+ 0.10	. .	+40.76	6 4 26.04	− 0.09
	40	δ Ursæ Minoris	F.	.	. .	. .	48.0	14.0	39.5	4.5	32.0	. .	. .	13 39.72	+ 1.28	. .	+40.76	18 14 21.76	− 0.46
	41	γ Geminorum	F.	.	15.7	18.4	20.0	26.3	28.3	30.4	36.8	38.5	41.0	29 28.38	+ 0.25	+40.69	+40.76	6 30 9.39	+ 0.07
	42	51 Cephei	F.	3	. .	. .	. .	7.0	49.0	32.5	15.0	. .	. .	37 49.58	− 1.02	. .	+40.76	6 38 29 32	+ 2.26
	43	ε Canis Majoris	F.	.	34.7	37.7	39.4	46.4	48.7	51.0	58.0	59.8	2.7	52 48.71	+ 0.34	+40.71	+40.76	6 53 29.81	+ 0.03
	44	Uranus I, S.	F.	.	34.3	37.0	38.7	. .	. .	. .	56.5	58.2	0.9	0 47.60	+ 0.25	. .	+41.76	7 1 29.61	. .
	45	Uranus II, N.	F.	.	. .	. .	43.5	45.6	47.9	50.0	52.4	. .	. .	0 47.87	+ 0.25	. .	+41.76	7 1 29.88	. .
	46	δ Geminorum	F.	.	23.4	26.1	27.8	34.4	36.6	38.7	45.4	46.9	49.9	11 36.58	+ 0.25	+41.83	+41.76	7 12 18.59	− 0.10
	47	67 Piazzi	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	48	α^2 Geminorum	F.	.	18.7	21.8	23.5	30.8	33.1	35.4	42.6	44.6	47.7	25 33.13	+ 0.23	+41.73	+41.76	7 26 15.12	+ 0.23
	49	α Canis Minoris	F.	.	33.1	35.7	37.2	43.4	45.4	47.3	53.6	55.2	57.7	31 45.40	+ 0.28	+41.78	+41.76	7 32 27.44	− 0.08
	50	β Geminorum	F.	.	22.8	25.7	27.3	34.3	36.6	38.9	45.9	47.7	50.6	36 36.64	+ 0.24	+41.81	+41.76	7 37 18.64	− 0.05

8. Revolution doubtful; probably 19. January 30 and 31. Setting microscope 2′ wrong.
20.39. Bisections at set B and D.
38. Bisections at VI½ and VII.
42. Probably one rev. wrong in N. P. D.
46. After this observation caught micrometer head with coat sleeve.
48. Probably five revs. wrong in N. P. D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	51 16	0.4	1.4	5.3	28.6	35	414	412	. .	512	514	55.0	51 22 21.6	440	+ 1 10.7	102 29 53.5	− 6.4
2	10 26	4.8	4.5	7.6	1.3	31	631	691	. .	749	840	55.0	10 31 28.1	448	+ 10.5	61 37 59.8	+ 2.4
3	310 12	10 3.9	6.0	6.3	1.6	33	572	602	619	631	. .	55.0	310 17 56.7	466	− 1 7.0	1 23 10.9	+ 4.3
4	31 26	9 23.4	22.5	25.6	19.9	28	310	400	. .	518	528	55.0	31 30 25.8	612	+ 36.1	82 37 23.1	+ 0.3
5	15 40	1.4	0.6	2.9	27.6	35	. .	. .	. .	896	916	55.0	15 46 27.1	. .	+ 16.7	66 53 5.0	− 0.1
6	11 42	0.5	0.0	2.8	27.2	31	. .	. .	. .	950	966	55.0	11 47 26.4	638	+ 12.4	62 54 0.0	− 0.6
7	307 44	9 28.2	28.8	28.7	24.5	33	708	740	. .	608	. .	55.0	307 49 50.4	. .	− 1 16.2	358 54 55.4	− 0.6
8	18 34	29.4	29.6	0.5	26.6	.	660	668	. .	. .	. .	55.0	18 37 33.6	. .	+ 20.0	69 44 14.8	+ 3.6
9	18 34	29.4	29.6	0.5	26.6	25	. .	. .	. .	. .	972	55.0	18 35 19.6	. .	+ 20.0	69 42 0.8	+ 3.6
10	5 38	3.2	3.8	6.7	29.8	21	. .	. .	. .	795	818	55.0	5 40 54.2	800	+ 6.1	56 47 21.5	+ 0.9
11	28 32	4.2	5.0	8.5	1.8	23	. .	. .	550	. .	. .	55.0	28 35 23.0	. .	+ 33.4	79 42 17.6	+ 2.3
12	30 18	3.0	3.9	6.8	1.3	24	561	570	. .	660	654	55.0	30 21 38.2	780	+ 35.9	81 28 35.3	+ 2.4
13	32 44	4.9	4.5	9.2	3.4	26	. .	. .	. .	584	545	55.0	32 48 8.8	. .	+ 39.4	83 55 9.4	+ 2.0
14	55 30	6.7	6.6	6.7	4.6	18?	. .	335	425	. .	. .	55.0	55 32 5.5	. .	+ 1 28.5	106 39 55.2	− 7.4
15	56 2	7.4	7.0	1.1	5.9	20	. .	. .	. .	138	200	55.0	56 4 32.5	755	+ 1 30.3	107 12 24.0	− 7.4
16	310 14	8.0	9.3	10.6	6.3	25	233	274	300	262	258	55.0	310 17 53.1	. .	− 1 12.3	1 23 2.0	+ 4.9
17	311 36	1.0	3.0	5.2	28.5	27	284	315	330	332	326	55.0	311 40 17.7	821	− 1 9.4	2 45 29.5	− 0.7
18	67 36	0.1	2.1	5.2	29.2	22	. .	774	. .	845	. .	55.0	67 39 8.3	. .	+ 2 29.5	118 47 59.0	− 2.0
19	15 42	6.7	4.0	6.3	1.1	25	955	990	. .	024	060	55.0	15 46 0.4	. .	+ 17.5	66 52 39.1	− 0.1
20	291 58	1.2	2.8	3.4	28.4	29	. .	330	369	371	. .	55.0	292 2 48.3	821	− 2 31.7	343 6 37.8	+ 0.1
21	6 40	7.1	6.3	8.4	3.8	23	. .	. .	. .	055	. .	55.0	6 43 16.5	. .	+ 7.3	57 49 45.0	+ 1.0
22	33 16	3.2	3.6	7.1	1.7	24	552	583	. .	695	735	55.0	33 19 38.8	. .	+ 40.6	84 26 40.6	+ 0.7
23	10 30	3.1	2.3	5.7	0.1	22	. .	. .	940	951	920	55.0	10 33 11.2	826	+ 11.5	61 39 43.9	+ 0.5
24	23 0	0.8	1.5	4.0	28.4	24	519	. .	. .	. .	641	55.0	23 3 35.3	826	+ 26.3	74 10 22.8	− 4.9
25	23 0	0.8	1.5	4.0	28.4	25	. .	486	. .	551	. .	55.0	23 3 49.5	. .	+ 26.3	74 10 37.0	− 4.9
26	307 28	4.6	5.2	7.2	1.6	25	. .	. .	486	. .	. .	55.0	307 31 52.4	827	− 1 20.5	358 36 53.1	+ 0.2
27	45 38	6.8	7.6	10.9	4.3	25	440	625	981	428	. .	55.0	45 42 2.9	827	+ 1 3.4	96 49 27.5	
28	64 56	4.2	3.0	6.2	1.4	24	. .	361	. .	389	. .	58.0	64 59 37.3	. .	+ 2 10.0	116 8 8.5	+ 0.1
29	56 48	5.4	5.5	8.8	3.1	23	211	392	510	648	759	58.0	56 51 26.0	756	+ 1 33.1	117 59 20.3	
30	29 16	1.6	1.1	5.3	0.9	19	. .	128	. .	248	. .	58.0	29 18 16.8	. .	+ 34.1	80 25 12.1	+ 1.4
31	316 36	1.6	1.1	5.2	0.9	25	. .	. .	452	531	. .	58.0	316 39 53.0	752	− 57.5	7 45 16.7	+ 0.5
32	0 10	13.9	9.5	11.0	9.2	25	. .	. .	. .	228	250	58.0	0 13 57.4	. .	+ 0.3	51 20 18.9	+ 0.6
33	30 18	7.0	1.1	2.9	0.9	24	. .	. .	. .	544	566	58.0	30 21 38.7	728	+ 35.5	81 28 35.4	+ 1.9
34	24 20	5.0	2.7	6.0	3.0	22	. .	. .	. .	758	. .	58.0	24 23 12.6	. .	+ 27.3	75 30 1.1	+ 2.0
35	10 28	2.2	2.2	7.0	2.0	23	. .	624	. .	642	. .	58.0	10 31 26.1	. .	+ 11.2	61 37 58.5	+ 0.1
36	24 22	3.8	1.1	4.0	3.1	25	. .	. .	. .	805	825	58.0	24 25 58.1	704	+ 27.3	75 32 46.6	+ 0.8
37	310 14	5.0	5.0	6.5	4.2	25	951	005	010	895	958	58.0	310 18 3.4	714	− 1 11.0	1 23 13.6	+ 6.2
38	31 28	0.0	29.0	5.0	29.0	19	. .	. .	. .	518	678	58.0	31 30 20.7	770	+ 37.5	82 37 19.4	− 3.6
39	329 28	1.0	0.0	3.2	27.3	28	078	100	. .	118	132	58.0	329 32 31.5	. .	− 35.9	20 38 16.8	− 0.6
40	305 28	9 29.0	28.9	1.6	26.6	23	180	184	190	208	240	58.0	305 31 14.7	. .	− 1 25.5	356 36 10.4	− 1.6
41	22 20	3.1	1.4	7.6	1.9	21	. .	. .	. .	. .	318	58.0	22 22 49.8	776	+ 25.2	73 29 36.2	− 2.2
42	311 36	5.4	6.0	8.6	3.4	26	. .	. .	870	790	780	58.0	311 40 16.9	. .	+ 1 8.7	2 47 46.8	+17.6
43	67 36	29.0	29.3	4.9	29.4	22	. .	870	. .	793	. .	58.0	67 39 10.6	. .	+ 2 28.0	118 47 59.8	+ 2.1
44	15 42	3.0	1.7	2.7	1.8	22	420	. .	. .	. .	522	58.0	15 45 7.3	. .	+ 17.3	66 51 45.8	− 0.1
45	15 42	3.0	1.7	2.7	1.8	22	. .	048	. .	152	. .	58.0	15 45 1.6	. .	+ 17.3	66 51 40.1	− 0.1
46	16 36	6.7	5.4	10.9	5.7	26	. .	372	. .	420	. .	58.0	16 40 11.9	. .	+ 18.4	67 46 51.5	− 1.5
47	330 6	2.6	2.8	5.8	1.2	27	828	835	. .	810	790	58.0	330 10 30.9	789	− 35.1	21 16 17.0	− 0.8
48	6 40	9.5	7.5	13.3	7.8	27	. .	. .	. .	430	440	58.0	6 44 29.5	. .	+ 7.3	57 50 58.0	+74.2
49	33 16	6.3	4.7	11.5	5.9	24	. .	248	. .	273	. .	58.0	33 19 39.1	. .	+ 40.3	84 26 40.6	+ 0.5
50	10 30	8.0	6.5	12.6	6.3	22	. .	. .	. .	211	221	58.0	10 33 8.6	784	+ 11.4	61 39 41.2	− 1.8

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
17	30.547	28.4	73.5

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
27	− 41 55.7	− 16 3.8
29	− 47 5.6	− 15 24.2

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Feb. 5	1	φ Geminorum	F.	3	33.6	36.4	38.1	45.0	47.5	49.8	56.5	58.3	1.2	44 47.38	+ 0.24	+41.88	+41.76	7 45 29.38	− 0.16
	2	λ Ursæ Min., S. P.	F.	.	. .	. .	18.0	32.0	43.0	57.0	. .	. .	. .	53 43.40	+ 3.47	. .	+40.77	19 54 27.64	− 0.14
	3	15 Argus	F.	.	4.4	7.5	9.1	15.9	18.1	20.3	27.0	28.8	31.4	1 18.06	+ 0.33	+40.77	+40.77	8 1 59.16	− 0.02
	4	ε Hydræ	F.	.	57.9	0.4	2.0	8.0	10.1	12.0	18.5	20.0	22.4	39 10.14	+ 0.28	+40.77	+40.77	8 39 51.19	0.00
	5	24 Ursæ Majoris	F.	.	. .	. .	0.4	6.4	12.4	18.4	24.6	. .	. .	22 12.43	+ 0.09	. .	+40.77	9 22 53.29	+ 0.05
	6	Mars I, N.	F.	.	18.4	19.9	21.8	. .	. .	. .	38.8	40.4	42.8	6 30.35	+ 0.26	. .	+40.78	10 7 11.39	. .
	7	Mars II, S.	F.	.	. .	. .	27.0	29.0	31.2	33.4	35.4	. .	. .	6 31.19	+ 0.26	. .	+40.78	10 7 12.23	. .
	8	Moon II	F.	.	54.7	57.5	59.2	5.9	8.0	10.2	17.0	18.6	21.5	27 8.07	+ 0.28	. .	+40.79	17 27 49.14	−66.86
	9	α Lyræ	F.	.	. .	. .	45.0	47.6	50.2	52.8	58.0	0.0	3.4	31 47.59	+ 0.18	+40.92	+40.79	18 32 28.56	− 0.13
	10	Venus II, N.	T.	.	10.2	13.0	14.7	21.1	23.3	25.5	32.0	33.8	36.6	47 23.36	+ 0.26	. .	+40.80	19 48 4.42	− 0.40
6	11	Sun I, S.	T.	.	51.6	54.3	55.9	2.3	4.4	6.6	12.9	14.6	17.2	20 4.42	+ 0.25	. .	+40.81	21 20 45.48	. .
	12	Sun II, N.	T.	.	7.0	9.5	11.0	17.4	19.6	21.4	28.2	29.6	32.3	22 19.56	+ 0.25	. .	+40.81	21 23 0.62	. .
	13	δ Ursæ Min., S. P.	T.	.	. .	. .	49.0	15.0	40.0	7.0	. .	. .	. .	13 40.62	+ 1.28	. .	+40 86	18 14 22.86	+ 0.64
	14	γ Geminorum	T.	.	15.5	18.2	19.8	26.1	28.3	30.3	36.7	38.4	41.1	29 28.27	+ 0.21	+40.83	+40.86	6 30 9.34	+ 0.03
	15	Uranus I, N.	T.	.	26.6	29.3	31.0	. .	. .	. .	48.7	50.4	53.2	0 39.87	+ 0.20	. .	+40.86	7 1 20.93	. .
	16	Uranus II, S.	T.	3	. .	. .	35.8	38.0	40.1	42.4	44.7	. .	. .	0 40.19	+ 0.20	. .	+40.86	7 1 21.25	. .
	17	δ Geminorum	T.	.	24.3	27.0	28.7	35.3	37.5	39.8	46.5	48.1	50.9	11 37.57	+ 0.21	+40.88	+40.87	7 12 18.65	− 0.04
	18	15 Argus	T.	.	. .	. .	13.8	15.9	18.0	20.3	22.6	. .	. .	1 18.11	+ 0.26	+40.79	+40.87	8 1 59.24	+ 0.06
	19	ε Hydræ	T.	.	58.8	1.4	3.0	8.9	11.1	13.0	19.4	20.9	23.5	39 11.11	+ 0.23	+39.85	+39.87	8 39 51.21	+ 0.02
	20	Anonymous	T.	3	49.6	52.6	54.4	1.4	3.7	5.8	12.6	14.7	17.8	54 3.62	+ 0.20	. .	+39.87	8 54 43.69	. .
	21	κ Cancri	T.	.	47.3	50.0	51.5	57.6	59.9	1.8	8.1	9.7	12.3	59 59.80	+ 0.22	+39.86	+39.88	9 0 59.90	+ 0.02
	22	Mars I, S.	T.	.	49.6	52.2	53.8	. .	. .	. .	10.9	12.5	15.1	5 2.35	+ 0.21	. .	+40.88	10 5 43.44	. .
	23	Mars II, N.	T.	.	. .	. .	59.1	1.2	3.2	5.5	7.5	. .	. .	5 3.29	+ 0.21	. .	+40.88	10 5 44.38	. .
	24	γ Leonis	T.	.	51.5	54.2	55.9	2.3	4.6	6.8	13.4	14.8	17.7	12 4.58	+ 0.21	+40.86	+40.88	10 12 45.67	+ 0.04
8	25	Sun I	N.	2	45.4	48.1	49.5	55.9	57.9	59.8	6.4	8.0	10.7	27 57.97	+ 0.25	. .	+41.25	21 21 39.47	. .
	26	Sun II	N.	.	0.0	2.6	4.2	10.5	12.5	14.6	21.0	22.5	25.3	30 12.58	+ 0.25	. .	+41.25	21 30 54.08	. .
	27	δ Ursæ Min., S. P.	N.	2	3.0	21.0	54.0	46.0	10.5	37.0	. .	. .	. .	13 36.85	+ 1.38	. .	+41.28	18 14 19.51	− 3.12
	28	Uranus	N.	1	9.3	12.1	13.8	20.5	22.5	25.0	31.6	33.3	35.9	0 22.67	+ 0.21	. .	+41.28	7 1 4.16	. .
	29	δ Geminorum	N.	2	24.2	26.6	28.5	34.9	37.2	39.3	46.0	47.7	50.5	11 37.21	+ 0.20	+41.24	+41.28	7 12 18.69	+ 0.01
	30	φ Geminorum	N.	3	34.3	37.2	38.8	45.7	48.0	50.3	57.2	58.8	1.8	44 48.01	+ 0.20	+41.31	+41.28	7 45 29.49	− 0.05
	31	λ Ursæ Min., S. P.	N.	.	. .	. .	27.0	37.0	51.0	3.0	. .	. .	. .	53 50.88	+ 3.79	. .	+41.28	19 54 35.95	+ 7.59
10	32	51 Cephei	T.	.	. .	58.0	23.0	. .	48.0	30.0	12.0	. .	. .	37 47.76	+ 0.16	. .	+41.20	6 38 29.12	+ 0.18
	33	Uranus I, S.	T.	.	52.7	55.4	57.2	. .	. .	. .	15.0	16.6	19.4	0 6.05	+ 0.06	. .	+41.20	7 0 47.31	. .
	34	Uranus II, N.	T.	.	. .	. .	1.7	4.2	6.3	8.6	10.9	. .	. .	0 6.33	+ 0.06	. .	+41.20	7 0 47.59	. .
	35	δ Geminorum	T.	.	24.0	26.7	28.5	35.2	37.4	39.6	46.1	47.9	50.4	11 37.31	+ 0.06	+41.26	+41.20	7 12 18.57	− 0.09
	36	α² Geminorum	T.	.	19.3	22.6	24.3	31.5	33.8	36.3	43.4	45.3	48.4	25 33.88	+ 0.06	+41.13	+41.20	7 26 15.14	+ 0.27
11	37	Sun I, S.	N.	2	42.3	45.0	46.6	52.9	54.7	57.0	3.4	5.1	7.7	39 54.97	− 0.07	. .	+41.32	21 40 36.22	. .
	38	Sun II, N.	N.	2	. .	. .	. .	. .	. .	. .	17.4	19.0	21.6	42 9.00	− 0.07	. .	+41.32	21 42 50.25	. .
	39	Mercury I, C.	N.	2	52.2	54.6	56.3	2.5	4.3	6.5	12.7	14.1	16.7	30 4.43	− 0.06	. .	+41.33	22 30 45.70	+ 0.30
	40	α Pegasi	N.	3	18.8	21.5	22.9	29.3	31.3	33.5	39.8	41.4	44.0	57 31.39	− 0.01	+41.43	+41.33	22 58 12.71	− 0.09
	41	α Andromedæ	N.	2	40.9	43.6	45.3	52.3	54.7	56.8	3.8	5.6	8.4	0 54.60	+ 0.02	+41.39	+41.33	0 1 35.95	− 0.06
	42	γ Pegasi	N.	2	. .	. .	. .	. .	. .	51.3	55.3	57.0	59.5	5 46.95	− 0.01	+41.37	+41.33	0 6 28.27	− 0.06
	43	α Aurigæ, (R.)	N.	4	. .	. .	14.2	17.1	20.0	22.9	25.8	. .	. .	6 19.99	− 0.15	. .	+41.36	5 7 1.20	− 0.19
	44	β Tauri	N.	4	5.7	8.7	10.5	17.5	19.8	22.1	29.1	30.7	33.7	17 19.76	+ 0.01	+41.32	+41.36	5 18 1.13	+ 0.03
	45	α Leporis	N.	3	3.6	6.0	7.7	12.1	16.4	20.7	24.9	26.5	29.1	26 16.33	− 0.09	+41.39	+41.36	5 26 57.60	− 0.05
	46	α Columbæ	N.	2	59.1	2.1	4.0	11.4	13.9	16.3	23.8	25.6	28.7	34 13.88	− 0.14	. .	+41.36	5 34 55.10	+ 0.06
	47	δ Ursæ Min., S. P.	N.	3	. .	. .	51.5	18.0	43.5	8.7	34.7	. .	. .	13 43.40	− 1.28	. .	+41.36	18 14 23.48	+ 0.10
	48	γ Geminorum	N.	3	15.2	17.8	19.4	25.7	27.9	30.0	36.4	37.9	40.7	29 27.89	0.00	+41.40	+41.37	6 30 9.24	− 0.03
	49	α Canis Majoris	N.	2	29.2	31.8	33.4	40.0	42.0	44.2	50.4	52.0	54.8	38 41.98	− 0.08	+41.28	+41.37	6 39 23.27	+ 0.02
	50	50 Draconis, S. P.	N.	.	38.3	28.7	22.7	58.3	51.0	43.2	18.5	12.8	2.5	49 50.67	− 0.34	. .	+41.37	18 50 31.70	+ 0.12

5. N. P. D. seems wrong.
20. Wire A used; observed for Leto.
25. Eye-piece taken out to adjust the self-adjusting levers.
38. R. A. observed over D, VI, and VII; last bisection 12ˢ after passing wire VII.
50. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	11 44	7.5	4.6	10.8	5.7	23	220	268	. .	328	322	58.0	11 47 24.5	. .	+ 12.8	62 53 58.5	− 1.7
2	307 46	2.5	1.5	5.1	0.0	25	295	284	255	235	. .	58.0	307 49 49.8	. .	− 1 18.9	358 54 52.1	− 2.0
3	62 44	5.0	2.2	6.8	0.4	24	. .	120	. .	208	. .	58.0	62 47 34.0	. .	+ 1 58.9	113 55 54.1	− 0.2
4	31 56	0.0	27.7	4.6	28.6	23	. .	321	. .	388	. .	58.0	31 59 18.4	. .	+ 38.4	83 6 18.0	0.0
5	328 26	2.2	4.0	4.0	29.6	23	345	370	. .	. .	. .	58.0	328 29 21.1	. .	− 37.7	19 35 4.6	
6	22 26	7.4	5.8	11.6	5.2	24	709	. .	. .	. .	711	58.0	22 29 46.6	. .	+ 25.5	73 36 33.3	− 4.9
7	22 26	7.4	5.8	11.6	5.2	25	. .	762	826	. .	. .	58.0	22 30 3.0	808	+ 25.5	73 36 49.7	− 4.9
8																	
9	0 10	7.2	4.6	8.8	4.5	25	. .	. .	. .	458	. .	58.1	0 13 56.3	. .	+ 0.2	51 20 17.7	+ 0.1
10	60 8	1.8	29.3	6.0	1.4	29	. .	. .	. .	351	420	58.1	60 12 51.6	728	+ 1 45.4	111 20 58.2	− 5.0
11	54 30	9 26.1	24.0	29.8	23.4	29	560	543	. .	. .	. .	58.1	54 34 49.1	. .	+ 1 24.0	105 42 34.3	− 7.3
12	53 58	29.8	28.7	3.3	28.5	27	. .	. .	. .	600	500	58.1	54 2 21.7	681	+ 1 22.3	105 10 5.2	− 7.3
13	305 28	10 0.0	28.5	3.2	27.7	23	. .	. .	233	. .	. .	58.1	305 31 16.2	756	− 1 25.1	356 36 12.3	+ 0.3
14	22 20	6.1	5.3	6.4	4.5	21	. .	. .	180	. .	. .	58.1	22 22 50.6	. .	+ 25.1	73 29 36.9	− 1.5
15	15 42	5.3	2.2	8.5	1.3	21	324	. .	. .	. .	298	58.1	15 44 51.7	. .	+ 17.2	66 51 30.1	− 0.1
16	15 42	5.3	2.2	8.5	1.3	21	. .	672	. .	690	. .	58.1	15 44 57.2	. .	+ 17.2	66 51 35.6	− 0.1
17	16 36	3.6	0.3	6.1	29.8	26	. .	754	. .	703	. .	58.1	16 40 12.4	763	+ 18.2	67 46 51.8	− 1.2
18	62 44	2.3	0.5	7.6	2.0	24	. .	300	. .	. .	. .	58.1	62 47 35.0	773	+ 1 58.4	113 55 54.6	+ 0.1
19	31 56	1.5	29.6	7.3	29.8	23	. .	. .	. .	390	. .	58.1	31 59 20.2	. .	+ 38.3	83 6 19.7	+ 1.7
20	9 32	5.2	2.8	9.4	2.0	32	. .	576	. .	492	. .	58.1	9 35 9.7	. .	+ 10.4	60 41 41.3	
21	27 38	29.7	28.5	28.0	26.8	24	. .	. .	. .	740	. .	58.1	27 41 37.1	782	+ 32.2	78 48 30.5	− 1.8
22	22 20	9 20.6	19.9	25.8	17.8	17	. .	. .	. .	253	. .	58.1	22 21 35.7	. .	+ 25.2	73 28 22.1	− 4.9
23																	
24	18 20	4.0	1.8	3.5	1.1	23	. .	. .	013	. .	. .	58.1	18 23 15.6	771	+ 20.3	69 29 57.1	− 1.1
25																	
26																	
27																	
28	15 40	8.2	5.6	11.8	5.9	27	. .	. .	280	400	384	62.0	15 44 30.8	740	+ 17.1	66 51 9.1	− 0.1
29	16 36	7.2	4.5	9.9	4.5	26	. .	. .	. .	288	. .	62.0	16 40 13.0	. .	+ 18.2	67 46 52.4	− 0.5
30	11 44	6.2	3.9	9.4	4.0	23	. .	278	280	298	. .	62.0	11 47 26.6	742	+ 12.4	62 54 0.2	+ 0.1
31	307 46	4.5	4.0	7.6	1.6	24	. .	982	952	995	. .	62.0	307 49 51.3	. .	− 1 18.1	358 54 54.4	+ 1.1
32																	
33	15 40	10 27.5	22.5	28.5	22.1	24	728	. .	. .	. .	932	61.9	15 44 11.1	. .	+ 16.9	66 50 49.2	− 0.1
34	15 40	10 27.5	22.5	28.5	22.1	24	. .	. .	. .	428	. .	61.9	15 44 3.1	. .	+ 16.9	66 50 41.2	− 0.1
35	16 36	22.6	20.9	26.1	20.0	25	. .	. .	. .	198	140	61.9	16 40 11.6	680	+ 17.9	67 46 50.7	− 2.2
36	6 40	24.3	21.3	27.6	22.0	21	. .	353	. .	360	. .	61.9	6 43 15.5	. .	+ 7.1	57 49 43.8	+ 0.5
37	52 54	10 18.0	14.9	18.6	14.3	26	770	853	. .	. .	. .	61.1	52 58 30.8	. .	+ 1 17.5	104 6 9.5	− 7.1
38	52 22	17.5	15.0	20.5	15.5	25	. .	. .	. .	290	288	61.1	52 26 7.5	588	+ 1 16.0	103 33 44.7	− 7.1
39	45 22	13.8	11.2	16.9	11.3	27	. .	. .	. .	970	916	61.1	45 26 44.0	541	+ 58.7	96 34 3.9	− 8.3
40	24 20	9.5	6.9	11.5	5.8	22	235	336	. .	345	385	61.1	24 23 14.1	537	+ 26.2	75 30 1.5	+ 1.8
41	10 28	17.0	14.4	19.5	13.6	22	796	858	. .	846	839	61.1	10 31 29.7	. .	+ 10.7	61 38 1.6	+ 2.3
42	24 22	11.2	9.4	13.0	7.2	25	. .	. .	. .	345	310	61.1	24 26 0.9	530	+ 26.3	75 32 48.4	+ 2.0
43	186 54	1.7	0.0	4.8	27.2	25	495	458	. .	550	629	60.7	186 57 54.5	636	+ 7.2	44 8 19.5	+ 1.8
44	10 20	10.5	7.2	12.4	6.0	24	890	910	. .	000	011	60.7	10 23 54.6	. .	+ 10.9	61 30 26.7	− 0.4
45	56 44	3.2	29.7	5.1	0.5	23	925	930	. .	020	036	60.7	56 47 32.3	. .	+ 1 30.5	107 55 24.0	+ 0.7
46	72 56	3.6	0.8	6.3	0.9	23	990	874	. .	112	098	60.7	72 59 33.5	648	+ 3 11.4	124 9 6.1	+ 2.5
47	305 28	3.5	1.6	4.3	28.9	22	. .	732	768	740	. .	60.7	305 31 13.6	666	− 1 23.4	356 36 11.4	+ 0.8
48	22 20	4.3	1.3	7.7	1.7	21	. .	. .	. .	256	254	60.7	22 22 51.9	. .	+ 24.6	73 29 37.7	− 0.7
49	55 22	2.2	29.2	4.7	29.9	21	052	104	. .	172	212	60.7	55 24 48.3	678	+ 1 26.6	106 32 36.1	+ 2.2
50	294 8	2.5	0.2	3.7	27.8	27	420	478	. .	516	570	60.7	294 12 25.0	. .	− 2 12.6	345 16 33.6	+ 1.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
28	30.298	33.2	75.0
43	30.298	45.5	77.2

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	XI.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Feb. 11	1	ε Canis Majoris .	N.	1	. .	. .	44.0	46.8	48.5	51.0	53.2	. .	. .	52 48.69	− 0.10	+41.40	+41.37	6 53 29.86	+ 0.15
	2	Uranus I, C. . .	N.	3	44.9	47.6	49.1	. .	. .	. .	7.0	8.7	11.6	59 58.15	− 0.01	. .	+41.37	7 0 39.51	. .
	3	Uranus II . . .	N.	3	. .	. .	54.0	56.1	58.5	0.6	2.8	. .	. .	59 58.39	− 0.01	. .	+41.37	7 0 39.75	. .
	4	δ Draconis, S. P. .	N.	1	19.6	12.5	7.1	52.4	48.0	42.6	26.7	22.4	15.6	11 47.43	− 0.21	. .	+41.37	19 12 28.59	+ 0.02
	5	Lutetia	N.	2	38.7	41.6	43.3	49.9	52.0	54.4	0.8	2.5	5.2	43 52.04	+ 0.01	. .	+41.38	8 44 33.43	. .
	6	Leto	N.	3	8.3	11.2	13.4	20.1	22.3	24.7	31.8	33.5	36.4	49 22.41	0.00	. .	+41.38	8 50 3.79	. .
	7	κ Cancri	N.	2	46.1	48.8	50.4	56.5	58.6	0.6	6.8	8.5	11.0	59 58.59	− 0.02	+41.34	+41.38	9 0 39.95	+ 0.04
	8	μ Leonis	N.	2	. .	. .	33.7	36.0	38.2	40.5	42.7	. .	. .	44 38.21	+ 0.02	+41.21	+41.38	9 45 19.61	+ 0.22
	9	Mars I, N. . .	N.	3	11.8	14.6	16.3	. .	. .	. .	33.2	34.9	37.5	57 24.72	0.00	. .	+41.38	9 58 6.10	. .
	10	Mars II, S. . .	N.	3	. .	. .	21.4	23.6	25.7	27.9	30.1	. .	. .	57 25.73	0.00	. .	+41.38	9 58 7.11	. .
	11	γ^1 Leonis	N.	3	. .	. .	59.9	2.0	4.4	6.4	8.7	. .	. .	12 4.27	+ 0.01	+41.43	+41.38	10 12 45.66	− 0.03
	12	γ Aquilæ . . .	F.	4	6.7	9.2	10.7	17.0	18.9	21.0	27.3	28.7	31.2	39 18.97	+ 0.03	+41.48	+41.43	19 40 0.43	− 0.04
	13	α Aquilæ . . .	F.	3	28.3	30.8	32.4	38.6	40.6	42.7	48.9	50.3	53.0	43 40.62	+ 0.02	+41.41	+41.43	19 44 22.07	+ 0.03
	14	α Cygni	F.	3	57.7	1.2	3.4	11.8	14.9	17.6	26.3	28.4	31.9	36 14.80	+ 0.06	. .	+41.44	20 36 56.30	+ 0.02
12	15	Sun I, N. . . .	F.	.	38.0	40.4	42.2	48.3	50.6	52.6	58.6	0.5	3.0	43 50.47	0.00	. .	+41.45	21 44 31.92	. .
	16	Sun II, S. . . .	F.	.	51.8	54.4	55.9	2.4	4.2	6.4	12.7	14.3	17.0	46 4.34	0.00	. .	+41.45	21 46 45.79	. .
	17	α Andromedæ . .	F.	3	40.7	43.5	45.3	52.2	54.5	56.9	3.8	5.5	8.5	0 54.54	+ 0.04	+41.42	+41.46	0 1 35.94	− 0.06
	18	γ Pegasi	F.	3	34.2	36.8	38.4	44.7	46.9	49.0	55.2	56.8	59.4	5 46.82	+ 0.03	+41.46	+41.46	0 6 28.31	− 0.02
	19	α Cassiopeæ . .	F.	3	. .	. .	15.0	18.8	22.6	26.1	29.7	. .	. .	32 22.43	+ 0.06	. .	+41.46	0 33 3.95	− 0.11
	20	β Ceti	F.	3	5.2	7.8	9.4	15.8	17.9	20.2	26.5	28.2	30.9	36 17.99	0.00	+41.45	+41.46	0 36 59.45	+ 0.08
	21	Polaris	F.	2	33.0	18.0	22.0	13.0	59.0	49.0	37.0	41.0	27.0	9 59.89	+ 1.06	. .	+41.46	1 10 42.41	+ 1.81
	22	α Orionis . . .	F.	3	11.4	14.2	15.5	21.6	23.6	25.9	31.9	33.4	36.2	47 23.74	+ 0.02	+41.50	+41.48	5 48 5.24	− 0.02
	23	22 Camelopardalis .	F.	3	9.7	17.0	21.2	38.5	44.5	50.0	7.5	12.0	19.2	3 44.40	+ 0.30	. .	+41.48	6 4 26.19	+ 0.31
	24	δ Ursæ Min., S. P. .	F.	.	. .	. .	51.0	16.5	43.0	7.5	33.5	. .	. .	13 42.42	− 0.24	. .	+41.49	18 14 23.67	+ 0.01
	25	γ Geminorum . .	F.	3	14.9	17.6	19.2	25.6	27.7	29.8	36.2	37.9	40.4	29 27.70	+ 0.03	+41.53	+41.49	6 30 9.22	− 0.04
	26.	α Canis Majoris .	F.	3	28.9	31.4	33.2	39.6	41.7	43.7	50.2	51.9	54.5	38 41.68	0.00	+41.49	+41.49	6 39 23.17	− 0.07
	27	ε Canis Majoris .	F.	3	34.2	37.2	38.9	46.1	48.3	50.7	57.4	59.2	2.3	52 48.26	− 0.02	+41.44	+41.49	6 53 29.73	+ 0.03
	28	Uranus I, S. . .	F.	3	36.8	39.5	41.0	. .	. .	. .	58.8	0.6	3.4	59 50.02	+ 0.04	. .	+41.49	7 0 31.55	. .
	29	Uranus II, N. . .	F.	3	. .	. .	46.0	48.2	50.4	52.7	54.9	. .	. .	59 50.43	+ 0.04	. .	+41.49	7 0 31.96	. .
	30	δ Geminorum . .	F.	3	. .	. .	32.7	34.9	37.0	39.3	41.5	. .	. .	11 37.07	+ 0.04	+41.51	+41.49	7 12 18.60	− 0.05
	31	67 Piazzi	F.	3	. .	. .	22.2	28.0	33.9	39.3	44.8	. .	. .	16 33.62	+ 0.10	. .	+41.49	7 17 15.21	− 0.35
	32	α^2 Geminorum . .	F.	.	19.1	22.0	23.9	31.1	33.5	36.0	43.2	45.0	48.0	25 33.53	+ 0.04	+41.49	+41.49	7 26 15.06	+ 0.20
	33	α Canis Minoris .	F.	.	33.6	36.0	37.5	43.8	45.9	47.9	54.1	55.7	58.1	31 45.84	+ 0.02	. .	+41.49	7 32 27.35	− 0.15
	34	β Geminorum . .	F.	3	23.1	26.0	27.9	34.8	37.0	39.5	46.3	48.1	51.0	36 37.08	+ 0.04	+41.54	+41.49	7 37 18.61	− 0.05
	35	ϕ Geminorum . .	F.	3	34.3	37.0	38.7	45.6	47.9	50.3	57.1	58.8	1.7	44 47.93	+ 0.04	+41.52	+41.49	7 45 29.46	− 0.07
	36	λ Ursæ Min., S. P. .	F.	.	. .	. .	24.0	37.0	49.0	. .	. .	. .	. .	53 49.53	− 0.90	. .	+41.50	19 54 30.13	+ 0.54
	37	15 Argus	F.	4	4.3	7.2	8.8	15.4	17.6	19.8	26.7	28.2	31.0	1 17.67	− 0.01	+41.47	+41.50	8 1 59.16	+ 0.01
	38	A. Præsepe . . .	F.	3	12.4	14.0	15.6	22.2	24.2	26.5	33.1	34.8	37.4	29 24.36	+ 0.04	. .	+41.50	8 30 5.90	+ 2.56
	39	D. Præsepe . . .	F.	3	40.9	43.7	45.3	51.9	53.9	56.0	2.6	4.0	6.9	30 53.91	+ 0.04	. .	+41.50	8 31 35.45	+ 2.55
	40	Lutetia	F.	2	. .	. .	51.0	53.1	55.3	57.4	59.2	. .	. .	42 55.19	+ 0.04	. .	+41.50	8 43 36.73	. .
	41	Anonymous . .	F.	2	. .	. .	. .	29.7	31.5	33.8	40.5	42.7	45.7	48 31.55	+ 0.04	. .	+41.50	8 49 13.09	. .
	42	κ Cancri	F.	3	. .	. .	. .	. .	0.6	2.7	6.5	8.3	10.9	59 58.42	+ 0.03	+41.46	+41.50	9 0 39.95	+ 0.04
	43	Anonymous . .	F.	3	57.1	0.2	1.9	8.0	10.0	12.2	18.4	20.2	22.7	7 10.08	+ 0.03	. .	+41.50	9 7 51.61	. .
	44	Mars I, S. . . .	F.	3	37.9	40.8	42.3	. .	. .	. .	59.3	1.0	3.7	55 50.83	+ 0.03	. .	+41.50	9 56 32.36	. .
	45	Mars II, N. . .	F.	.	. .	. .	47.6	49.8	51.9	54.0	56.0	. .	. .	55 51.85	+ 0.03	. .	+41.51	9 56 33.39	. .
	46	α Leonis	F.	.	30.5	33.1	34.7	40.8	43.0	45.0	51.3	52.9	55.5	0 42.98	+ 0.03	+41.53	+41.51	10 1 24.52	− 0.03
	47	ζ Aquilæ	T.	.	27.9	30.6	32.3	38.5	40.6	42.6	48.9	50.6	53.3	58 40.59	− 0.03	+41.47	+41.46	18 59 22.02	+ 0.03
	48	α Aquilæ	T.	.	28.3	30.8	32.5	38.6	40.7	42.7	48.9	50.5	53.1	43 40.68	− 0.05	+41.43	+41.46	19 44 22.09	+ 0.04

5.6.40.41.43. Wire A used.
13. Seems 5 revolutions wrong in N. P. D.
23. Bisections at wires II–VI.
31. Bisections at sets B and D.
39. Wire B used.
41. Observed for Leto.
43. Observed for Thisbe.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	67 36	4.0	2.1	7.7	2.0	22	. .	. .	610	. .	. .	60.7	67 39 13.4	. .	+ 2 25.0	118 47 59.6	− 3.5
2	15 40	3.7	29.8	4.5	28.6	25	412	475	. .	584	546	60.7	15 43 55.6	697	+ 16.9	66 50 33.7	− 0.1
3																	
4	286 20	0.7	29.7	2.3	26.4	21	. .	023	. .	094	. .	60.7	216 22 44.3	. .	− 3 20.3	337 25 45.2	+ 0.3
5	16 54	2.4	29.3	3.6	28.1	26	. .	005	. .	968	. .	60.2	16 55 27.3	. .	+ 18.4	68 2 6.9	− 1.4
6	9 20	5.0	0.8	6.7	0.2	30	. .	890	. .	920	. .	60.2	9 22 45.2	730	+ 10.0	60 29 16.4	− 0.6
7	27 38	3.2	1.7	5.7	29.9	24	284	325	. .	345	416	60.2	27 41 38.2	. .	+ 31.0	78 48 30.4	− 2.1
8	12 12	5.7	2.2	6.7	1.9	26	. .	. .	600	604	606	60.2	12 16 13.7	739	+ 13.2	63 22 48.1	+ 0.7
9	21 36	6.2	3.2	7.8	2.1	24	200	. .	. .	. .	250	60.2	21 39 38.7	. .	+ 24.1	72 46 24.0	− 4.8
10	21 36	6.2	3.2	7.8	2.1	25	. .	169	. .	220	. .	60.2	21 39 53.4	. .	+ 24.1	72 46 38.7	− 4.8
11	18 20	4.2	0.7	5.1	0.0	22	841	905	. .	928	990	60.2	18 23 16.3	739	+ 20.2	69 29 57.7	− 0.5
12	28 32	3.3	0.8	4.2	0.0	23	442	456	. .	530	559	60.4	28 35 24.9	696	+ 32.7	79 42 18.8	+ 1.9
13	30 18	6.1	5.1	8.0	2.2	19	. .	220	. .	292	. .	60.4	30 20 23.4	. .	+ 35.2	81 27 19.8	−74.7
14	354 2	10 15.4	14.4	16.5	11.5	21	. .	. .	. .	218	208	60.4	354 5 2.0	674	− 6.2	45 11 17.0	+ 1.5
15	52 2	4.5	5.7	10.8	4.5	25	894	932	. .	. .	. .	60.4	52 6 6.3	. .	+ 1 15.9	103 13 43.4	− 7.0
16	52 34	11.5	11.2	15.9	8.6	27	. .	. .	. .	190	235	60.4	52 38 30.8	635	+ 1 17.4	103 46 9.4	− 7.1
17	10 28	11.1	10.6	13.3	7.5	23	036	108	. .	210	236	60.4	10 31 28.3	. .	+ 11.1	61 38 0.6	+ 1.1
18	24 22	10.6	9.3	13.1	7.9	25	167	183	. .	214	250	60.4	24 25 59.2	568	+ 26.5	75 32 46.9	+ 0.4
19	343 0	7.7	5.7	6.3	5.1	28	. .	. .	. .	600	608	60.4	343 4 46.8	. .	− 17.7	34 10 50.3	+ 2.2
20	57 30	2.1	0.1	2.0	1.0	28	. .	. .	. .	698	778	60.4	57 34 43.2	572	+ 1 31.5	108 42 35.9	− 0.6
21	310 14	9.5	9.9	11.5	6.3	25	152	160	200	190	186	60.4	310 17 57.9	570	− 1 8.7	1 23 10.4	+ 1.9
22	31 28	5.2	3.3	8.8	3.8	19	233	275	. .	405	420	60.5	31 30 24.6	636	+ 36.3	82 37 22.1	− 1.2
23	329 28	6.7	5.8	7.0	2.9	27	357	430	. .	477	505	60.5	329 32 29.3	. .	− 34.8	20 38 15.7	− 0.3
24	305 28	8.5	7.8	8.4	4.0	22	351	262	279	338	323	60.5	305 31 11.8	. .	− 1 22.8	356 36 10.2	− 0.1
25	22 20	5.3	3.0	7.9	2.2	21	076	152	. .	212	244	60.5	22 22 52.1	. .	+ 24.2	73 29 37.5	− 0.9
26	55 22	12.1	10.9	13.4	8.2	20	. .	. .	. .	656	720	60.5	55 24 50.1	636	+ 1 25.7	106 32 37.0	+ 3.0
27	67 36	12.5	11.7	13.3	9.4	22	. .	412	. .	483	. .	60.5	67 39 18.3	. .	+ 2 23.2	118 48 2.7	− 0.5
28	15 40	15.3	12.3	14.8	10.0	24	206	. .	. .	. .	190	60.5	15 43 46.9	. .	+ 16.7	66 50 24.8	− 0.1
29	15 40	15.3	12.3	14.8	10.0	23	. .	918	. .	976	. .	60.5	15 43 42.9	. .	+ 16.7	66 50 20.8	− 0.1
30	16 36	11.0	7.9	10.8	6.8	26	. .	. .	. .	258	272	60.5	16 40 13.6	. .	+ 17.8	67 46 52.6	− 0.2
31	330 6	8.8	9.2	7.6	6.1	27	232	251	. .	292	304	60.5	330 10 28.6	643	− 34.0	21 16 15.8	− 0.3
32	6 40	18.0	14.9	18.8	13.0	21	. .	. .	. .	842	940	60.5	6 43 14.0	. .	+ 7.0	57 49 42.2	− 1.9
33	33 10	8.1	5.8	10.2	6.7	24	. .	200	. .	. .	275	60.5	33 19 41.9	. .	+ 39.0	84 26 42.1	+ 1.5
34	10 30	16.2	13.3	17.6	12.4	21	. .	660	. .	706	. .	60.5	10 33 10.2	644	+ 11.0	61 39 42.4	− 0.1
35	11 44	14.1	10.0	15.7	10.6	22	768	783	. .	893	910	60.5	11 47 25.6	. .	+ 12.4	62 53 59.2	− 0.6
36	307 46	9.0	7.8	10.1	5.9	24	482	558	580	. .	. .	60.5	307 49 46.8	. .	− 1 16.3	358 54 51.7	− 0.1
37	62 44	11.6	9.5	10.5	9.5	23	752	758	. .	864	875	60.5	62 47 37.7	. .	+ 1 55.0	113 55 53.9	− 1.8
38	18 40	8.0	5.8	10.5	4.7	18	. .	408	. .	506	. .	60.5	18 42 13.3	. .	+ 20.1	69 48 54.6	+ 3.7
39	18 40	8.0	5.8	10.5	4.7	21	. .	025	. .	161	. .	60.5	18 45 22.4	646	+ 20.1	69 52 3.7	+ 3.7
40																	
41	9 18	10.7	8.2	13.1	6.9	.	. .	. .	. .	343	297	60.5	9 19 26.1	. .	+ 9.8	60 25 57.1	
42	27 38	10.5	8.9	14.4	8.1	23	. .	. .	. .	975	952	60.5	27 41 39.7	. .	+ 31.2	78 48 32.1	− 0.4
43	27 32	7.5	5.3	10.6	4.4	31	. .	758	. .	776	. .	60.5	27 35 2.4	656	+ 31.1	78 41 54.7	
44	21 28	8.0	5.6	10.3	4.5	24	654	. .	. .	. .	800	60.5	21 31 48.9	. .	+ 23.5	72 38 33.6	− 4.7
45	21 28	8.0	5.6	10.3	4.5	23	. .	742	. .	778	. .	60.5	21 31 34.0	. .	+ 23.5	72 38 18.7	− 4.7
46	26 14	7.8	5.5	10.3	4.4	21	. .	. .	. .	265	300	60.5	26 16 55.3	660	+ 29.4	77 23 45.9	+ 0.5
47	25 10	23.2	22.3	26.5	19.3	20	. .	472	. .	600	. .	59.5	25 12 59.5	645	+ 28.0	76 19 48.7	+ 0.8
48	30 18	5.1	4.8	8.0	2.5	24	. .	292	. .	402	. .	59.5	30 21 40.0	623	+ 34.5	81 28 35.7	+ 1.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Feb. 13	1	Sun I, S.	T.	.	. .	. .	42.3	44.5	46.6	48.7	50.6	. .	. .	47 46.53	− 0.08	. .	+40.46	21 48 26.91	. .
	2	Sun II, N.	T.	.	47.7	50.3	51.7	58.0	0.2	2.2	8.5	10.2	12.7	50 0.17	− 0.08	. .	+40.46	21 50 40.55	. .
	3	Moon I	T.	2	14.4	17.2	18.7	24.8	27.0	29.2	36.0	37.5	39.7	22 27.17	− 0.07	. .	+40.46	23 23 7.56	+61.31
	4	α Andromedæ	T.	.	41.7	44.6	46.6	53.3	55.5	57.8	4.8	6.5	9.5	0 55.59	− 0.03	+40.43	+40.46	0 1 36.02	+ 0.03
	5	γ Pegasi	T.	.	35.2	37.9	39.4	45.8	47.9	50.0	56.1	57.8	0.5	5 47.84	− 0.04	+40.50	+40.46	0 6 28.26	− 0.06
	6	α Leporis	T.	3	4.3	7.0	8.6	15.1	17.2	19.3	25.7	27.4	30.0	26 17.18	− 0.08	+40.50	+40.46	5 26 57.56	− 0.06
	7	α Columbæ	T.	.	59.8	2.8	4.8	12.1	14.6	17.1	24.5	26.3	29.4	34 14.60	− 0.12	+40.46	+40.46	5 34 54.94	− 0.06
	8	α Orionis, (R.)	T.	3	12.5	15.1	16.6	22.8	24.8	26.9	33.1	34.6	37.2	47 24.84	− 0.12	. .	+40.46	5 48 5.18	− 0.07
	9	22 Camelopardalis	T.	.	11.2	18.3	22.6	40.2	45.9	51.6	9.2	13.4	20.7	3 45.90	0.00	. .	+40.46	6 4 26.36	+ 0.53
	10	δ Ursæ Min., S. P.	T.	.	. .	. .	52.0	18.0	44.0	9.0	35.0	26.0	0.0	13 43.56	− 0.06	. .	+40.46	18 14 23.96	− 0.01
	11	γ Geminorum	T.	.	16.0	18.7	20.4	26.7	28.9	30.9	37.3	38.9	41.7	29 28.83	− 0.04	+40.46	+40.46	6 30 9.25	0.00
	12	α Canis Majoris	T.	.	29.9	32.7	34.3	40.7	42.8	44.9	51.3	52.8	55.7	38 42.79	− 0.08	+40.44	+40.46	6 39 23.17	− 0.05
	13	ε Canis Majoris	T.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	14	Uranus C.	T.	3	30.5	33.3	35.0	39.3	41.6	. .	. .	. .	. .	59 43.80	− 0.04	. .	+40.46	7 0 24.22	. .
	15	A Præsepe	T.	.	12.6	15.3	16.9	23.5	25.5	27.7	34.4	36.0	38.6	29 25.61	− 0.04	. .	+40.46	8 30 6.03	+ 2.56
	16	D Præsepe	T.	.	42.1	44.6	46.4	52.9	55.0	57.1	3.5	5.3	8.1	30 55.00	− 0.04	. .	+40.46	8 31 35.42	+ 2.55
	17	Lutetia	T.	3	47.6	50.3	52.1	58.4	0.6	2.9	9.5	11.3	14.3	42 0.78	− 0.04	. .	+40.46	8 42 41.20	. .
	18	Leto	T.	3	21.7	24.3	26.3	32.9	35.8	38.1	45.0	46.8	49.9	47 35.64	− 0.03	. .	+40.46	8 48 16.09	. .
	19	κ Cancri	T.	.	47.2	49.6	51.3	57.4	59.6	1.6	7.9	9.3	11.8	59 59.52	− 0.05	+40.44	+40.46	9 0 39.93	+ 0.02
	20	Mars, N.	T.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	21	Mars, S.	T.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	22	α Leonis	T.	.	31.5	34.2	35.8	42.0	44.0	46.2	52.6	54.2	56.8	0 44.14	− 0.05	+40.46	+40.46	10 1 24.55	− 0.01
14	23	β Lyræ	N.	4	17.1	20.2	21.9	29.2	31.6	34.1	41.5	43.3	46.4	44 31.70	+ 0.06	+41.60	+41.61	18 45 13.37	+ 0.03
	24	γ Aquilæ	N.	4	6.5	9.0	10.6	16.8	18.9	21.0	27.2	28.7	31.4	39 18.90	+ 0.18	+41.46	+41.61	19 40 0.69	+ 0.16
15	25	α Camelopardalis	N.	5	52.0	58.2	2.0	17.0	22.1	27.1	42.4	46.1	52.3	40 22.13	− 0.36	. .	+41.61	4 41 3.38	+ 0.21
	26	ι Aurigæ	N.	5	31.9	35.0	36.8	44.1	46.5	48.9	56.2	58.0	1.0	47 46.49	+ 0.06	+41.53	+41.58	4 48 28.13	+ 0.02
	27	11 Orionis	N.	4	10.9	13.5	15.0	21.4	23.6	25.6	32.0	33.5	36.2	56 23.52	+ 0.15	+41.62	+41.58	4 57 5.25	− 0.07
	28	α Aurigæ, (R.)	N.	2	2.5	6.0	. .	. .	. .	. .	. .	. .	. .	6 20.00	− 0.29	. .	+41.58	5 7 1.29	− 0.01
	29	δ Ursæ Minoris, S.P.	N.	4	4.0	20.0	55.5	46.7	12.0	. .	. .	. .	. .	13 37.54	+ 4.98	. .	+41.58	18 14 24.30	− 0.28
	30	γ Geminorum	N.	4	14.8	17.4	19.0	25.4	27.4	29.6	36.0	37.6	40.2	29 27.49	+ 0.15	+41.59	+41.57	6 30 9.21	− 0.02
	31	α Canis Majoris	N.	3	28.5	31.1	32.8	39.1	. .	43.4	49.8	51.3	53.9	38 41.24	+ 0.27	+41.62	+41.57	6 39 23.20	− 0.12
	32	λ Ursæ Minoris, S.P.	N.	3	. .	. .	10.0	23.0	33.0	48.0	. .	. .	. .	53 34.92	+14.89	. .	+41.57	19 54 31.38	+ 0.16
	33	15 Argus	N.	1	3.9	6.7	8.3	15.0	17.3	19.3	26.0	27.9	30.5	1 17.21	+ 0.30	+41.60	+41.57	8 1 59.08	− 0.05
	34	μ Leonis	N.	3	24.1	27.0	28.6	35.6	37.8	40.1	46.9	48.6	51.4	44 37.79	+ 0.10	+41.58	+41.56	9 45 19.45	+ 0.03
	35	Mars I, N.	N.	3	55.1	57.9	59.4	. .	. .	. .	16.4	18.0	20.6	51 7.90	+ 0.14	. .	+41.56	9 51 49.70	. .
	36	Mars II, S.	N.	3	. .	. .	4.7	6.8	8.9	10.8	13.2	. .	. .	51 8.87	+ 0.14	. .	+41.56	9 51 50.57	. .
	37	α Leonis	N.	3	30.3	32.8	34.4	40.8	42.8	44.9	51.0	52.6	55.3	0 42.77	+ 0.16	+41.63	+41.56	10 1 24.49	− 0.08
	38	ε Pegasi	F.	3	49.6	52.0	53.7	0.0	1.9	4.0	10.2	11.6	14.3	37 1.92	+ 0.37	+41.33	+41.40	21 37 43.69	+ 0.05
16	39	Sun I, S.	F.	.	13.0	15.7	17.4	23.5	25.8	27.6	34.1	35.7	38.3	59 25.68	+ 0.49	. .	+41.40	22 0 7.57	. .
	40	Sun II, N.	F.	.	26.3	28.9	30.6	36.8	38.8	41.0	47.1	48.8	51.5	1 38.87	+ 0.49	. .	+41.40	22 2 20.76	. .
	41	Moon I.	F.	.	. .	. .	. .	. .	. .	. .	. .	40.9	53.4	41 15.82	+ 0.40	. .	+41.38	1 41 57.60	+61.98
	42	α Aurigæ	F.	.	. .	. .	. .	16.9	19.7	22.6	31.1	33.4	36.9	6 19.57	+ 0.11	. .	+41.37	5 7 1.05	− 0.23
	43	β Tauri	F.	3	5.5	8.4	10.1	17.0	19.3	21.8	28.7	30.5	33.3	17 19.40	+ 0.26	+41.35	+41.37	5 18 1.03	+ 0.01
	44	α Leporis	F.	.	. .	. .	. .	. .	. .	. .	. .	41.6	54.5	26 15.90	+ 0.51	+41.14	+41.37	5 26 57.78	+ 0.21
	45	α Columbæ	F.	3	58.4	1.3	3.2	10.8	13.1	15.5	22.8	24.9	27.9	34 13.10	+ 0.62	+41.16	+41.37	5 34 55.09	+ 0.15
	46	51 Cephei	F.	.	. .	. .	27.0	8.0	51.0	33.0	16.0	. .	. .	37 50.84	− 5.90	. .	+41.36	6 38 26.30	+ 0.21
	47	ε Canis Majoris	F.	.	33.5	36.4	38.3	45.3	47.5	49.9	56.9	58.5	1.5	52 47.53	+ 0.58	+41.52	+41.36	6 53 29.47	− 0.18
	48	Uranus I, S.	F.	.	7.1	9.8	11.5	. .	. .	. .	29.2	30.8	33.6	59 20.33	+ 0.29	. .	+41.36	7 0 1.98	. .
	49	Uranus II, N.	F.	.	. .	. .	16.5	18.6	20.8	23.0	25.2	. .	. .	59 20.81	+ 0.29	. .	+41.36	7 0 2.46	. .

1.2. Wire B used.
17.18. Wire A used.
25. Bisections at sets B and D.
44. R. A. observed over wires VI and VII.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″								° ′ ″		′ ″	° ′ ″	″
1	52 12	12.0	11.1	16.0	9.8	24	692	626	. .	. .	. .	59.5	52 18 21.8	. .	+ 1 15.0	103 25 58.0	− 7.1
2	51 40	12.1	10.9	14.6	8.3	23	. .	. .	. .	078	080	59.5	51 45 54.4	553	+ 1 13.6	102 53 29.2	− 7.0
3																	
4	10 28	7.4	5.8	10.6	2.8	23	. .	470	. .	590	. .	59.5	10 31 29.2	. .	+ 10.8	61 38 1.2	+ 1.8
5	24 22	10.6	9.5	13.5	5.3	25	. .	376	. .	458	. .	59.5	24 26 1.0	. .	+ 26.3	75 32 48.5	+ 1.9
6	56 44	9.9	7.5	11.3	7.3	23	. .	856	. .	786	. .	59.3	50 47 35.5	540	+ 1 28.2	107 55 24.9	+ 1.2
7	72 56	5.3	4.5	3.0	1.5	24	. .	158	. .	270	. .	59.3	72 59 35.9	. .	+ 3 7.1	124 9 4.2	+ 0.4
8	148 26	0.8	2.5	5.0	28.1	24	068	112	. .	180	180	59.3	148 29 32.9	. .	− 35.6	82 37 23.9	+ 0.5
9	329 28	6.7	5.4	7.3	2.2	27	. .	520	. .	642	. .	59.3	329 32 30.4	. .	− 34.2	20 38 17.4	+ 1.5
10	305 28	8.4	5.8	7.5	3.2	22	543	480	513	500	464	59.3	305 31 12.5	. .	− 1 21.3	356 36 12.4	+ 2.3
11	22 20	11.7	10.0	14.0	8.6	20	. .	932	. .	001	. .	59.3	22 22 54.2	562	+ 23.9	73 29 39.3	+ 0.9
12	55 22	10.3	8.0	12.0	6.6	20	. .	884	. .	978	. .	59.3	55 24 51.6	. .	+ 1 24.2	106 32 37.0	+ 2.9
13	67 36	5.5	4.8	8.5	4.5	23	. .	070	. .	200	. .	59.3	67 39 21.7	. .	+ 2 20.8	118 48 3.7	+ 0.3
14	15 40	11.0	8.5	6.8	6.4	23	. .	750	. .	824	. .	59.3	15 42 34.4	. .	+ 16.4	66 49 12.0	− 0.1
15																	
16	18 40	10.3	7.1	10.4	5.6	21	. .	058	. .	188	. .	59.3	18 45 22.7	. .	+ 19.9	69 52 3.8	+ 3.8
17	16 46	6.8	4.4	7.6	2.8	28	940	920	. .	810	830	59.3	16 48 15.4	. .	+ 17.7	67 54 54.3	− 1.4
18	9 16	8.2	4.0	7.4	3.3	30	. .	970	. .	936	. .	59.3	9 18 47.2	583	+ 9.9	60 25 18.3	− 0.6
19	27 38	6.8	5.0	8.4	3.3	24	. .	276	. .	340	. .	59.3	27 41 40.0	. .	+ 30.7	78 48 31.9	− 0.6
20	21 20	11.6	13.5	9.0	8.4	23	730	. .	. .	. .	876	59.3	21 23 37.2	. .	+ 22.9	72 30 21.1	− 4.7
21	21 20	11.6	13.5	9.0	8.4	24	. .	834	. .	878	. .	59.3	21 23 53.1	. .	+ 23.0	72 30 37.3	− 4.7
22	26 14	11.4	8.3	13.5	7.2	21	. .	. .	124	. .	. .	59.3	26 16 55.5	592	+ 28.9	77 23 45.6	+ 0.2
23	5 38	10 21.8	19.3	22.3	15.2	20	506	524	. .	665	615	58.2	5 40 55.8	505	+ 5.7	56 47 21.7	− 2.1
24	28 32	8.2	7.7	10.8	3.3	23	316	346	. .	415	434	58.2	28 35 25.9	. .	+ 31.3	79 42 18.4	+ 1.1
25	332 44	0.2	27.4	29.8	22.9	22	605	610	. .	642	630	57.9	332 47 4.6	521	− 29.7	23 52 56.1	+ 0.4
26	5 52	4.5	1.5	5.7	29.4	26	754	784	. .	885	860	57.9	5 56 14.2	. .	+ 6.0	57 2 41.4	− 0.4
27	23 36	0.0	29.1	2.0	25.4	26	920	948	. .	040	065	57.9	23 40 12.9	. .	+ 25.3	74 46 59.4	− 0.2
28	186 54	0.4	1.7	2.3	23.1	25	. .	. .	. .	927	060	57.9	186 57 56.4	. .	+ 7.0	44 8 17.8	+ 0.4
29																	
30	22 20	1.8	1.1	4.7	27.2	21	560	584	. .	692	697	57.8	22 22 53.0	. .	+ 24.0	73 29 38.2	− 0.2
31	55 22	9 28.1	28.6	0.5	25.1	21	. .	648	. .	740	. .	57.8	55 24 50.6	561	+ 1 24.2	106 32 36.0	+ 1.6
32																	
33	62 44	27.2	28.1	29.4	21.5	25	. .	148	. .	160	. .	57.8	62 47 42.6	573	+ 1 53.0	113 55 56.8	+ 0.5
34	12 12	6.4	4.8	6.7	1.3	26	640	661	. .	748	735	57.7	12 16 14.0	. .	+ 12.7	63 22 47.9	+ 0.7
35	21 4	5.7	3.8	7.4	0.9	26	465	. .	. .	. .	575	57.7	21 8 10.9	578	+ 22.6	72 14 54.7	− 4.7
36	21 4	5.7	3.8	7.4	0.9	27	. .	426	. .	515	. .	57.7	21 8 25.3	. .	+ 22.6	72 15 9.1	− 4.7
37	26 14	5 7	5.2	8.3	1.9	21	535	576	. .	663	685	57.7	26 16 56.7	. .	+ 28.8	77 23 46.7	+ 1.3
38	29 32	3.4	1.0	5.6	28.8	28	. .	408	. .	428	. .	58.4	29 36 38.2	578	+ 33.2	80 43 33.6	+ 1.3
39	51 12	9 28.5	26.8	29.6	24.6	28	060	078	. .	. .	. .	58.5	51 16 28.4	. .	+ 1 12.8	102 24 2.4	− 6.9
40	50 40	9 23.8	23.7	25.4	20.4	26	. .	. .	. .	972	925	58.5	50 44 6.4	578	+ 1 11.4	101 51 39.0	− 6.9
41																	
42	352 58	9 22.2	21.6	26.8	19.1	26	. .	. .	. .	672	628	59.2	353 2 1.9	650	− 7.3	44 8 15.8	− 1.5
43	10 20	2.0	1.3	5.8	29.2	25	. .	. .	. .	512	516	59.2	10 23 53.9	. .	+ 10.9	61 30 26.0	− 1.1
44	56 44	1.3	0.2	2.4	26.6	24	. .	. .	. .	308	335	59.2	56 47 33.3	. .	+ 1 30.6	107 55 25.1	+ 1.2
45	72 56	9 26.0	26.1	0.1	23.4	24	310	340	. .	524	545	59.2	72 59 31.8	. .	+ 3 11.9	124 9 4.9	+ 0.7
46	311 36	0.5	1.7	3.0	26.4	26	. .	740	774	778	. .	59.3	311 40 12.0	650	− 1 6.7	2 45 26.5	+ 0.2
47	67 36	9 28.2	28.3	1.5	4.8	23	. .	122	. .	302	. .	59.3	67 39 17.8	. .	+ 2 23.6	118 48 2.6	− 0.7
48	15 40	7.2	4.4	8.9	2.6	21	940	. .	. .	. .	190	59.3	15 43 5.8	. .	+ 16.8	66 49 43.8	− 0.1
49	15 40	7.2	4.4	8.9	2.6	21	. .	557	. .	822	. .	59.3	15 42 59.9	. .	+ 16.8	66 49 37.9	− 0.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
23	29.656	49.9	66.5

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Feb. 16	1	δ Geminorum	F.	.	23.7	26.5	28.1	34.7	36.9	39.2	45.8	47.3	50.2	11 36.93	+ 0.30	+41.35	+41.36	7 12 18.59	− 0.02
	2	A Præsepe	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	3	F Præsepe	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	4	κ Cancri	F.	.	45.8	48.3	49.7	56.2	58.4	0.4	6.6	8.0	10.6	59 58.22	+ 0.36	+41.33	+41.35	9 0 39.92	+ 0.02
	5	ε Leonis	F.	.	30.5	33.2	34.9	41.5	44.0	46.2	52.9	54.6	57.5	37 43.92	+ 0.28	+41.45	+41.35	9 38 25.55	− 0.11
	6	μ Leonis	F.	.	. .	. .	33.4	35.7	37.9	40.1	42.5	. .	. .	44 37.91	+ 0.27	+41.30	+41.35	9 45 19.53	+ 0.10
	7	Mars I, S.	F.	.	20.8	23.6	25.1	. .	. .	. .	42.5	44.2	46.9	49 33.85	+ 0.33	. .	+41.35	9 50 15.53	. .
	8	Mars II, N.	F.	.	. .	. .	30.7	33.0	35.0	37.3	39.2	. .	. .	49 35.03	+ 0.33	. .	+41.35	9 50 16.71	. .
	9	α Leonis	F.	3	. .	. .	38.6	40.7	42.7	44.9	47.0	. .	. .	0 42.77	+ 0.36	+41.44	+41.34	10 1 24.47	− 0.11
17	10	γ Pegasi	T.	3	34.0	36.7	38.3	44.5	46.7	48.7	55.0	56.7	59.4	5 46.67	+ 0.25	+41.35	. .	0 6 28.27	− 0.02
	11	Polaris	F.	.	. .	. .	19.0	43.0	7.0	32.0	57.0	. .	. .	10 7.28	−10.96	. .	. .	. . . .	. .
18	12	Sun I, S.	N.	3	57.2	59.7	1.2	7.5	9.5	11.7	17.9	19.4	23.0	7 9.57	+ 0.34	. .	+41.25	22 7 51.16	. .
	13	Sun II, N.	N.	2	9.6	12.3	13.9	20.0	22.1	24.0	30.4	32.0	34.7	9 22.11	+ 0.34	. .	+41.25	22 10 3.70	. .
	14	α Andromedæ	N.	4	40.6	43.6	45.3	52.2	54.5	56.9	3.9	5.5	8.5	0 54.56	+ 0.16	+41.24	+41.24	0 1 35.96	− 0.00
	15	γ Pegasi	N.	3	34.2	36.8	38.4	44.7	46.9	48.9	55.2	56.7	59.4	5 46.80	+ 0.23	+41.24	+41.24	0 6 28.27	− 0.02
	16	δ Draconis	F.	3	. .	. .	37.1	42.4	47.9	53.3	58.6	. .	. .	11 47.84	− 0.21	. .	+41.12	19 12 28.75	− 0.02
	17	γ Aquilæ	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
19	18	Sun I, S.	F.	3	47.8	50.3	52.0	58.0	0.3	2.4	8.7	10.3	12.9	11 0.30	+ 0.31	. .	+41.11	22 11 41.72	. .
	19	Sun II, N.	F.	.	. .	. .	8.7	10.8	12.8	14.9	16.9	. .	. .	13 12.81	+ 0.31	. .	+41.11	22 13 54.23	. .
	20	α Pegasi	F.	2	18.9	21.6	23.1	29.6	31.6	33.6	39.9	41.7	44.3	57 31.59	+ 0.22	+40.99	+41.11	22 58 12.92	+ 0.12
	21	α Andromedæ	F.	3	40.8	43.7	45.4	52.4	54.7	57.0	4.0	5.7	8.5	0 54.69	+ 0.17	+41.09	+41.11	0 1 35.97	+ 0.02
	22	γ Pegasi	F.	.	34.2	36.9	38.6	45.0	46.9	49.1	55.4	57.0	59.5	5 46.96	+ 0.22	+41.08	+41.11	0 6 28.29	+ 0.01
	23	Polaris	F.	2	. .	. .	15.0	40.0	4.0	27.0	51.0	. .	. .	10 3.08	− 8.06	. .	+41.11	1 10 36.13	− 0.45
	24	Moon I, S.	F.	3	4.0	6.8	8.3	15.0	17.1	19.3	25.9	27.4	30.1	12 17.01	+ 0.22	. .	+41.10	4 12 58.42	+66.94
	25	ι Aurigæ	F.	3	32.2	35.2	37.0	44.0	46.7	49.2	56.2	58.3	1.3	47 46.68	+ 0.15	+41.17	+41.10	4 48 27.93	− 0.10
	26	α Orionis	F.	3															
	27	22 Camelopardalis	F.	.	. .	. .	33.1	39.0	45.0	50.8	56.4	. .	. .	3 44.84	− 0.26	. .	+41.10	6 4 25.68	+ 0.10
	28	δ Ursæ Min., S. P.	F.	.	. .	. .	50.0	15.0	41.0	7.0	32.0	. .	. .	13 41.12	+ 3.73	. .	+41.10	18 14 25.95	+ 0.19
	29	γ Geminorum	F.	.	15.0	17.7	19.2	25.7	27.8	29.9	36.4	37.9	40.5	29 27.79	+ 0.22	+41.17	+41.10	6 30 9.11	− 0.07
	30	ε Canis Majoris	F.	3	34.2	37.2	38.9	45.9	48.1	50.5	57.4	59.3	2.0	52 48.17	+ 0.38	+41.03	+41.10	6 53 29.65	+ 0.05
	31	Uranus I, S.	F.	2	47.3	50.1	51.8	. .	. .	. .	9.5	11.3	13.9	59 0.65	+ 0.19	. .	+41.10	6 59 41.94	. .
	32	Uranus II	F.	.	. .	. .	56.6	58.8	. .	3.3	5.6	. .	. .	59 0.85	+ 0.19	. .	+41.10	6 59 42.14	. .
	33	δ Geminorum	F.	3	24.0	26.9	28.5	35.2	37.3	39.5	46.2	47.7	50.6	11 37.32	+ 0.19	+41.04	+41.10	7 12 18.61	+ 0.03
	34	φ Geminorum	F.	.	. .	. .	43.6	45.8	48.1	50.2	52.7	. .	. .	44 48.07	+ 0.17	+41.20	+41.10	7 45 29.34	− 0.14
	35	λ Ursæ Min., S. P.	F.	.	. .	. .	. .	. .	39.0	53.0	5.0	. .	. .	53 39.73	+11.00	. .	+41.10	19 54 31.83	− 1.61
	36	ρ Argus	F.	3	4.0	7.1	8.7	15.5	17.6	19.6	26.6	28.2	31.0	1 17.59	+ 0.36	+41.13	+41.10	8 1 59.05	− 0.05
	37	B Præsepe	F.	3	16.0	18.4	20.2	26.7	28.8	30.8	37.4	39.3	42.2	29 28.87	+ 0.20	. .	+41.10	8 30 10.17	+ 2.57
	38	ε Hydræ	F.	3	57.5	0.2	1.7	8.0	9.9	12.0	18.2	19.5	22.2	39 9.91	+ 0.25	+41.04	+41.10	8 39 51.26	+ 0.06
	39	ε Leonis	F.	.	30.8	33.7	35.4	42.1	44.4	46.5	53.3	54.9	57.8	37 44.32	+ 0.18	+41.16	+41.09	9 38 25.59	− 0.08
	40	Mars I, N.	F.	.	42.0	. .	46.4	. .	. .	. .	3.4	. .	8.2	44 55.00	+ 0.21	. .	+41.09	9 45 36.30	. .
	41	Mars II, S.	F.	.	. .	. .	53.1	54.4	56.5	58.6	0.7	. .	. .	44 56.45	+ 0.21	. .	+41.09	9 45 37.75	. .
	42	Anonymous	F.	3	7.9	10.7	12.2	18.5	20.1	22.5	28.5	30.4	33.0	51 20.42	+ 0.30	. .	+41.09	9 52 1.81	. .
	43	α Leonis	F.	3	30.8	33.3	34.9	41.2	43.2	45.1	51.8	53.2	55.7	0 43.24	+ 0.23	+41.12	+41.09	10 1 24.56	− 0.04
	44	α Cygni	T.	3	58.0	1.8	3.8	12.5	15.4	18.2	26.8	28.8	32.5	36 15.31	− 0.05	+41.13	+41.06	20 36 56.32	− 0.07
20	45	Sun I, N.	T.	.	. .	. .	46.2	48.3	50.4	52.5	54.6	. .	. .	14 50.39	+ 0.28	. .	+41.06	22 15 31.73	. .
	46	Sun II, S.	T.	.	50.0	52.6	54.3	0.3	2.6	4.7	11.0	12.4	14.8	17 2.52	+ 0.28	. .	+41.06	22 17 43.86	. .
	47	Polaris	T.	.	43.0	29.0	32.0	. .	. .	. .	. .	. .	. .	10 9.23	− 8.55	. .	+41.06	1 10 41.74	+ 5.78
	48	Moon I, S.	T.	3	. .	. .	. .	. .	. .	. .	41.8	43.5	46.3	8 33.05	+ 0.19	. .	+41.05	5 9 14.29	+69.07
	49	β Tauri	T.	.	5.8	8.7	10.5	17.4	19.7	22.1	29.1	30.8	33.7	17 19.76	+ 0.14	+41.04	+41.05	5 18 0.95	0.00

2. Wire B used.
5. Seems 5 revs. wrong in N. P. D.
16. Bisections at sets B and D.
24. R. A. observed over wires B_1, C_1, C_5, and D_3.
42. Wire A used; observed for Arethusa.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′	″
1	16 36	1.9	0.1	4.9	29.4	26	. .	. .	. .	879	865	59.3	16 40 14.2	. .	+ 17.8	67 46 53.2	+ 0.5
2	18 36	8.9	5.0	9.8	27.6	24	. .	. .	. .	760	780	59.3	18 42 13.8	. .	+ 20.2	69 48 55.2	+ 3.8
3	18 36	8.9	5.0	9.8	27.6	22	. .	334	. .	422	. .	59.3	18 39 10.0	. .	+ 20.1	69 45 51.3	+ 3.9
4																	
5	14 28	1.7	0.1	4.1	28.5	26	. .	. .	. .	785	797	59.4	14 32 12.6	674	+ 15.5	65 38 49.3	+74.3
6	12 12	6.7	5.0	8.4	3.3	26	. .	500	. .	428	. .	59.4	12 16 13.1	. .	+ 13.0	63 22 47.3	+ 0.2
7	20 58	9 24.5	23.3	27.2	21.1	26	950	. .	. .	. .	930	59.4	21 2 8.6	. .	+ 23.0	72 8 52.8	− 4.6
8	20 58	9 24.5	23.3	27.2	21.1	26	. .	252	. .	178	. .	59.4	21 1 57.4	. .	+ 23.0	72 8 41.6	− 4.6
9	26 14	5.2	4.3	8.0	1.8	21	. .	318	. .	380	. .	59.5	26 16 53.9	678	+ 29.5	77 23 44.6	− 0.9
10	24 22	9 27.8	26.9	0.2	23.8	26	. .	. .	. .	134	. .	59.6	24 25 58.8	524	+ 26.2	75 32 46.2	− 0.8
11	310 14	3.6	3.8	5.4	29.1	25	540	565	588	595	528	59.7	310 17 56.8	505	− 1 7.7	1 23 10.3	+ 0.9
12	50 30	25.4	23.8	28.4	21.4	27	405	442	. .	. .	. .	60.0	50 34 17.4	. .	+ 1 10.4	101 41 49.0	− 6.9
13	49 58	26.5	24.5	29.2	22.6	26	. .	. .	. .	058	095	60.0	50 1 56.9	547	+ 1 9.1	101 9 27.2	− 6.9
14	10 28	24.6	23.1	27.3	19.6	24	. .	. .	368	. .	. .	60.0	10 31 33.3	. .	+ 10.7	61 38 5.2	+ 4.7
15	24 22	27.7	25.5	29.8	22.9	26	116	157	. .	225	260	60.0	24 26 0.1	514	+ 26.1	75 32 47.4	+ 0.2
16	331 24	10 13.5	12.0	12.3	8.2	26	. .	878	. .	899	. .	59.5	331 28 25.0	565	− 31.6	22 34 14.6	− 2.6
17	28 32	10.3	5.5	9.5	6.7	23	. .	. .	. .	380	314	59.5	28 35 27.1	. .	+ 31.7	79 42 20.0	+ 2.2
18	50 10	10 11.2	10.7	13.4	7.5	21	085	098	. .	. .	. .	59.5	50 12 56.1	. .	+ 1 10.1	101 20 27.4	− 6.8
19	49 38	8.4	9.7	11.5	6.0	19	. .	. .	. .	740	742	59.5	49 40 32.9	580	+ 1 8.8	100 48 2.9	− 6.8
20	24 20	4.5	4.2	8.0	2.4	22	510	545	. .	577	639	59.5	24 23 12.6	580	+ 26.5	75 30 0.3	− 0.4
21	10 28	7.4	7.4	10.6	4.6	23	409	436	. .	483	500	59.5	10 31 29.0	577	+ 10.8	61 38 1.0	+ 0.3
22	24 22	3.6	0.9	2.4	27.0	25	880	890	. .	960	975	59.5	24 26 0.1	. .	+ 26.5	75 32 47.8	+ 0.5
23	310 14	10.1	9.8	7.5	1.2	25	225	242	325	250	220	59.5	310 17 55.9	580	− 1 8.8	1 23 8.3	− 1.5
24	23 20	9.0	7.7	12.0	4.4	24	882	859	. .	748	704	59.3	23 24 19.8	637	+ 25.6	74 31 6.6	
25	5 52	4.1	3.7	6.4	26.9	26	. .	. .	. .	785	859	59.3	5 56 14.7	650	+ 6.2	57 2 42.1	+ 0.3
26	31 28	10.1	8.4	16.0	6.5	19	. .	118	. .	228	. .	59.3	31 30 25.9	. .	+ 36.6	82 37 23.7	+ 0.3
27	329 28	6.9	4.8	9.9	0.6	27	552	500	. .	552	690	59.1	329 32 30.7	664	− 35.1	20 38 16.8	+ 1.9
28	305 28	6.6	3.6	9.7	0.5	22	488	485	460	455	452	59.1	305 31 10.7	. .	− 1 23.4	356 36 8.5	− 0.5
29	22 20	11.5	8.9	16.5	5.8	20	810	849	. .	825	941	59.1	22 22 51.9	. .	+ 24.6	73 29 37.7	− 0.7
30	67 36	3.9	3.0	10.4	0.3	22	. .	958	. .	. .	982	59.1	67 39 17.6	. .	+ 2 24.7	118 48 3.5	− 0.9
31	15 38	7.5	4.8	12.5	1.2	28	221	. .	. .	. .	408	59.1	15 42 41.9	. .	+ 16.9	66 49 20.0	− 0.1
32																	
33	16 36	9.2	6.8	13.9	2.6	26	178	250	. .	316	356	59.0	16 40 12.1	687	+ 18.0	67 46 51.3	− 1.3
34	11 44	8.6	5.5	12.6	3.0	23	. .	132	. .	202	. .	59.0	11 47 23.9	. .	+ 12.5	62 53 57.6	− 1.7
35																	
36	62 44	8.3	6.9	12.6	0.2	24	028	074	. .	110	222	59.0	62 47 37.4	700	+ 1 56.4	113 55 55.0	− 2.0
37	18 52	3.2	29.9	6.3	26.6	22	. .	230	. .	290	. .	59.0	18 55 4.0	. .	+ 20.6	70 1 45.8	+ 3.9
38	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . .	698			
39	14 28	5.9	4.0	11.4	1.0	21	. .	. .	. .	584	598	58.9	14 30 57.1	708	+ 15.6	65 37 33.9	− 0.9
40	20 36	7.2	3.9	11.6	1.3	23	401	. .	. .	. .	551	58.9	20 39 27.1	. .	+ 22.7	71 46 11.0	− 4.5
41	20 36	7.2	3.9	11.6	1.3	24	. .	560	. .	576	. .	58.9	20 39 43.7	. .	+ 22.7	71 46 27.6	− 4.5
42	45 26	9.1	8.5	8.5	28.1	26	. .	665	. .	678	. .	58.9	45 27 41.7	. .	+ 1 1.2	96 35 4.1	
43	26 14	11.8	9.0	16.2	4.1	21	. .	. .	. .	055	080	58.9	26 16 53.7	710	+ 29.8	77 23 44.7	− 0.9
44																	
45	49 16	4.2	0.7	4.7	29.3	21	938	844	. .	. .	. .	59.7	49 19 0.0	. .	+ 1 7.6	100 26 28.8	− 6.8
46	49 48	4.9	2.9	9.5	0.0	23	. .	. .	. .	348	344	59.7	49 51 23.5	558	+ 1 8.9	100 58 53.6	− 6.8
47																	
48	20 58	9.4	4.8	15.0	4.4	30	. .	140	070	008	. .	59.7	21 3 11.0	. .	+ 22.7	72 9 54.9	
49	10 20	12.4	7.4	16.6	5.5	24	. .	933	. .	930	. .	59.7	10 23 54.6	610	+ 10.8	61 30 26.6	− 0.4

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
24	− 22 20.5	− 15 29.3
48	− 20 31.1	− 15 44.7

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	VI.	V.	VI.	VII.	VIII	XI.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Feb. 20	1	δ Orionis . . .	T.	.	25.6	28.1	29.6	35.7	37.8	39.8	46.2	47.5	50.1	24 37.82	+ 0.25	+41.03	+41.05	5 25 19.12	0.00
	2	ε Orionis . . .	T.	.	40.7	43.4	45.0	51.0	53.0	55.0	1.1	2.7	5.2	28 53.01	+ 0.25	+41.00	+41.05	5 29 34.31	+ 0.06
	3	δ Ursæ Min., S. P. .	T.	.	. .	. .	52.0	18.0	44.0	8.0	34.0	. .	. .	13 43.32	+ 3.93	. .	+41.05	18 14 28.30	+ 1.17
	4	Uranus I, S. . .	T.	4	41.2	43.9	45.5	. .	. .	. .	3.3	5.0	7.8	58 54.45	+ 0.17	. .	+41.05	6 59 35 67	. .
	5	Uranus II, N. . .	T.	.	. .	. .	50.3	52.5	54.8	56.9	59.2	. .	. .	58 54.73	+ 0.17	. .	+41.05	6 59 35.95	. .
	6	δ Geminorum . .	T.	.	24.0	26.9	28.5	35.0	37.3	39.5	46.0	47.7	50.6	11 37.28	+ 0.17	+41.09	+41.05	7 12 18.50	— 0.07
	7	B Præsepe . . .	T.	.	16.0	18.5	20.2	26.6	29.0	31.1	37.7	39.2	42.0	29 28.92	+ 0.18	. .	+41.05	8 30 10.15	+ 2.57
	8	F Præsepe . . .	T.	.	17.5	20.2	21.8	28.3	30.5	32.7	39.2	40.7	43.6	31 30.50	+ 0.18	. .	+41.05	8 32 11.73	+ 2.57
	9	ε Leonis	T.	.	31.0	33.9	35.5	42.2	44.2	46.7	53.2	55.1	57.8	37 44.40	+ 0.16	+41.10	+41.05	9 38 25.61	— 0.06
	10	Mars I, S.	T.	.	10.9	13.5	15.3	. .	. .	. .	32.3	34.0	36.7	43 23.78	+ 0.18	. .	+41.05	9 44 5.01	. .
	11	Mars II, N. . .	T.	.	. .	. .	20.4	22.7	24.9	27.0	29.1	. .	. .	43 24.81	+ 0.18	. .	+41.05	9 44 6.04	. .
	12	l Leonis	T.	.	29.4	32.0	33.5	39.9	42.0	44.1	50.3	51.8	54.5	41 41.94	+ 0.21	+41.01	+41.05	10 42 23.20	+ 0.11
	13	Anonymous . .	T.	.	18.5	21.0	22.6	28.8	30.9	33.0	39.1	40.8	43.8	2 30.94	+ 0.22	. .	+41.05	11 3 12.21	. .
	14	Europa . , . .	T.	.	19.4	21.8	23.5	29.6	31.6	34.0	39.9	41.5	44.0	6 31.70	+ 0.21	. .	+41.05	11 7 12.96	. .
	15	τ Leonis	T.	.	19.3	22.0	23.5	29.6	31.6	33.7	39.9	41.5	44.0	20 31.68	+ 0.24	+41.05	+41.05	11 21 12.97	+ 0.01
	16	Niobe	T.	.	39.2	41.9	43.6	50.0	52.0	54.1	0.7	2.4	5.1	25 52.11	+ 0.31	. .	+41 05	11 26 33.47	. .
23	17	γ Aquilæ	T.	.	7.3	9.6	11.4	17.4	19.8	21.7	27.7	29.5	52.0	39 19.60	+ 0.20	+40.92	+41.01	19 40 0.81	+ 0.10
	18	α Aquilæ	T.	.	28.6	31.3	32.9	39.1	41.5	43.3	49.4	51.0	53.5	43 41.18	+ 0.21	+40.89	+41.01	19 44 22.40	+ 0.13
24	19	Sun I, S. . . .	T.	.	51.5	54.0	55.6	1.6	3.7	5.8	12.0	13.7	16.1	30 3.78	+ 0.25	. .	+41.01	22 30 45.04	. .
	20	Sun II, N. . .	T.	.	. .	. .	11.1	13.2	15.2	17.4	19.4	. .	. .	32 15.25	+ 0.25	. .	+41.01	22 32 56.51	. .
	21	α Andromedæ . .	T.	.	40.8	43.8	45.5	52.5	54.8	57.0	4.0	5.7	8.7	0 54.76	+ 0.15	+41.01	+41.01	0 1 35.02	0.00
	22	γ Pegasi	T.	.	34.4	37.0	38.7	45.0	47.0	49.2	55.5	57.0	59.8	5 47.07	+ 0.19	+40.98	+41.01	0 6 28.27	+ 0.01
	23	Polaris	T.	.	. .	. .	11.0	37.0	59.0	25.0	50.0	. .	. . .	10 0.08	— 5.27	. .	+41.01	1 10 35.82	+ 2.64
	24	δ Ursæ Min., S. P. .	T.	.	. .	. .	53.0	18.0	44.0	11.0	36.0	. .	. .	13 44.52	+ 2.49	. .	+41.01	18 14 28.02	— 0.82
	25	γ Geminorum . .	T.	.	15.0	17.7	19.2	25.8	27.8	30.1	36.4	38.0	40.5	29 27.83	+ 0.18	+41.10	+41.01	6 30 9.02	— 0.09
	26	α Canis Majoris .	T.	.	28.8	31.6	33.2	39.5	41.5	43.8	50.3	51.8	54.5	38 41.67	+ 0.27	+41.06	+41.01	6 39 22.95	— 0.12
	27	Uranus I, N. . .	T.	3	. .	. .	. .	. .	. .	. .	40.0	41.6	44.3	58 31.07	+ 0.16	. .	+41.01	6 59 12.24	. .
	28	Uranus II, S. . .	T.	.	. .	. .	26.9	29.1	31.4	33.5	35.9	. .	. .	58 31.35	+ 0.17	. .	+41.01	6 59 12.53	. .
	29	φ Geminorum . .	T.	.	34.4	37.4	39.0	45.9	48.3	50.5	57.4	59.0	1.9	44 48.20	+ 0.16	+41.03	+41.01	7 45 29.37	— 0.04
	30	15 Argus	T.	.	4.3	7.2	8.7	15.5	17.7	20.0	26.4	28.3	31.1	1 17.69	+ 0.29	+41.05	+41.01	8 1 58.99	— 0.06
	31	B Præsepe . . .	T.	.	16.0	18.7	20.4	26.7	29.0	31.0	37.6	39.2	42.0	29 28.96	+ 0.18	. .	+41.01	8 30 10.15	+ 2.59
	32	Moon I, N. . .	T.	3	48.7	51.4	53.0	59.6	1.6	4.0	10.5	12.0	14.8	19 1.73	+ 0.19	. .	+41.01	9 19 42.93	+72.40
	33	Mars I, N. . . .	T.	.	17.8	20.7	22.2	. .	. .	. .	39.2	40.9	43.7	37 30.75	+ 0.18	. .	+41.01	9 38 11.94	. .
	34	Mars II, S. . . .	T.	.	. .	. .	27.3	29.6	31.7	33.9	36.0	. .	. .	37 31.69	+ 0.18	. .	+41.01	9 38 12.88	. .
	35	μ Leonis	T.	.	24.6	27.5	29.2	36.0	38.4	40.6	47.5	49.2	52.0	44 38.33	+ 0.16	+41.01	+41.01	9 45 19.50	+ 0.05
25	36	Sun I, S. . . .	N.	3	38.0	40.7	42.2	48.3	50.4	52.5	58.6	0.2	2.9	33 50.42	. .	. .	. .	. . . .	. .
	37	Sun II, N. . . .	N.	3	49.2	51.8	53.3	59.5	1.6	3.7	10.0	11.3	14.0	36 1.60	. .	. .	. .	. . . .	. .
26	38	N Præsepe . . .	F.	3	55.7	58.4	0.1	6.7	8.8	11.2	17.5	19.2	22.0	30 8.84	+ 0.18	. .	+41.17	8 30 50.19	+ 2.61
	39	E Præsepe . . .	F.	3	16.5	19.2	20.9	27.3	29.6	31.8	38.4	40.0	42.7	31 29.60	+ 0.18	. .	+41.17	8 32 10.95	+ 2.60
	40	κ Cancri	F.	3	45.9	48.5	50.2	56.4	58.5	0.6	6.9	8.4	11.0	59 58.49	+ 0.22	+41.19	+41.17	9 0 39.88	— 0.02
	41	α Hydræ	F.	.	16.4	19.0	20.5	26.7	28.7	30.7	36.9	38.5	41.0	20 28.72	+ 0.28	+41.08	+41.17	9 21 10.17	+ 0.09
	42	Mars I, S. . . .	F.	.	30.7	33.6	35.1	. .	. .	. .	52.4	54.0	56.6	34 43.73	+ 0.19	. .	+41.17.	9 35 25.09	. .
	43	Mars II, N. . .	F.	.	. .	. .	40.2	42.6	44.7	46.8	49.0	. .	. .	34 44.65	+ 0.19	. .	+41.17	9 35 26.01	. .
	44	μ Leonis	F.	.	24.3	27.1	28.9	35.7	37.9	40.3	47.2	49.0	51.8	44 38.02	+ 0.16	+41.32	+41.17	9 45 19.35	— 0.10
	45	δ Crateris . . .	F.	3	54.7	57.4	59.0	5.3	7.2	9.5	15.8	17.5	20.0	12 7.38	+ 0.30	+41.09	+41.17	11 12 48.85	+ 0.08
	46	Moon II, S. . .	F.	3	55.5	58.1	59.7	5.9	8.0	10.1	16.4	18.0	20.6	26 8.03	+ 0.23	. .	+41.17	11 26 49.43	—70.34
27	47	Polaris	T.	.	. .	. .	. .	. .	. .	23.0	48.0	. .	. .	9 59.10	— 7.05	. .	+41.21	1 10 33.26	+ 2.21
	48	δ Ursæ Min., S. P. .	T.	.	. .	. .	54.0	19.0	44.0	9.0	35.0	. .	. .	13 44.32	+ 3.32	. .	+41.23	18 14 28.85	+ 0.61
	49	γ Geminorum . .	T.	.	14.8	17.4	19.1	25.4	27.5	29.6	36.0	37.6	40.4	29 27.53	+ 0.27	+41.26	+41.23	6 30 9.03	— 0.03

13. Observed for Eurydice.
13.14.16. Wire A used.
32.46. R. A. observed over wires III–V.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	39 14	8.0	3.7	12.6	2.4	21	. .	580	. .	590	. .	59.7	39 16 59.5	. .	+ 48.1	90 24 8.8	− 0.6
2	40 6	8.4	4.9	13.5	4.0	26	. .	682	. .	830	. .	59.7	40 10 19.5	. .	+ 49.7	91 17 30.4	− 0.8
3	305 28	6.3	2.4	9.4	29.1	22	532	502	570	482	540	59.7	305 31 10.0	627	− 1 22.6	356 36 10.0	+ 1.2
4	15 40	12.9	7.8	17.4	5.6	19	. .	380	. .	. .	. .	59.7	15 42 30.9	. .	+ 16.7	66 49 8.8	− 0.1
5	15 40	12.9	7.8	17.4	5.6	19	. .	. .	. .	150	. .	59.7	15 42 26.1	. .	+ 16.7	66 49 4.0	− 0.1
6	16 36	8.5	3.5	13.4	0.6	26	. .	296	. .	379	. .	59.7	16 40 12.1	641	+ 17.7	67 46 51.0	− 1.6
7																	
8	18 36	10.3	5.5	15.0	4.0	22	. .	170	. .	166	. .	59.7	18 39 10.5	. .	+ 20.1	69 45 51.8	+ 4.1
9	14 26	7.0	1.5	10.5	29.4	29	. .	394	. .	400	. .	59.7	14 30 57.0	670	+ 15.5	65 37 33.7	− 1.0
10	20 30	10.4	5.8	14.8	3.4	21	820	. .	. .	. .	920	59.7	20 33 6.0	. .	+ 22.4	71 39 49.6	− 4.5
11	20 30	10.4	5.8	14.8	3.4	22	. .	800	. .	920	. .	59.7	20 33 21.0	. .	+ 22.4	71 40 4.6	− 4.5
12	27 34	5.5	1.5	9.5	28.8	29	. .	. .	631	. .	. .	59.7	27 38 59.7	682	+ 31.3	78 45 52.2	− 1.1
13	30 14	10.4	5.6	14.8	3.5	24	. .	598	. .	. .	. .	59.7	30 15 13.8	. .	+ 35.0	81 22 10.0	
14	27 6	7.6	4.0	13.0	1.0	24	. .	510	. .	548	. .	59.7	27 7 10.2	. .	+ 30.7	78 14 2.1	− 2.1
15	35 14	12.1	8.8	16.6	7.5	26	. .	. .	930	. .	. .	59.7	35 18 25.8	. .	+ 42.4	86 25 29.4	+ 0.8
16	58 14	7.5	2.5	12.5	1.6	16	. .	440	. .	510	. .	59.7	58 13 6.8	689	+ 1 36.5	109 21 4.5	− 4.9
17	28 32	7.4	5.5	12.6	3.3	23	. .	. .	. .	188	. .	61.0	28 35 25.2	769	+ 33.3	79 42 19.7	+ 1.4
18	30 18	5.0	2.8	10.2	1.2	24	. .	. .	324	. .	. .	61.0	30 21 40.8	. .	+ 35.8	81 28 37.8	+ 1.9
19	48 20	0.7	29.4	4.6	26.1	24	450	350	. .	. .	. .	61.0	48 23 37.6	715	+ 1 7.9	99 31 0.1	− 6.6
20	47 48	3.7	1.8	8.3	29.7	22	. .	. .	. .	672	674	61.0	47 51 13.7	. .	+ 1 6.6	98 58 41.5	− 6.6
21	10 28	2.9	0.0	7.5	27.1	23	. .	843	. .	910	. .	61.0	10 31 31.2	. .	+ 11.1	61 38 3.5	+ 2.0
22	24 22	6.4	2.6	10.0	0.4	25	. .	604	. .	540	. .	61.0	24 26 0.0	693	+ 27.2	75 32 48.4	+ 0.6
23	310 14	4.8	1.8	8.0	28.5	25	765	796	870	828	788	61.0	310 18 2.1	687	− 1 10.6	1 23 12.7	+ 2.0
24	305 28	1.6	28.8	5.5	25.3	22	. .	740	648	708	. .	61.3	305 31 11.7	778	− 1 25.6	356 36 7.3	− 0.7
25	22 16	2.4	28.8	7.5	26.0	37	. .	. .	. .	110	140	61.3	22 22 52.8	. .	+ 25.2	73 29 39.2	+ 0.8
26	55 22	2.0	29.3	7.0	27.0	21	. .	046	. .	085	. .	61.3	55 24 47.9	. .	+ 1 28.0	106 32 37.7	+ 2.3
27	15 38	0.4	26.6	4.4	24.2	25	640	. .	. .	. .	730	61.3	15 41 56.3	. .	+ 17.2	66 48 34.7	− 0.1
28	15 38	0.4	26.6	4.4	24.2	25	. .	950	. .	928	. .	61.3	15 42 0.0	. .	+ 17.2	66 48 38.4	− 0.1
29	11 44	5.3	1.5	9.5	29.5	23	. .	266	. .	302	. .	61.4	11 47 24.6	. .	+ 12.8	62 53 58.6	− 0.4
30	62 44	0.2	28.0	6.1	25.0	24	. .	380	. .	423	. .	61.4	62 47 37.2	797	+ 1 59.1	113 55 57.5	− 0.4
31	18 52	3.5	0.5	2.5	27.8	21	. .	986	. .	214	. .	61.4	18 55 3.6	. .	+ 21.1	70 1 45.9	+ 4.1
32	23 20	9 24.0	21.3	29.6	18.4	27	. .	023	161	210	. .	61.4	23 24 12.6	801	+ 26.7	74 31 0.5	. .
33	20 6	1.5	28.0	5.8	26.6	20	936	. .	. .	. .	990	61.4	20 8 45.8	. .	+ 22.6	71 15 29.6	− 4.4
34	20 6	1.5	28.0	5.8	26.6	.	. .	980	. .	904	. .	61.4	20 9 0.6	. .	+ 22.6	71 15 44.4	− 4.4
35	12 12	9 28.5	23.4	2.5	22.1	26	. .	910	. .	980	. .	61.4	12 16 13.2	804	+ 13.4	63 22 47.8	+ 1.3
36	47 58	27.3	26.0	3.4	23.1	23	262	322	. .	. .	. .	61.4	48 1 18.3	. .	+ 1 8.4	99 8 47.9	− 6.6
37	47 26	9 28.3	26.8	5.1	23.8	22	. .	. .	. .	177	200	61.4	47 29 1.8	730	+ 1 7.1	98 36 30.1	− 6.6
38	18 10	4.2	0.1	8.2	28.9	.	318	312	. .	. .	. .	62.0	18 13 40.7	682	+ 19.7	69 20 21.6	+ 4.4
39	18 16	8.2	4.2	10.9	1.5	28	. .	. .	. .	308	270	62.0	18 20 43.2	. .	+ 19.8	69 27 24.2	+ 4.4
40	27 38	12.8	8.5	8.0	29.4	23	918	985	. .	068	126	62.0	27 41 39.7	687	+ 31.4	78 48 32.3	− 0.4
41	46 54	12.8	7.6	12.2	3.7	26	. .	784	. .	848	. .	62.0	46 58 24.1	. .	+ 1 4.2	98 5 49.5	+ 7.0
42	19 54	11.5	6.3	7.0	3.7	27	500	. .	. .	. .	588	62.0	19 58 33.6	. .	+ 21.8	71 5 16.6	− 4.3
43	19 54	11.5	6.3	7.0	3.7	26	. .	598	. .	634	. .	62.0	19 58 19.2	698	+ 21.8	71 5 2.2	− 4.3
44	12 12	9.1	4.2	6.2	1.9	26	. .	414	. .	487	. .	62.0	12 16 15.0	697	+ 13.1	63 22 49.3	+ 2.9
45	52 52	0.2	27.1	5.4	25.3	28	. .	452	. .	550	. .	62.0	52 56 40.3	718	+ 1 19.8	104 4 21.3	+ 2.2
46	32 52	0.6	26.4	5.1	25.2	21	068	242	. .	412	675	62.0	32 54 50.8	722	+ 39.1	84 1 51.1	
47																	
48	305 28	25.6	24.4	1.5	20.8	23	. .	024	060	052	. .	62.7	305 31 13.7	763	− 1 25.3	356 36 9.6	+ 2.2
49	22 20	9 28.6	28.5	7.8	27.3	21	. .	214	. .	350	. .	62.7	22 22 51.8	. .	+ 25.2	73 29 38.2	− 0.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
32	−24 4.8	+16 41.5
46	−33 9.4	−16 45.4

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Feb. 27	1	α Canis Majoris .	T.	.	28.6	31.1	32.7	39.2	41.2	43.4	49.8	51.3	54.0	38 41.26	+ 0.39	+41.29	+41.23	6 39 22.88	− 0.13
	2	ε Canis Majoris .	T.	.	33.8	36.8	38.6	45.5	47.8	50.0	57.0	58.8	1.8	52 47.79	+ 0.45	+41.21	+41.23	6 53 29.47	0.00
	3	Uranus I, S. . .	T.	.	2.0	4.7	6.5	. .	. .	. .	24.3	25.9	28.7	58 15.35	+ 0.24	. .	+41.23	6 58 56.82	. .
	4	Uranus II, N. . .	T.	.	. .	. .	11.3	13.4	15.7	17.9	20.1	. .	. .	58 15.67	+ 0.24	. .	+41.23	6 58 57.14	. .
	5	Mars I, N. . . .	T.	.	10.2	12.8	14.4	. .	. .	. .	31.5	33.2	35.9	33 23.00	+ 0.26	. .	+41.24	9 34 4.50	. .
	6	Mars II, S. . .	T.	.	. .	. .	19.6	22.0	24.1	26.2	28.4	. .	. .	33 24.05	+ 0.26	. .	+41.24	9 34 5.55	. .
	7	ε Leonis	T.	.	30.8	33.5	35.4	42.0	44.2	46.5	53.2	54.8	57.8	37 44.24	+ 0.24	+41.19	+41.24	9 38 25.72	+ 0.04
	8	Europa	T.	3	18.2	20.8	22.4	28.7	30.7	32.9	39.0	40.5	43.4	1 30.73	+ 0.28	. .	+41.25	11 2 12.26	. .
	9	δ Leonis	T.	.	14.7	17.5	19.1	25.5	27.7	29.8	36.6	38.2	41.0	6 27.79	+ 0.25	+41.27	+41.25	11 7 9.29	− 0.04
	10	Niobe	T.	3	. .	. .	16.8	19.2	21.2	23.2	25.5	. .	. .	18 21.17	+ 0.41	. .	+41.25	11 19 2.83	. .
	11	η Virginis . . .	T.	.	19.5	22.0	23.6	29.5	31.6	33.7	39.9	41.4	43.9	12 31.68	+ 0.33	+41.20	+41.25	12 13 13.26	+ 0.04
	12	Moon II, S. . .	T.	3	31.9	34.3	36.0	42.2	44.2	46.4	52.7	54.1	56.8	25 44.31	+ 0.33	. .	+41.25	12 26 25.89	−69.33
Mar. 1	13	Sun I, N. . . .	T.	.	39.4	41.9	43.5	49.8	51.8	53.9	59.8	1.5	4.1	48 51.74	+ 0.30	. .	+41.37	22 49 33.41	. .
	14	Sun II, S. . . .	T.	.	50.2	52.6	54.4	0.3	2.5	4.6	10.8	12.2	15.0	51 2.51	+ 0.30	. .	+41.37	22 51 44.18	. .
	15	α Andromedæ . .	T.	3	40.4	43.1	45.0	52.1	54.2	56.8	3.7	5.3	8.0	0 54.29	+ 0.22	+41.39	+41.37	0 1 35.88	− 0.02
	16	γ Pegasi	T.	3	34.0	36.7	38.2	44.8	46.7	48.8	55.1	57.0	59.4	5 46.74	+ 0.25	+41.23	+41.37	0 6 28.36	+ 0.12
	17	Polaris	T.	3	. .	. .	5.0	29.0	55.0	17.0	41.0	. .	. .	9 53.08	− 3.85	. .	+41.37	1 10 30.60	+ 0.72
	18	α Arietis	T.	3	51.8	54.6	56.3	2.9	5.0	7.3	14.0	15.5	18.4	59 5.09	+ 0.23	+41.35	+41.37	1 59 46.69	+ 0.03
	19	Uranus I, S. . .	T.	3	52.6	55.3	57.0	. .	. .	. .	14.7	16.5	19.3	58 5.90	+ 0.23	. .	+41.37	6 58 47.50	. .
	20	Uranus II, N. . .	T.	3	. .	. .	1.9	4.2	6.3	8.4	10.7	. .	. .	58 6.29	+ 0.23	. .	+41.37	6 58 41.37	. .
	21	δ Geminorum . .	T.	3	23.6	26.3	28.0	34.6	36.9	39.0	45.8	47.4	49.9	11 36.85	+ 0.23	+41.37	+41.37	7 12 18.43	− 0.03
	22	φ Geminorum . .	T.	3	33.9	36.7	38.6	45.5	47.8	49.9	57.0	58.5	1.5	44 47.71	+ 0.17	+41.46	+41.37	7 45 29.25	− 0.13
	23	λ Ursæ Min., S. P. .	T.	2	. .	. .	27.0	42.0	53.0	58.0	19.0	. .	. .	53 52.20	+ 5.55	. .	+41.37	19 54 39.12	− 0.62
	24	15 Argus	T.	3	3.8	6.6	8.2	15.1	17.3	19.6	26.3	28.0	30.7	1 17.29	+ 0.30	+41.38	+41.37	8 1 58.96	− 0.03
	25	N Præsepe . . .	T.	3	55.5	58.2	0.1	6.5	8.6	10.9	17.6	19.2	21.8	30 8.71	+ 0.20	. .	+41.37	8 30 50.28	+ 2.63
	26	E Præsepe . . .	T.	3	16.5	19.1	20.7	27.3	29.5	31.6	38.1	39.8	42.4	31 29.44	+ 0.20	. .	+41.37	8 32 11.01	+ 2.63
	27	ε Hydræ	T.	4	57.2	59.8	1.4	7.5	9.6	11.6	17.7	19.3	21.8	39 9.54	+ 0.23	+41.37	+41.37	8 39 51.14	0.00
	28	Mars, S. . . .	T.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	29	Mars, N. . . .	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
2	30	α Cygni	T.	3	58.0	1.6	3.8	12.5	15.4	18.1	26.9	29.2	32.6	36 15.34	+ 0.12	. .	+41.24	20 36 56.70	+ 0.09
	31	ζ Cygni	T.	.	25.0	27.8	29.5	36.6	39.0	41.3	48.3	50.2	53.1	6 38.98	+ 0.16	+41.24	+41.24	21 7 20.38	− 0.01
	32	Mercury II, C. .	T.	3	56.7	59.5	1.2	7.3	9.3	11.5	17.7	19.3	22.0	35 9.39	+ 0.22	. .	+41.24	21 35 50.85	− 0.33
3	33	Sun I, S. . . .	T.	.	7.5	10.1	11.7	17.7	19.8	21.9	28.0	29.6	32.1	56 19.82	+ 0.21	. .	+41.24	22 57 1.27	. .
	34	Sun II, N. . . .	T.	3	17.8	20.2	21.9	28.0	30.1	32.2	38.3	39.9	42.2	58 30.07	+ 0.21	. .	+41.24	22 59 11.52	. .
4	35	Saturn I, N. . .	N.	1	23.8	26.6	28.4	. .	. .	. .	45.6	47.4	50.0	2 36.97	+ 0.20	. .	+41.18	17 3 18.35	. .
	36	Saturn II, S. . .	N.	1	. .	. .	33.7	35.9	37.9	40.2	42.2	. .	. .	2 37.97	+ 0.20	. .	+41.18	17 3 19.35	. .
	37	Moon II, S. . .	N.	2	48.5	51.2	52.9	59.6	1.7	3.9	10.5	12.4	15.0	9 1.74	+ 0.20	. .	+41.18	17 9 43.12	−67.54
	38	b Ophiuchi . . .	N.	2	27.4	30.0	31.7	38.5	40.7	42.9	49.6	51.3	54.2	17 40.70	+ 0.20	+41.08	+41.18	17 18 22.08	+ 0.10
	39	μ Herculis . . .	N.	3	24.3	27.0	28.8	35.8	38.0	40.4	47.2	49.1	51.9	40 38.06	+ 0.20	+41.24	+41.18	17 41 19.44	− 0.06
	40	μ Sagittarii . . .	N.	2	. .	. .	9.5	11.5	13.6	15.9	18.0	. .	. .	5 13.69	+ 0.20	+41.23	+41.18	18 5 55.07	− 0.07
	41	δ Ursæ Minoris .	N.	3	. .	. .	37.5	13.0	46.5	21.7	56.0	. .	. .	13 46.82	+ 0.74	. .	+42.18	18 14 29.74	− 3.95
	42	α Cygni	F.	3	. .	. .	9.5	12.4	15.2	18.0	21.1	. .	. .	36 15.23	+ 0.21	. .	+41.16	20 36 56.60	− 0.06
	43	β Cephei	F.	3	. .	. .	2.9	7.6	13.7	19.9	25.4	. .	. .	26 13.88	+ 0.12	. .	+41.16	21 26 55.16	+ 0.18
	44	Mercury II, C. .	F.	3	40.8	43.4	45.2	51.3	53.5	55.5	1.7	3.4	5.8	35 53.40	+ 0.19	. .	+41.16	21 36 34.75	− 0.32
5	45	Sun I, N. . . .	F.	.	33.3	35.8	37.2	43.5	48.7	47.8	53.9	55.4	58.9	3 45.62	+ 0.31	. .	+41.16	23 4 27.09	. .
	46	Sun II, S. . . .	F.	.	. .	. .	. .	. .	. .	. .	4.0	5.6	8.3	5 55.90	+ 0.31	. .	+41.16	23 6 37.37	. .
	47	Polaris	F.	2.1	. .	. .	59.0	25.0	49.0	. .	39.0	. .	. .	9 48.58	− 1.48	. .	+41.16	1 10 28.26	+ 0.15
	48	α Arietis	F.	3	. .	. .	0.9	2.9	5.3	7.4	9.7	. .	. .	59 5.23	+ 0.24	+41.15	+41.16	1 59 46.63	+ 0.02
	49	α Canis Minoris .	F.	3	33.3	36.0	37.6	43.6	45.6	47.5	53.8	55.5	58.0	31 45.66	+ 0.26	+41.30	+41.16	7 32 27.08	− 0.20
	50	β Geminorum . .	F.	.	23.1	25.9	27.7	34.7	37.0	39.1	46.4	48.0	50.9	36 36.98	+ 0.23	+41.24	+41.16	7 37 18.37	− 0.08

8.10. Wire A used.
12. R. A. observed over wires II–VI.
17. One rev. added to N. P. D.
37. Bisections at wires II–VI.
41. Counting clock 1^s slow.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Dist, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	55 22	9 18.6	17.8	29.5	18.0	21	. .	678	. .	660	. .	62.7	55 24 48.0	778	+ 1 28.6	106 32 37.8	+ 2.1
2	67 36	7.6	6.5	16.6	6.4	22	. .	192	. .	278	. .	62.7	67 39 14.8	778	+ 2 28.0	118 48 4.0	− 1.6
3	15 38	3.8	3.2	11.0	2.3	24	084	. .	. .	. .	316	62.7	15 41 41.2	. .	+ 17.2	66 48 19.6	− 0.1
4	15 38	3.8	3.2	11.0	2.3	24	. .	086	. .	950	. .	62.7	15 41 38.2	. .	+ 17.2	66 48 16.6	− 0.1
5	19 50	9.3	6.6	13.4	5.8	22	970	. .	. .	. .	132	62.7	19 53 27.2	. .	+ 22.3	71 0 10.7	− 4.3
6	19 50	9.3	6.6	13.4	5.8	24	. .	020	. .	944	. .	62.7	19 53 41.3	. .	+ 22.3	71 0 24.8	− 4.3
7	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . .	812			
8	26 16	1.3	28.7	7.8	27.8	29	. .	. .	. .	163	. .	62.7	26 18 18.7	. .	+ 30.6	77 25 10.5	− 2.0
9																	
10	59 10	4.0	7.0	12.5	1.8	15	. .	. .	. .	000	010	62.7	59 8 47.1	827	+ 1 43.4	110 16 51.7	− 5.1
11	38 46	3.3	3.4	9.0	1.0	22	. .	508	. .	640	. .	62.7	38 49 15.1	. .	+ 49.9	89 56 26.2	+ 1.3
12	38 10	10 7.0	6.0	13.5	3.5	25	460	240	150	023	988	62.7	38 13 56.4	833	+ 48.9	89 21 6.5	
13	45 54	10 19.9	19.2	27.5	16.5	26	511	600	. .	. .	. .	62.0	45 58 32.1	. .	+ 1 2.7	97 5 56.0	− 6.4
14	46 26	10 17.2	17.2	23.6	14.5	28	. .	. .	. .	001	118	62.0	46 30 51.8	735	+ 1 3.8	97 38 16.8	− 6.4
15	10 28	11.4	10.5	18.5	9.7	23	. .	042	. .	110	. .	62.0	10 31 30.6	748	+ 11.3	61 38 3.1	+ 0.7
16	24 22	5.7	4.5	12.3	3.4	25	. .	. .	. .	341	388	62.0	24 25 58.7	748	+ 27.6	75 32 47.5	− 0.7
17	310 14	7.1	8.8	16.0	5.8	24	332	350	388	376	432	62.0	310 17 47.4	722	− 1 11.2	1 23 12.7	+ 0.7
18	16 0	10.5	10.8	18.7	8.2	25	. .	. .	. .	953	993	62.0	16 4 9.6	708	+ 17.4	67 10 48.2	+ 3.1
19	15 38	11.2	8.3	17.2	6.0	23	014	. .	. .	. .	062	62.0	15 41 28.3	755	+ 17.1	66 48 6.6	− 0.1
20	15 38	11.2	8.3	17.2	6.0	22	. .	588	. .	702	. .	62.0	15 41 22.1	. .	+ 17.1	66 48 0.4	− 0.1
21	16 36	6.3	3.2	12.2	2.1	26	. .	. .	. .	190	259	62.0	16 40 11.3	758	+ 18.3	67 46 50.8	− 1.4
22	11 44	8.1	4.3	13.7	3.3	22	. .	804	. .	872	. .	62.0	11 47 21.8	. .	+ 12.7	62 53 55.7	− 2.9
23	307 46	5.7	5.0	10.7	0.7	24	380	370	372	410	372	62.0	307 49 43.1	760	− 1 18.4	358 54 45.9	− 1.1
24	62 44	10 1.0	29.0	8.5	28.1	24	. .	320	. .	341	. .	62.0	62 47 38.6	760	+ 1 58.1	113 55 57.9	− 0.8
25	18 10	1.7	4.0	8.1	28.0	24	288	300	. .	. .	. .	62.0	18 13 40.5	. .	+ 20.1	69 20 21.8	+ 4.5
26	18 16	29.7	27.0	4.5	23.4	28	. .	. .	. .	620	652	62.0	18 20 40.9	. .	+ 20.2	69 27 22.3	+ 4.8
27	31 56	6.7	4.2	12.8	1.8	22	. .	690	. .	790	. .	62.0	31 59 19.2	760	+ 38.1	83 6 18.5	− 0.4
28	19 40	7.8	4.5	12.3	2.0	27	. .	. .	. .	838	. .	62.0	19 44 36.9	758	+ 21.9	70 51 20.0	− 4.2
29	19 40	7.8	4.5	12.3	2.0	28	. .	. .	. .	. .	825	62.0	19 44 51.8	. .	+ 21.9	70 51 34.9	− 4.2
30	354 2	6.9	3.9	9.6	0.8	21	. .	921	. .	060	. .	61.1	354 5 6.0	680	− 6.2	45 11 21.0	+ 0 7
31	9 10	4.6	0.5	10.4	27.0	18	. .	408	. .	536	. .	61.1	9 12 10.0	. .	+ 9.7	60 18 40.9	+ 0.2
32	51 8	9 27.6	22.6	2.6	21.4	26	630	820	. .	080	082	61.1	51 12 11.4	666	+ 1 14.1	102 19 46.7	− 9.8
33	45 42	2.5	29.5	8.4	27.3	21	878	. .	. .	. .	. .	61.1	45 45 1.0	. .	+ 1 9.8	96 52 23.0	− 6.3
34	45 10	9 24.5	21.8	1.0	20.5	21	. .	. .	. .	640	630	61.1	45 12 49.0	640	+ 59.7	96 20 9.9	− 6.3
35	59 58	23.7	20.5	29.7	18.1	.	908	. .	. .	. .	. .	61.3	60 0 53.1	. .	+ 1 49.1	111 9 3.4	− 0.8
36	59 58	23.7	20.5	29.7	18.1	23	. .	070	. .	. .	. .	61.3	60 1 10.8	. .	+ 1 49.1	111 9 21.1	− 0.8
37	51 18	10 3.3	29.3	10.8	29.8	20	430	391	525	. .	720	61.3	58 20 41.5	910	+ 1 42.2	109 28 44.9	
38	62 52	9 26.9	24.8	3.7	22.3	20	275	219	. .	345	422	61.3	62 54 31.6	911	+ 3 3.0	114 2 55.8	− 4.4
39	11 2	6.6	3.9	11.4	29.1	24	. .	. .	141	. .	. .	61.3	11 5 38.7	. .	+ 12.4	62 12 12.3	− 1.0
40	59 54	28.0	27.6	4.0	22.0	22	. .	660	. .	722	. .	61.3	59 57 9.1	912	+ 1 48.8	111 5 19.1	− 1.0
41	312 14	7.7	7.2	11.1	2.0	28	. .	. .	466?	. .	. .	61.3	312 18 46.6	. .	− 1 9.3	3 23 58.5	+ 4.3
42	354 2	5.3	1.4	7.4	27.1	22	098	175	. .	286	288	61.4	354 5 7.4	872	− 6.5	45 11 23.1	+ 1.3
43																	
44	51 34	4.3	1.6	9.8	29.4	25	. .	. .	. .	010	032	61.4	51 37 49.7	848	+ 1 18.5	102 45 29.4	−12.7
45	44 22	20.5	15.8	25.8	13.7	28	. .	628	. .	. .	. .	61.5	44 26 31.6	. .	+ 59.6	95 33 52.4	− 6.2
46	44 54	13.6	11.0	20.0	9.4	29	. .	. .	. .	758	758	61.5	44 58 43.5	750	+ 1 0.7	96 6 5.4	− 6.2
47	310 14	2.1	29.6	6.9	27.1	26	035	073	032	. .	970	61.5	310 18 4.1	750	− 1 11.6	1 23 13.7	+ 0.6
48	16 0	2.4	28.3	6.9	25.4	21	558	575	. .	658	698	61.5	16 2 56.2	732	+ 17.4	67 9 34.8	− 1.7
49	33 16	10 0.9	29.4	7.0	26.7	24	. .	. .	. .	482	498	61.7	33 19 39.4	795	+ 40.4	84 26 41.0	− 0.3
50	10 30	9 27.0	24.0	1.6	21.6	22	. .	662	. .	813	. .	61.7	10 33 8.6	. .	+ 11.5	61 39 41.3	+ 0.3

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
38	30.269	14.1	66.0

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
12	− 37 32.3	− 16 38.6
37	− 47 57.1	− 15 25.6

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Mar. 5	1	φ Geminorum . .	F.	3	34.3	36.9	38.7	45.7	47.9	50.1	57.0	58.8	1.7	44 47.90	+ 0.23	+41.16	+41.16	7 45 29.29	− 0.04
	2	λ Ursæ Minoris, S.P.	F.	.	. .	. .	31.0	42.0	55.0	10.0	. .	. .	. .	53 56.18	+ 2.43	. .	+41.16	19 54 39.77	− 3.87
	3	15 Argus	F.	.	4.1	6.9	8.6	15.4	17.5	19.7	26.4	28.0	30.8	1 17.49	+ 0.31	+41.12	+41.16	8 1 58.96	+ 0.02
	4	N Præsepe . . .	F.	3	55.9	58.6	0.2	6.2	8.6	10.9	17.7	19.1	21.8	30 8.78	+ 0.24	. .	+41.16	8 30 50.18	+ 2.67
	5	E Præsepe . . .	F.	3	16.5	19.2	21.1	27.4	29.7	32.0	38.1	39.8	42.6	31 29.60	+ 0.24	. .	+41.16	8 32 11.00	+ 2.66
	6	ε Hydræ	F.	3	57.4	0.0	1.4	7.6	9.7	11.8	17.9	19.6	22.0	39 9.71	+ 0.26	+41.14	+41.16	8 39 51.13	+ 0.02
	7	σ Ursæ Majoris . .	F.	.	. .	. .	. .	. .	15.5	21.0	31.9	35.7	42.4	58 10.30	+ 0.13	. .	+41.16	8 58 51.59	− 0.09
	8	α Hydræ	F.	.	16.3	18.8	20.4	26.6	28.6	30.7	37.0	38.5	41.0	20 28.66	+ 0.29	+41.14	+41.16	9 21 10.11	+ 0.02
	9	Mars I, S. . . .	F.	.	54.4	57.0	58.8	. .	. .	. .	16.0	17.8	20.4	26 7.40	+ 0.25	. .	+41.16	9 26 48.81	. .
	10	Mars II, N. . .	F.	.	. .	. .	4.0	6.3	8.5	10.6	12.7	. .	. .	26 8.41	+ 0.25	. .	+41.16	9 26 49.82	. .
	11	μ Herculis . . .	F.	3	24.4	27.4	29.1	36.0	38.1	40.8	47.4	49.1	52.1	40 38.27	+ 0.24	+41.02	+41.16	17 41 19.67	+ 0.14
	12	Moon II, S. . .	F.	3	. .	. .	11.5	13.8	15.8	18.1	20.4	. .	. .	4 15.91	+ 0.31	. .	+41.16	18 4 57.38	−67.11
	13	δ Ursæ Minoris .	F.	3	. .	. .	. .	. .	49.0	23.5	. .	. .	. .	13 49.00	− 0.46	. .	+41.16	18 13 29.68	− 0.78
6	14	Sun I, N. . . .	T.	.	15.9	18.5	20.0	26.3	28.2	30.2	36.5	37.9	40.5	7 28.22	+ 0.16	. .	+41.06	23 8 9.44	. .
	15	Sun II, S. . . .	T,	.	. .	. .	. .	38.2	40.1	42.4	46.4	48.0	50.6	9 38.23	+ 0.16	. .	+41.06	23 10 19.45	. .
	16	δ Ursæ Minoris .	T.	2	. .	. .	. .	. .	. .	. .	5.0	32.0	. .	13 48.25	+ 2.08	. .	+41.06	18 14 31.39	+ 0.61
	17	α Lyræ	T.	.	32.5	35.9	37.8	45.6	48.3	51.0	58.7	0.7	4.1	31 48.29	+ 0.23	+41.01	+41.06	18 32 29.57	+ 0.05
	18	β Lyræ	T.	.	18.0	21.0	22.8	30.2	32.5	35.0	42.2	44.2	47.2	44 32.57	+ 0.22	+41.12	+41.06	18 45 13.85	− 0.04
	19	Moon II . . .	T.	3	25.1	28.0	29.8	36.3	38.5	40.8	47.4	49.1	52.0	58 38.56	+ 0.14	. .	+41.06	18 59 19.76	−66.40
8	20	Moon II . . .	N.	1	44.0	57.3	. .	. .	. .	. .	. .	49.7	3.3	43 23.72	+ 0.06	. .	+41.35	20 44 5.13	−64.32
	21	Moon II . . .	F.	2	10.7	13.2	15.1	19.2	23.6	28.1	32.3	34.1	37.0	43 23.70	+ 0.06	. .	+41.28	20 44 5.04	−64.32
	22	ε Pegasi	F.	2	49.1	51.6	53.3	. .	. .	. .	. .	11.2	13.9	37 1.48	+ 0.10	+42.28	. .	. . . .	. .
9	23	Sun I, S. . . .	F.	2	20.6	22.7	24.8	30.8	32.6	34.7	40.7	42.2	44.5	18 32.62	+ 0.08	. .	+41.28	23 19 13.98	. .
	24	Sun II, N. . . .	F.	.	30.6	32.9	34.5	40.6	42.7	44.7	50.9	52.6	55.1	20 42.73	+ 0.08	. .	+41.28	23 21 24.09	. .
	25	Polaris	F.	2	. .	. .	. .	21.0	44.0	. .	. .	. .	. .	9 44.15	+ 0.99	. .	+41.28	. . . .	. .
10	26	δ Ursæ Minoris, S.P.	F.	..	34.0	7.0	58.0	23.0	. .	. .	. .	. .	. .	13 49.52	+ 1.63	. .	. .	. . . .	. .
	27	Mercury, C. . .	N.	1	26.9	29.6	31.0	37.4	39.6	41.6	48.0	49.6	52.3	46 39.56	+ 0.26	. .	+41.19	21 47 21.01	− 0.13
	28	α Aquarii . . .	N.	1	. .	. .	16.7	18.6	20.7	22.7	24.8	. .	. .	58 20.69	+ 0.25	+41.02	+41.19	21 59 2.13	+ 0.16
11	29	Sun I, S. . . .	N.	2	42.3	44.6	46.1	52.4	54.5	56.4	2.8	4.1	6.8	25 54.44	+ 0.16	. .	+41.19	23 26 35.79	. .
	30	Sun II, N. . . .	N.	3	51.7	54.2	55.7	2.0	4.0	6.0	12.3	13.6	16.1	28 3.96	+ 0.16	. .	+41.19	23 28 45.31	. .
	31	51 (H) Cephei . .	N.	2	. .	. .	. .	. .	38.5	. .	. .	0.0	. .	40 38 65	− 1.26	. .	+41.20	6 38 18.59	+ 0.75
	32	α Canis Majoris .	N.	2	. .	. .	37.0	39.0	41.2	43.4	45.1	. .	. .	38 41 13	+ 0.26	+41.34	+41.20	6 39 22.59	− 0.21
	33	δ Geminorum . .	N.	2	23.5	26.3	28.0	34.7	36.9	39.1	45.6	47.3	50.0	11 36.82	+ 0.22	+41.24	+41.21	7 12 18.25	− 0.06
	34	Mercury, C. . .	F.	1	15.8	18.3	20.1	26.5	28.5	30.6	36.9	38.4	41.2	49 28.48	+ 0.28	. .	+41.22	21 50 9.98	− 0.15
12	35	Sun I, N. . . .	F.	3	22.5	25.0	26.7	32.9	34.8	36.9	43.0	44.7	47.1	29 34.84	+ 0.27	. .	+41.22	23 30 16.33	. .
	36	Sun II	F.	3	31.9	34.8	36.1	42.1	44.2	46.4	52.3	53.8	56.4	31 44.22	+ 0.27	. .	+41.22	23 32 25.71	. .
	37	Polaris	F.	.	. .	. .	. .	. .	. .	11.0	35.0	24.0	7.0	9 44.80	− 1.90	. .	+41.22	1 10 24.12	− 0.45
	38	δ Ursæ Min., S. P. .	F.	4	. .	. .	59.0	25.0	49.5	16.0	41.5	. .	. .	13 50.32	+ 1.15	. .	+41.22	18 14 32.69	− 0.01
	39	γ Geminorum . .	F.	.	14.8	17.4	18.8	25.3	27.3	29.5	35.9	37.5	40.1	29.27.40	+ 0.25	+41.19	+41.22	6 30 8.87	+ 0.03
	40	α Canis Majoris . .	F.	4	28.5	31.1	32.6	39.0	41.2	43.4	49.6	51.4	54.0	38 41.20	+ 0.28	+41.23	+41.22	6 39 22.70	− 0.08
	41	ε Canis Majoris . .	F.	.	33.7	36.6	38.4	45.4	47.8	50.0	57.1	58.8	1.6	52 47.71	+ 0.30	+41.17	+41.22	6 53 29.23	+ 0.03
	42	δ Canis Majoris . .	F.	.	9.2	12.2	14.0	20.8	23.0	25.2	32.0	33.9	36.7	2 23.00	+ 0.28	+41.17	+41.22	7 3 4.50	+ 0.03
	43	δ Geminorum . .	F.	3	23.7	26.1	27.7	34.7	36.8	39.0	45.6	47.4	50.0	11 36.78	+ 0.24	+41.24	+41.22	7 12 18.24	− 0.05
	44	67 Piazzi	F.	.	. .	. .	21.6	27.1	33.0	38.5	44.1	. .	. .	16 32.84	+ 0.12	. .	+41.22	7 17 14.18	− 0.35
	45	α Canis Minoris .	F.	3	33.3	35.9	37.6	43.6	45.7	47.7	53.9	55.4	57.8	31 45.66	+ 0.26	+41.23	+41.22	7 32 27.14	− 0.07
	46	β Geminorum . .	F.	.	23.0	26.0	27.7	34.6	36.9	39.2	46.2	48.0	51.0	36 36.96	+ 0.23	+41.14	+41.22	7 37 18.41	+ 0.08
	47	N Præsepe . . .	F.	3	55.5	58.3	0.0	6.5	8.7	10.8	17.2	19.1	21.7	30 8.64	+ 0.24	. .	+41.22	8 30 50.10	+ 2.74
	48	ε Hydræ	F.	2	. .	. .	5.4	7.4	9.4	11.4	13.7	. .	. .	39 9.45	+ 0.28	+41.32	+41.22	8 39 50.95	− 0.10
	49	ι Ursæ Majoris .	F.	3	. .	. .	26.7	29.8	32.9	36.0	39.2	. .	. .	49 32.91	+ 0.20	. .	+41.22	8 50 14.33	− 0.23

12.44. Bisections at sets B and D.
15. Reading of microscope VII doubtful.
42. Bisections at wire VI½.
46. Seems 5 revs. wrong in N. P. D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
		V.	VI.	VII.	VIII.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	11 44	8.3	5.8	13.4	3.2	22	. .	880	. .	972	. .	61.7	11 47 23.2	795	+ 12.8	62 53 57.2	− 1.1
2	307 46	3.0	2.6	7.6	26.6	.	. .	612	583	733	. .	61.7	307 49 43.9	. .	− 1 19.0	358 54 46.1	+ 0.2
3	62 44	1.4	0.4	9.1	28.8	24	. .	112	. .	258	. .	61.7	62 47 36.8	795	+ 1 59.1	113 55 57.1	− 2.1
4	18 10	0.7	29.0	7.5	26.8	24	. .	. .	. .	316	327	61.7	18 13 37.0	. .	+ 20.2	69 20 18.4	+ 4.7
5	18 16	2.8	1.8	8.5	28.1	28	. .	. .	. .	398	410	61.7	18 20 41.2	795	+ 20.4	69 27 22.8	+ 4.8
6	31 56	5.0	3.8	12.0	1.8	22	. .	793	. .	916	. .	61.7	31 59 19.9	. .	+ 38.3	83 6 19.4	+ 0.4
7	331 10	2.8	1.8	7.7	27.6	27	. .	. .	. .	240	110	61.7	331 14 23.3	. .	− 33.7	22 20 10.8	− 0.5
8	46 54	4.9	2.2	11.4	1.3	26	. .	544	. .	578	. .	61.7	46 58 15.8	. .	+ 1 5.5	98 5 42.5	− 0.8
9	19.26	1.6	0.0	7.5	28.4	23	130	. .	. .	. .	252	61.7	19 29 21.5	. .	+ 21.6	70 36 4.3	− 4.0
10	19 26	1.6	0.0	7.5	28.4	22	. .	112	. .	252	. .	61.7	19 29 5.9	. .	+ 21.6	70 35 48.7	− 4.0
11	11 0	3.2	0.4	7.9	26.9	32	. .	. .	. .	239	263	61.7	11 5 39.6	745	+ 11.9	62 12 12.7	− 0.8
12	59 6	1.8	29.0	7.0	26.8	21	. .	580	610	620	. .	61.7	59 8 56.2	752	+ 1 41.6	110 16 59.0	
13	312 14	5.2	4.0	8.3	29.1	28	. .	. .	066	076	. .	61.7	312 18 38.1	748	− 1 6.7	3 23 52.6	− 0.7
14	43 58	23.5	21.0	0.3	17.0	31	304	302	. .	. .	. .	61.8	44 3 16.8	. .	+ 58.7	95 10 36.7	− 6.2
15	44 30	29.5	27.3	5.4	24.3	32	. .	. .	. .	080	125	61.8	44 35 34.5	745	+ 59.8	95 42 55.5	− 6.2
16																	
17	0 10	29.9	27.0	4.1	27.0	25	. .	910	. .	960	. .	61.8	0 14 1.1	. .	+ 0.2	51 20 22.5	− 0.5
18																	
19																	
20																	
21																	
22	19 32	6.2	3.7	10.2	0.5	28	. .	010	. .	160	. .	62.0	29 36 39.7	676	+ 34.0	80 43 34.9	+ 0.9
23	43 22	5.3	3.6	10.6	29.5	23	. .	138	. .	. .	. .	62.0	43 25 23.8	. .	+ 55.2	94 32 40.2	− 6.1
24	42 50	2.6	0.5	7.3	26.1	22	. .	. .	. .	688	685	62.0	42 53 13.2	572	+ 54.1	94 0 28.5	− 6.1
25	310 14	6.7	4.8	10.5	1.1	24	. .	718	678	. .	. .	62.0	310 17 48.5	566	− 1 8.6	1 23 1.1	− 3.0
26																	
27	52 2	7.4	6.3	12.9	3.8	26	250	270	. .	352	427	57.7	52 6 10.7	682	+ 1 16.8	103 13 48.7	−11.0
28																	
29	42 34	10 24.5	21.3	28.0	16.8	26	085	035	. .	. .	. .	57.7	42 38 22.2	. .	+ 54.7	93 45 38.1	− 6.0
30	42 2	12.8	10.4	17.6	6.8	26	. .	. .	. .	068	074	57.7	42 6 10.9	652	+ 53.7	93 13 25.8	− 6.0
31																	
32																	
33																	
34	52 0	9.6	8.8	16.9	4.7	25	765	772	. .	788	796	57.1	52 4 4.2	748	+ 1 17.9	103 11 43.3	−10.2
35	41 38	29.8	29.0	5.1	24.8	28	. .	151	222	288	. .	57.1	41 42 31.3	720	+ 53.8	92 49 46.3	− 5.9
36																	
37	310 14	13.3	11.1	16.4	6.5	25	. .	. .	. .	626	579	57.1	310 18 3.6	678	− 1 10.4	1 23 14.4	− 0.5
38	305 28	10 14.9	13.7	19.1	8.7	21	847	824	826	861	904	57.1	305 31 8.6	670	− 1 23.3	356 36 6.5	+ 0.5
39	22 20	11.3	9.3	16.6	6.3	20	842	876	. .	952	975	57.1	22 22 51.0	. .	+ 24.6	73 29 36.8	− 1.3
40	55 22	8.1	7.1	13.8	5.0	21	. .	033	. .	137	. .	57.1	55 24 51.0	672	+ 1 26.4	106 32 38.6	+ 2.1
41	67 36	8.1	7.1	13.8	5.0	22	. .	950	. .	976	. .	57.1	67 39 19.6	. .	+ 2 24.4	118 48 5.2	− 1.2
42	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . . .	678			
43	16 36	13.7	10.6	18.0	7.8	26	. .	075	. .	136	. .	57.1	16 40 12.0	. .	+ 17.9	67 46 51.1	− 0.7
44	330 6	9.1	8.2	11.9	3.3	27	006	991	. .	992	024	57.1	330 10 21.3	. .	− 34.3	21 16 8.2	− 2.5
45	33 16	10 11.0	8.2	16.6	6.7	24	. .	110	. .	176	. .	57.1	33 19 40.0	686	+ 39.4	84 26 40.6	− 0.7
46	10 30	10 15.1	12.5	20.1	10.0	26	. .	630	. .	725	. .	57.1	10 34 22.6	. .	+ 11.2	61 40 55.0	+74.5
47	18 10	10 15.6	13.1	20.0	9.8	23	615	675	. .	761	827	57.1	18 13 37.6	688	+ 19.7	69 20 18.5	+ 5.1
48	31 56	6.1	4.1	11.8	1.6	23	. .	. .	. .	. .	241	57.1	31 59 20.5	. .	+ 37.4	83 6 19.1	− 0.1
49	350 16	13.7	11.5	18.4	7.8	27	. .	. .	. .	635	535	57.1	350 20 34.6	. .	− 10.2	41 26 45.6	− 1.2

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
27	30.176	38.8	67.6

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	MOON'S— Semi-diam.
	′ ″	′ ″
12	−47 42.2	−15 12.9

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us. Corrections
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Mar. 12	1	σ Ursæ Majoris .	F.	.	. .	. .	59.3	4.5	10.0	15.5	20.6	. .	. .	58 9.96	+ 0.12	. .	+41.22	8 58 51.30	− 0.20
	2	Mars I, S. . . .	F.	.	28.9	31.7	33.4	. .	. .	. .	50.8	52.3	55.0	19 42.02	+ 0.24	. .	+41.22	9 20 23.48	. .
	3	Mars II, N. . .	F.	.	. .	. .	38.6	40.9	43.0	45.2	47.2	. .	. .	19 42.97	+ 0.24	. .	+41.22	9 20 24.43	. .
	4	Mercury II, N. .	T.	.	19.6	22.1	23.7	29.9	32.0	34.0	40.4	42.1	44.7	52 32.06	+ 0.22	. .	+41.14	21 53 13.42	− 0.28
13	5	Sun I, S. . . .	T.	.	2.5	5.2	6.7	12.8	14.7	16.6	23.0	24.5	27.0	33 14.78	+ 0.20	. .	+41.14	23 33 56.12	. .
	6	Sun II, N. . . .	T.	.	11.8	14.5	16.0	21.9	24.0	26.0	32.0	33.8	36.4	35 24.04	+ 0.20	. .	+41.14	23 36 5.38	. .
	7	α Arietis	T.	.	51.9	54.6	56.5	3.0	5.0	7.3	13.9	15.6	18.4	59 5.13	+ 0.16	+41.24	+41.13	1 59 46.42	− 0.10
	8	δ Ursæ Min., S. P. .	T.	.	. .	. .	0.0	25.0	49.0	16.0	. .	. .	. .	13 50.42	+ 2.20	. .	+41.12	18 14 33.74	+ 0.64
	9	Uranus, C. . .	T.	2	. .	. .	25.0	27.1	29.1	31.6	34.0	. .	. .	57 29.35	+ 0.16	. .	+41.12	6 58 10.63	. .
	10	δ Geminorum . .	T.	.	23.7	26.5	28.2	34.7	37.0	39.1	45.8	47.5	50.2	11 36.97	+ 0.19	+41.11	+41.12	7 12 18.26	− 0.02
	11	α Canis Minoris .	T.	.	33.5	36.1	37.6	43.8	45.8	47.9	54.0	55.5	58.2	31 45.82	+ 0.19	+41.09	+41.12	7 32 27.13	− 0.03
	12	β Geminorum . .	T.	.	23.2	26.0	27.9	34.8	37.1	39.5	46.4	48.2	51.2	36 37.14	+ 0.14	+41.04	+41.12	7 37 18.40	+ 0.08
15	13	λ Ursæ Min., S. P. .	N.	4	40.0	28.0	7.0	34.0	46.0	. .	. .	. .	. .	53 57.94	+12.10	. .	+41.11	19 54 51.15	− 0.35
	14	κ Cephei, S. P. . .	N.	3	. .	. .	49.2	39.8	30.5	20.8	12.3	. .	. .	12 30.49	+ 1.34	. .	+41.11	20 13 12.84	+ 0.34
	15	ε Hydræ	N.	4	57.3	59.8	1.3	7.4	9.6	11.6	17.8	19.3	21.9	39 9.56	+ 0.33	+41.13	+41.12	8 39 51.01	− 0.01
	16	Mars I, N. . .	N.	4	. .	. .	38.3	40.5	42.6	44.8	46.9	. .	. .	17 42.61	+ 0.28	. .	+41.12	9 18 24.01	. .
	17	Mars II, S. . .	N.	4	30.5	33.3	34.8	. .	. .	. .	52.1	53.8	56.4	17 43.48	+ 0.28	. .	+41.12	9 18 24.88	. .
	18	ε Leonis	N.	4	30.8	33.6	35.4	42.0	44.3	46.5	53.2	54.9	57.6	37 44.26	+ 0.26	+41.12	+41.12	9 38 25.64	+ 0.03
	19	μ Leonis	N.	4	24.4	27.3	29.0	35.8	38.1	40.5	47.2	49.0	51.8	44 38.12	+ 0.24	+41.08	+41.12	9 45 19.48	+ 0.09
	20	ρ Leonis	N.	4	1.9	4.4	6.0	12.2	14.3	16.4	22.4	24.1	26.6	25 14.26	+ 0.32	+41.16	+41.12	10 25 55.70	− 0.08
	21	ο Virginis . . .	N.	4	39.4	42.0	43.6	49.7	51.7	53.8	0.0	1.6	4.1	57 51.77	+ 0.32	+41.15	+41.12	11 58 33.21	− 0.09
	22	Panopæa . . .	N.	3	51.5	54.3	55.7	2.0	4.2	6.4	12.5	14.3	17.0	5 4.21	+ 0.30	. .	+41.12	12 5 45.63	. .
	23	η Virginis . . .	N.	4	19.8	22.3	23.9	30.0	31.9	34.0	40.1	41.6	44.2	12 31.98	+ 0.36	+41.06	+41.12	12 13 13.46	+ 0.05
	24	α Cephei	F.	3	. .	. .	35.8	40.3	44.3	48.4	53.0	. .	. .	14 44.34	− 0.06	. .	+41.15	21 15 25.43	− 0.03
	25	Mercury II, N. .	F.	3	45.2	48.0	49.5	55.9	57.8	59.8	6.0	7.7	10.5	2 57.82	+ 0.39	. .	+41.15	22 3 39.36	− 0.26
16	26	Sun I, N. . . .	F.	.	. .	. .	9.0	11.0	13.2	15.3	17.2	. .	. .	44 13.13	+ 0.36	. .	+41.15	23 44 54.64	. .
	27	Sun II, S. . . .	F.	.	10.1	12.6	14.0	20.2	22.1	24.2	30.6	32.2	34.5	46 22.28	+ 0.36	. .	+41.15	23 47 3.79	. .
	28	Polaris	F.	1	. .	. .	58.0	24.0	50.0	. .	15.0	. .	. .	9 47.85	− 5.84	. .	+41.16	1 10 23.17	+ 0.04
	29	15 Argus	F.	.	3.8	6.5	8.2	15.0	17.2	19.3	26.0	27.6	30.5	1 17.12	+ 0.44	+41.18	+41.19	8 1 58.75	− 0.01
	30	E Præsepe . . .	F.	2	16.5	19.1	20.8	27.3	29.4	31.5	38.4	39.6	42.3	31 29.43	+ 0.30	. .	+41.19	8 32 10.92	+ 2.80
	31	ε Hydræ . . .	F.	.	57.2	59.8	1.3	7.4	9.4	11.5	17.7	19.2	21.7	39 9.47	+ 0.34	+41.20	+41.19	8 39 51.00	− 0.01
17	32	Sun I, S. . . .	T.	.	. .	. .	48.1	50.0	51.9	53.9	56.4	. .	. .	47 52.05	+ 0.27	. .	+41.20	23 48 33.52	. .
	33	Sun II . . .	T.	3	48.8	51.4	53.0	59.0	1.0	3.1	9.4	10.9	13.4	50 1.00	+ 0.27	. .	+41.20	23 50 42.47	. .
	34	λ Ursæ Min., S. P. .	T.	3	. .	. .	43.0	56.0	4.0	20.0	31.0	. .	. .	54 6.92	+ 6.69	. .	+41.20	19 54 54.81	+ 1.31
	35	15 Argus	T.	.	3.9	6.7	8.5	15.0	17.2	19.5	25.9	27.7	30.6	1 17.22	+ 0.31	+41.19	+41.20	8 1 58.73	− 0.01
	36	E Præsepe . . .	T.	3	16.3	19.0	20.5	27.2	29.3	31.6	38.1	39.8	42.6	31 29.38	+ 0.22	. .	+41.20	8 32 10.80	+ 2.78
	37	ε Hydræ	T.	.	57.2	59.5	1.1	7.5	9.5	11.6	17.7	19.3	21.7	39 9.46	+ 0.26	+41.27	+41.20	8 39 50.92	− 0.07
	38	κ Cancri	T.	.	45.8	48.5	50.1	56.4	58.4	0.5	6.7	8.3	10.9	59 58.40	+ 0.25	+41.12	+41.20	9 0 39.85	+ 0.08
	39	Mars I, S. . .	T.	.	25.8	28.4	30.0	. .	. .	. .	47.4	48.9	51.6	16 38.69	+ 0.23	. .	+41.20	9 17 20.12	. .
	40	Mars II, N. . .	T.	.	. .	. .	35.2	37.2	39.6	41.8	44.0	. .	. .	16 39.55	+ 0.23	. .	+41.20	9 17 20.98	. .
	41	α Hydræ	T.	.	. .	. .	24.3	26.4	28.5	30.4	32.7	. .	. .	20 28.45	+ 0.28	+41.23	+41.20	9 21 9.93	− 0.03
	42	ζ Cygni	N.	3	25.0	28.0	29.8	36.9	39.1	41.5	48.6	50.4	53.2	6 39.17	+ 0.19	+41.20	+41.20	21 7 20.56	− 0.11
	43	α Cephei	N.	4	18.0	23.4	26.8	39.8	44.2	48.6	1.5	4.7	10.4	14 44.16	+ 0.05	. .	+41.20	21 15 25.41	− 0.11
	44	β Aquarii . . .	N.	3	44.9	47.3	48.9	55.0	57.0	59.1	5.3	6.9	9.4	23 57.09	+ 0.26	+41.18	+41.20	21 24 38.55	+ 0.02
	45	ε Pegasi	N.	2	50.2	52.6	54.1	0.4	2.6	4.7	10.8	12.3	14.9	37 2.51	+ 0.24	+41.27	+41.20	21 37 43.09	− 0.09
18	46	Sun I, S. . . .	N.	2	. .	. .	. .	31.0	33.0	35.0	39.0	40.6	43.2	51 30.95	+ 0.25	. .	+41.27	23 52 12.47	. .
	47	Sun II, N. . .	N.	3	. .	. .	35.8	37.9	39.9	42.0	44.0	. .	. .	53 39.91	+ 0.25	. .	+41.27	23 54 21.43	. .
	48	Polaris	N.	1	. .	. .	58.0	20.0	46.0	11.0	33.0	. .	. .	9 45.28	− 4.19	. .	+41.27	1 10 22.36	− 0.35
	49	η Tauri	N.	3	46.5	49.2	50.9	57.5	59.7	2.0	8.8	10.4	13.2	38 59.80	+ 0.20	+41.29	+41.27	3 39 41.27	− 0.01

22. Wire A used.
24.32. Bisections at sets B and D.
28. Seems 1 rev. wrong in N. P. D.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
		V.	VI.	VII.	VIII.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	331 10	10 16.3	18.5	13.0	9.0	26	365	343	. .	300	302	57.1	331 14 18.2	. .	— 32.9	22 20 6.5	— 3.1
2	19 14	10 12.1	9.6	15.9	6.0	20	716	. .	. .	. .	930	57.1	19 16 49.8	687	+ 20.9	70 23 31.9	— 3.8
3	19 14	10 12.1	9.6	15.9	6.0	19	. .	813	. .	883	. .	57.1	19 16 34.8	. .	+ 20.9	70 23 16.9	— 3.8
4	51 56	8.0	7.0	11.6	3.2	26	. .	162	. .	280	. .	57.8	52 0 9.1	620	+ 1 15.4	103 7 45.7	— 8.2
5	41 48	10 15.1	13.1	19.3	9.3	21	936	950	. .	. .	. .	57.8	41 51 10.9	. .	+ 52.1	92 58 24.2	— 5.9
6	41 16	17.6	16.5	22.4	12.7	20	. .	. .	. .	930	080	57.8	41 18 59.0	564	+ 51.2	93 26 11.4	— 5.9
7	16 0	13.3	10.0	17.5	8.5	21	. .	203	. .	238	. .	57.8	16 2 57.8	. .	+ 16.7	67 9 35.7	— 0.6
8	305 28	11.5	9.4	14.0	3.7	22	. .	. .	034	. .	. .	57.8	305 31 7.4	547	— 1 21.1	356 36 7.5	+ 1.7
9	15 38	6.6	3.5	10.4	0.4	20	. .	778	. .	849	. .	57.8	15 40 44.5	. .	+ 16.3	66 47 22.0	— 0.1
10	16 36	10.5	7.6	14.0	3.6	26	. .	298	. .	382	. .	57.8	16 40 12.5	. .	+ 17.5	67 46 51.2	— 0.5
11	33 16	7.5	5.5	12.9	2.4	24	. .	428	. .	474	. .	57.8	33 19 41.8	. .	+ 38.4	84 26 41.4	+ 0.1
12	10 30	10.6	7.6	14.4	4.5	22	. .	044	. .	100	. .	57.8	10 33 7.8	580	+ 10.9	61 39 39.9	— 0.6
13																	
14	296 10	4.8	4.7	7.8	27.8	27	. .	. .	562	. .	. .	56.4	296 14 24.7	762	— 2 3.2	347 18 42.7	— 1.1
15	31 56	5.1	5.2	11.4	1.1	23	242	248	. .	332	365	56.4	31 59 21.4	765	+ 38.1	83 6 20.7	+ 1.7
16	19 12	6.8	5.1	9.9	1.2	21	205	. .	. .	. .	378	56.4	19 14 51.1	769	+ 21.3	70 21 33.6	— 3.8
17	19 12	6.8	5.1	9.9	1.2	22	. .	. .	. .	091	. .	56.4	19 15 2.5	. .	+ 21.3	70 21 45.0	— 3.8
18	14 28	9.7	7.5	13.3	3.2	21	360	412	. .	490	500	56.4	14 30 55.9	. .	+ 15.8	65 37 32.9	+ 0.1
19	12 12	8.9	6.9	12.4	2.8	26	314	372	. .	455	452	56.4	12 16 10.9	775	+ 13.3	63 22 45.4	+ 0.7
20	28 50	3.5	2.7	9.1	28.3	27	655	688	. .	758	795	56.4	28 54 26.9	. .	+ 33.8	80 1 21.9	— 0.2
21	29 22	5.9	4.6	11.7	0.7	23	975	002	. .	100	098	56.4	29 25 32.9	. .	+ 34.7	80 32 28.8	— 1.1
22	23 50	2.9	0.6	7.6	25.9	24	. .	269	. .	268	. .	56.4	23 50 58.3	. .	+ 27.2	74 57 46.7	— 1.9
23	38 46	0.6	29.8	5.6	25.7	23	. .	. .	304	. .	. .	56.4	38 49 16.2	798	+ 49.4	89 56 26.8	+ 0.8
24	336 48	10 16.8	13.0	18.6	7.2	26	738	668	. .	729	750	56.4	336 52 22.0	808	— 26.3	27 58 16.9	— 2.6
25	51 34	9.1	8.8	14.7	4.5	25	079	056	. .	069	110	59.2	51 37 54.8	780	+ 1 17.3	102 45 33.3	— 7.8
26	40 4	2.8	3.3	8.1	29.3	25	187	301	. .	. .	. .	59.2	40 7 51.9	. .	+ 51.3	91 15 4.4	— 5.7
27	40 36	1.3	1.0	5.3	27.0	26	. .	258	. .	258	308	59.2	40 40 5.8	755	+ 52.3	91 47 19.3	— 5.7
28	310 14	8.8	8.5	14.2	2.7	26	912	925	942	. .	. .	59.2	310 18 22.7	. .	— 1 11.7	1 23 32.2	+16.0
29	62 44	6.1	4.3	11.5	0.4	24	225	275	. .	290	292	59.2	62 47 38.8	765	+ 1 58.2	103 55 58.2	— 2.3
30	18 16	7.7	6.0	11.7	1.0	28	065	208	. .	238	302	59.2	18 20 40.3	. .	+ 20.2	69 27 21.7	+ 5.5
31	31 56	9.2	7.8	15 0	3.1	22	. .	759	. .	818	. .	59.2	31 59 19.5	768	+ 38.1	83 6 18.8	— 0.2
32	40 12	1.5	1.8	8.0	27.8	27	. .	653	592	582	. .	59.2	40 16 26.7	. .	+ 50.3	91 23 38.2	— 5.7
33	. .	. .	. .	. .	. .	.	. .	. .	. .	. .	. .	. .	. . . . .	648			
34	307 46	4.4	3.2	1.5	25.8	24	534	510	533	623	650	59.2	307 49 38.9	715	— 1 18.6	358 54 41.5	— 2.1
35	62 44	2.0	0.8	8.0	27.9	24	. .	638	. .	670	. .	59.2	62 47 41.2	. .	+ 1 56.9	113 55 59.3	— 1.4
36	18 18	5.1	2.7	9.3	28.8	20	. .	492	. .	620	. .	59.2	18 20 40.7	726	+ 20.1	69 27 22.0	+ 5.4
37	31 56	5.0	3.4	10.3	28.0	23	. .	062	. .	194	. .	59.2	31 59 20.1	. .	+ 37.8	83 6 19.1	+ 0.1
38	27 38	3.5	2.2	8.8	27.4	24	. .	453	. .	510	. .	59.2	27 41 39.6	. .	+ 31.8	78 48 32.6	+ 0.2
39	19 12	10.0	7.8	13.5	3.6	22	232	. .	. .	. .	396	59.2	19 15 12.4	. .	+ 21.2	70 21 54.8	— 3.7
40	19 12	10.0	7.8	13.5	3.6	21	. .	346	. .	396	. .	59.2	19 14 57.9	. .	+ 21.2	70 21 40.3	— 3.7
41	46 54	0.8	29.2	6.5	24.6	27	. .	. .	. .	308	. .	59.2	46 58 19.4	738	+ 1 4.9	98 5 45.5	+ 1.2
42	9 8	0.3	27.8	4.2	22.4	26	. .	832	911	898	. .	58.9	9 12 11.6	796	+ 9.9	60 18 42.7	— 0.1
43	336 48	4.9	3.2	7.1	26.8	27	. .	290	. .	380	. .	58.9	336 52 23.5	798	— 26.3	27 58 18.4	— 1.6
44	44 58	2.1	1.8	7.7	27.5	23	678	680	. .	782	818	58.9	45 1 27.2	. .	+ 1 1.5	96 8 49.9	+ 0.6
45	29 32	3.9	3.3	8.8	28.3	28	299	298	. .	349	399	58.9	29 36 38.8	790	+ 34.9	80 43 34.9	+ 0.5
46	39 50	9 25.1	22.7	29.0	18.9	21	305	318	. .	. .	. .	58.9	39 52 42.1	. .	+ 50.8	90 59 54.1	— 5.7
47	39 18	1.7	29.9	5.8	25.0	20	. .	. .	. .	404	422	58.9	39 20 34.2	752	+ 49.9	90 27 45.3	— 5.7
48	310 14	2.3	1.1	4.7	24.9	26	504	550	500	430	451	58.9	310 18 7.9	718	— 1 11.3	1 23 17.8	+ 1.0
49	15 8	4.3	2.6	8.1	27.9	24	173	171	. .	273	312	58.9	15 11 35.9	685	+ 16.3	66 18 13.4	— 0.9

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
14	30.306	31.1	74.0
19	30.344	30.3	72.7
23	30.370	28.5	70.5
43	30.458	30.4	68.5

For summary of the elements of reduction see page 3.

No.	MOON'S—	
	Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Mar. 18	1	Moon I, S. . . .	N.	3.1	48.6	51.2	52.9	59.3	1.6	3.7	10.2	11.7	14.5	54 1.52	+ 0.22	. .	+41.27	3 54 43.01	+65.63
	2	δ Ursæ Min., S. P. .	N.	4	. .	. .	59.5	25.3	51.3	15.5	42.0	. .	. .	13 50.88	+ 2.10	. .	+41.27	18 14 34.25	− 0.72
	3	α Canis Minoris .	N.	4	33.1	35.7	37.2	43.4	45.4	47.5	53.6	55.2	57.6	31 45.41	+ 0.24	+41.37	+41.27	7 32 26.92	− 0.16
	4	β Geminorum . .	N.	3	. .	. .	32.0	34.5	36.8	39.0	41.4	. .	. .	36 36.73	+ 0.19	+41.31	+41.27	7 37 18.19	− 0.04
	5	λ Ursæ Min., S. P. .	N.	4	52.0	38.0	18.0	. .	. .	. .	. .	34.0	20.0	54 4.82	+ 5.97	. .	+41.27	19 54 52.06	− 2.40
	6		N.	4	. .	. .	39.0	50.0	2.5	16.0	27.0	. .	. .						
	7	κ Cephei, S. P. . .	N.	3	26.8	15.0	8.1	40.0	30.9	21.8	54.2	47.0	35.3	12 31.01	+ 0.73	. .	+41.27	20 13 13.01	+ 0.25
	8	E Præsepe . . .	N.	4	16.3	19.1	20.7	27.2	29.4	31.5	38.0	39.6	42.3	31 29.34	+ 0.21	. .	+41.27	8 32 10.82	+ 2.81
	9	ε Hydræ	N.	4	57.1	59.6	1.1	7.3	9.4	11.5	17.6	19.1	21.7	39 9.38	+ 0.24	+41.36	+41.27	8 39 50.89	− 0.09
	10	ι Ursæ Majoris . .	N.	4	14.7	18.4	20.8	30.0	33.0	36.2	45.4	47.7	51.5	49 33.08	+ 0.13	. .	+41.27	8 50 14.48	+ 0.02
	11	σ^2 Ursæ Majoris . .	N.	4	37.8	44.6	48.5	4.7	10.1	15.5	31.5	35.7	42.4	58 10.09	− 0.01	. .	+41.27	8 58 51.35	+ 0.04
	12	Mars I, N. . . .	N.	4	. .	. .	7.1	9.2	11.4	13.6	15.7	. .	. .	16 11.39	+ 0.21	. .	+41.27	9 16 52.87	. .
	13	Mars II, S. . .	N.	4	59.1	1.8	3.6	. .	. .	. .	20.8	22.5	25.2	16 12.17	+ 0.21	. .	+41.27	9 16 53.65	. .
	14	Julia (?)	N.	2	41.0	43.9	. .	. .	54.8	. .	. .	5.3	8.5	15 54.70	+ 0.29	. .	+41.27	12 16 36.26	. .
	15	β Corvi	N.	3	37.2	39.9	41.7	48.3	50.4	52.8	59.3	1.0	3.7	26 50.48	+ 0.29	+41.08	+41.27	12 27 32.04	+ 0.13
	16	21 Cassiopeæ, S. P. .	N.	2	3.2	53.7	48.0	25.0	18.0	10.1	47.7	42.0	32.7	36 17.82	+ 0.65	. .	+41.27	0 36 59.74	+ 0.46
	17	α Canum Venat. .	N.	3	57.7	1.0	3.0	10.9	13.5	16.2	24.0	26.0	29.2	49 13.50	+ 0.15	+41.30	+41.27	12 49 54.92	− 0.02
	18	θ Virginis . . .	N.	3	17.5	20.1	21.6	27.8	29.9	31.8	38.0	39.6	42.0	2 29.81	+ 0.26	+41.22	+41.27	13 3 11.34	+ 0.02
	19	Polaris, S. P. . .	N.	3	. .	. .	. .	2.0	37.0	12.0	46.0	. .	. .	9 36.55	+ 4.71	. .	+41.27	1 10 22.53	− 0.07
20	20	Moon I, N. . .	T.	3	37.3	40.0	41.6	48.3	50.6	52.8	59.4	1.0	3.8	44 50.53	+ 0.13	. .	+41.22	5 45 31.88	+69.18
	21	μ Geminorum . .	T.	.	41.0	54.4	. .	. .	. .	. .	. .	47.3	0.5	14 20.80	+ 0.12	+41.22	. .	. . . .	. .
21	22	μ Geminorum . .	N.	3	7.2	10.0	11.8	18.3	20.6	22.7	29.4	31.2	33.8	14 20.56	+ 0.10	+41.42	. .	. . . .	. .
	23	Moon I, N. . .	N.	4	0.2	2.9	4.6	11.1	13.3	15.6	22.5	24.0	26.7	44 13.43	+ 0.10	. .	+41.42	6 44 54.95	+70.57
22	24	Mercury II, C. .	F.	.	44.9	47.2	49.0	55.2	57.3	59.3	5.7	7.2	9.7	32 57.28	+ 0.09	. .	+41.73	22 33 39.10	− 0.24
	25	α Pegasi	F.	1	19.2	21.4	23.1	29.4	31.8	33.6	39.8	41.5	44.1	57 31.54	+ 0.07	+41.40	+41.73	22 58 13.34	+ 0.34
23	26	Sun I, S. . . .	F.	2	. .	. .	. .	. .	44.3	46.4	50.8	52.3	54.8	9 42.48	+ 0.08	. .	+41.73	0 10 24.29	. .
	27	Sun II, N. . . .	F.	3	39.0	41.5	43.2	49.2	51.4	53.5	59.6	1.3	3.8	11 51.39	+ 0.08	. .	+41.73	0 12 23.20	. .
	28	Polaris. . . .	F.	2	. .	. .	. .	. .	8.0	33.0	17.0	21.0	6.0	9 42.32	− 2.62	. .	+41.74	1 10 21.44	+ 0.05
	29	α Ceti	F.	2	. .	. .	39.3	41.3	43.2	45.4	47.4	. .	. .	54 43.31	+ 0.08	+41.61	+41.75	2 55 25.14	+ 0.14
	30	α Canis Majoris . .	F.	3	. .	. .	36.4	38.5	40.6	42.7	44.9	. .	. .	38 40.61	+ 0.10	+41.78	+41.77	6 39 22.48	− 0.08
	31	δ Canis Majoris . .	F.	3	8.6	11.6	13.1	19.9	22.3	24.6	31.6	33.0	36.1	2 22.31	+ 0.20	. .	+41.77	7 3 4.28	+ 0.04
	32	φ Geminorum . .	F.	.	. .	. .	42.5	44.9	47.2	49.3	51.6	. .	. .	44 47.09	+ 0.06	+41.84	+41.77	7 45 28.92	− 0.11
	33	λ Ursæ Min., S. P. .	F.	.	. .	. .	46.0	. .	10.0	26.0	. .	. .	. .	54 11.87	+ 3.59	. .	+41.77	19 55 57.23	− 1.70
	34	ε Hydræ	F.	3	. .	. .	. .	. .	. .	. .	17.2	18.8	21.3	39 9.01	+ 0.08	+41.82	+41.77	8 39 50.86	− 0.05
	35	Moon I, N. . .	F.	3	23.9	26.4	28.2	34.9	37.0	39.2	45.8	47.5	50.0	47 36.99	+ 0.07	. .	+41.77	8 48 18.53	+71.57
	36	κ Cancri	F.	3	45.4	47.7	49.5	55.8	58.0	0.0	6.2	7.7	10.4	59 57.86	+ 0.07	+41.83	+41.78	9 0 39.71	+ 0.01
	37	Mars, S. . . .	F.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	38	α Leonis	F.	3	30.0	32.7	34.5	40.5	42.9	44.9	51.0	52.8	55.2	0 42.72	+ 0.07	+41.76	+41.78	10 1 24.57	+ 0.02
	39	γ^1 Leonis	F.	3	51.0	53.6	55.3	1.7	4.0	6.0	12.6	14.3	17.0	12 3.94	+ 0.06	+41.78	+41.78	10 12 45.78	+ 0.02
	40	9 Draconis . . .	F.	3	. .	. .	56.7	5.3	14.3	23.1	31.7	. .	. .	23 14.21	− 0.14	. .	+41.78	10 23 55.85	− 0.41
	41	l Leonis	F.	4	28.9	31.6	33.0	39.3	41.4	43.3	49.6	51.3	53.8	41 41.36	+ 0.07	+41.80	+41.78	10 42 23.21	+ 0.05
	42	α Ursæ Majoris .	F.	4	30.7	35.8	39.3	52.3	57.0	1.5	15.0	18.0	23.5	54 57.01	− 0.03	. .	+41.78	10 55 38.76	− 0.23
	43	δ Crateris . . .	F.	4	54.4	57.2	58.7	4.9	7.2	9.2	15.5	17.2	19.4	12 7.08	+ 0.09	+41.68	+41.79	11 12 48.96	+ 0.11
	44	τ Leonis	F.	.	19.0	21.7	23.3	29.3	31.3	33.4	39.6	41.0	43.5	20 31.34	+ 0.08	+41.74	+41.79	11 21 13.21	+ 0.06
	45	υ Leonis	F.	4	21.6	24.1	25.6	31.8	33.8	35.9	42.0	43.5	46.2	29 33.83	+ 0.08	+41.77	+41.79	11 30 15.70	+ 0.01
	46	β Leonis	F.	4	29.3	31.9	33.3	39.5	41.8	44.0	50.2	51.9	54.6	41 41.83	+ 0.06	+41.80	+41.79	11 42 23.68	+ 0.00
	47	ο Virginis . . .	F.	3	39.1	41.9	43.2	49.5	51.4	53.3	59.7	1.3	3.9	57 51.48	+ 0.08	+41.74	+41.79	11 58 33.33	− 0.01
	48	Anonymous . .	F.	.	2.7	4.7	6.6	10.6	14.5	19.2	23.2	24.9	27.2	7 14.84	+ 0.09	. .	+41.79	12 7 56.72	. .

1.20.35.40. Bisections at sets B and D.
14.48. Wire A used.
21. R. A. observed over wires I–VII.
28. N. P. D. seems 5 revs. wrong.
48. Observed for Massalia.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	24 10	11 11.3	10.8	15.2	5.0	26	. .	188	132	078	. .	58.9	24 14 42.1	688	+ 27.0	75 21 30.3	
2	305 28	10 4.1	2.6	7.1	26.8	22	615	584	594	589	620	58.8	305 31 10.0	721	− 1 24.5	356 36 6.7	+ 1.0
3	33 16	3.0	1.6	8.1	28.1	24	485	530	. .	644	618	58.8	33 19 40.1	. .	+ 39.9	84 26 41.2	− 0.2
4	10 30	1.3	28.4	4.8	24.2	22	. .	. .	621	. .	. .	58.8	10 33 7.4	745	+ 11.3	61 39 39.9	− 0.2
5																	
6	307 46	2.4	2.2	6.0	26.5	24	620	610	596	652	661	58.8	307 49 40.0	750	− 1 18.2	358 54 43.0	− 0.5
7	296 10	2.8	2.5	5.9	26.9	27	711	540	. .	670	795	58.8	296 14 24.7	. .	− 2 2.8	347 18 43.1	+ 0.2
8	18 16	3.2	1.2	6.2	26.5	28	502	502	. .	618	628	58.8	18 20 40.6	. .	+ 20.2	69 27 22.0	+ 5.5
9	31 56	5.7	5.0	11.1	0.7	23	005	061	. .	145	172	58.8	31 59 20.7	754	+ 37.8	83 6 19.7	+ 0.7
10	350 16	4.4	3.3	7.6	28.2	27	990	030	. .	122	091	58.8	350 20 34.9	. .	− 10.4	41 26 45.7	− 0.2
11	331 10	6.1	4.9	7.8	29.1	26	825	925	. .	010	922	58.8	331 14 19.2	. .	− 33.5	22 20 6.9	− 1.3
12	19 12	6.4	4.3	10.3	0.5	23	280	. .	. .	. .	460	58.8	19 15 24.8	770	+ 21.4	70 22 7.4	− 3.7
13	19 12	6.4	4.3	10.3	0.5	24	. .	085	. .	195	. .	58.8	19 15 36.4	. .	+ 21.4	70 22 19.0	− 3.7
14	62 38	4.2	3.9	9.3	28.5	27	. .	980	. .	835	. .	58.8	62 39 58.4	793	+ 1 58.4	113 48 18.0	− 3.8
15	61 28	4.5	5.2	10.5	0.9	26	304	285	. .	380	388	58.8	61 32 9.6	. .	+ 1 53.0	112 40 23.8	− 1.2
16	293 8	5.1	5.2	7.8	28.4	27	070	024	. .	081	210	58.8	293 12 18.4	794	− 2 22.6	340 16 17.0	+ 1.6
17	359 48	7.3	5.7	10.7	1.0	26	300	368	. .	437	456	58.8	359 52 12.0	. .	− 0.1	50 58 33.1	+ 1.0
18	43 40	5.7	5.2	10.0	0.2	22	. .	. .	209	. .	. .	58.8	43 43 6.7	. .	+ 58.8	94 50 26.7	+ 1.0
19	307 28	2.3	1.6	4.8	24.7	24	. .	860	866	885	. .	58.8	307 31 42.9	800	− 1 20.0	358 36 44.1	+ 1.0
20	19 24	13.5	13.6	16.6	10.1	14	. .	802	818	020	. .	59.1	19 25 23.5	532	+ 20.4	70 32 5.1	
21	16 16	13.0	9.0	14.1	7.0	20	. .	475	. .	. .	. .	59.1	16 18 46.9	532	+ 16.9	67 25 25.0	− 1.3
22																	
23	18 48	11 29.8	28.7	1.8	22.9	24	. .	375	398	458	. .	59.3	18 52 34.0	734	+ 20.7	69 59 15.9	
24	49 46	10 14.7	14.4	19.3	10.3	23	. .	148	. .	180	. .	60.0	49 49 31.8	670	+ 1 10.7	100 57 3.7	− 6.8
25	24 20	9.5	7.3	13.0	2.9	22	. .	637	. .	. .	. .	60.0	24 23 16.8	664	+ 27.0	75 30 5.0	+ 1.7
26	37 50	10 15.4	14.3	19.0	10.8	26	468	501	. .	. .	. .	60.0	37 54 23.2	652	+ 46.4	89 1 30.8	− 5.4
27	37 18	8.4	7.8	13.0	4.5	26	. .	. .	. .	502	505	60.0	37 22 16.4	. .	+ 45.5	88 29 23.1	− 5.4
28	310 14	14.0	11.9	15.9	5.4	19	. .	. .	. .	744	710	60.0	310 16 26.7	647	− 1 9.9	1 21 38.0	+79.8
29																	
30	55 22	12.0	12.0	17.2	7.7	20	. .	. .	. .	693	742	59.5	55 24 50.6	665	+ 1 26.3	106 32 38.1	+ 1.3
31																	
32	11 44	18.7	16.2	22.3	13.7	22	196	224	. .	260	286	59.5	11 47 20.6	690	+ 12.5	62 53 54.3	− 2.9
33	307 46	8.2	7.9	10.4	1.6	24	090	124	094	. .	. .	59.5	307 49 37.8	694	− 1 17.2	338 54 41.8	− 0.9
34	31 56	4.5	2.4	8.3	28.5	23	. .	. .	. .	195	253	59.5	31 59 20.3	700	+ 37.5	83 6 19.0	0.0
35	21 42	9 26.1	24.5	29.9	19.6	21	474	647	. .	710	820	59.5	21 44 48.8	. .	+ 24.0	72 51 34.0	
36	27 38	7.5	6.6	11.4	2.1	24	097	132	. .	200	218	59.5	27 41 39.0	. .	+ 31.6	78 48 31.8	− 0.4
37	19 18	9 21.5	19.4	23.6	13.8	24	. .	. .	. .	. .	909	59.5	19 21 32.3	712	+ 21.2	70 28 14.7	− 3.5
38	26 14	11.2	9.7	15.5	5.7	20	867	926	. .	014	036	59.5	26 16 53.8	720	+ 29.8	77 23 44.8	− 0.2
39	18 20	14.9	13.1	18.4	8.8	22	013	028	. .	088	108	59.5	18 23 13.9	722	+ 20.1	69 29 55.2	− 0.7
40	322 28	12.2	11.3	14.9	5.7	21	910	971	. .	988	998	59.5	322 31 9.6	722	− 46.3	13 36 44.5	− 0.7
41	27 36	10.2	9.8	14.3	5.5	21	. .	249	. .	339	. .	59.5	27 38 58.2	722	+ 31.6	78 45 51.0	− 1.9
42	336 22	12.6	12.0	13.7	5.5	27	483	558	. .	602	648	59.5	336 26 37.3	. .	− 26.4	27 32 22.1	− 0.7
43	52 52	10.5	9.7	15.0	6.6	27	932	951	. .	018	070	59.5	52 56 40.9	728	+ 1 20.0	104 4 22.1	− 0.5
44	35 14	8.5	7.1	11.9	3.9	27	070	108	. .	265	280	59.5	35 18 26.0	. .	+ 42.8	86 25 30.0	+ 0.2
45	38 56	3.5	1.3	6.4	27.8	21	. .	885	. .	043	. .	59.5	38 59 0.7	731	+ 49.0	90 6 10.9	− 0.3
46	23 32	17.0	15.0	20.1	10.6	21	. .	195	. .	285	. .	59.5	23 35 3.1	. .	+ 26.5	74 41 50.8	− 0.4
47	29 22	17.1	15.6	21.4	11.4	23	. .	148	. .	200	. .	59.5	29 25 33.3	738	+ 34.2	70 32 28.7	− 1.0
48	50 10	9.0	8.0	12.8	3.9	28	. .	470	. .	460	. .	59.5	50 12 12.1	. .	+ 1 12.7	101 19 46.0	

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
2	30.392	36.9	72.3
5, 6	30.391	33.9	71.2
16	30.398	28.6	71.0

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
1	− 22 46.8	− 15 16.0
20	− 18 53.6	+ 15 40.2
23	− 18 39.1	+ 15 54.5
35	− 22 0.9	+ 16 22.5

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Mar. 23	1	κ Draconis . . .	F.	.	. .	. .	0.9	7.0	13.5	19.8	25.7	. .	. .	27 13.36	− 0.09	. .	+41.79	12 27 55.06	− 0.19
	2	Nemausa . . .	F.	3	53.9	56.5	57.9	3.8	5.5	7.9	14.0	15.9	18.3	36 5.97	+ 0.08	. .	+41.79	12 36 47.84	. .
	3	Calliope . . .	F.	.	. .	. .	. .	. .	. .	2.4	6.6	8.2	11.0	44 58.22	+ 0.07	. .	+41.79	12 45 40.08	. .
	4	Polaris, S. P. . .	F.	.	. .	. .	24.0	0.0	37.0	11.0	. .	. .	. .	9 36.28	+ 2.82	. .	+41.80	1 10 20.86	− 0.36
	5	α Virginis . . .	F.	3	24.4	27.1	28.8	35.0	37.0	39.0	45.4	47.0	49.5	17 37.02	+ 0.09	+41.81	+41.80	13 18 18.91	0.00
	6	ε Pegasi	T.	.	49.7	52.4	54.0	0.3	2.3	4.4	10.4	12.1	14.8	37 2.27	− 0.02	+41.88	+41.82	21 37 44.07	− 0.08
	7	Mercury II, N. .	T.	3	31.5	34.2	35.8	42.0	44.2	46.2	52.4	54.0	56.6	37 44.10	− 0.04	. .	+41.83	22 38 25.89	− 0.23
24	8	Sun I, N. . . .	T.	3	8.2	10.5	12.1	18.2	20.4	22.3	28.5	30.1	32.8	13 20.34	− 0.03	. .	+41.84	0 14 2.15	. .
	9	Sun II, S. . . .	T.	.	17.0	19.4	21.0	27.1	29.3	31.2	37.4	38.9	41.5	15 29.20	− 0.03	. .	+41.84	0 16 11.01	. .
	10	λ Ursæ Minoris, S.P.	T.	.	40.0	48.0	2.0	. .	. .	. .	. .	. .	. .	54 18.03	− 0.65	. .	+41.90	19 55 0.35	+ 0.45
	11	F Præsepe . . .	T.	3	16.4	19.1	20.9	27.4	29.5	31.8	38.3	40.1	42.7	31 29.58	0.00	. .	+41.90	8 32 11.48	+ 2.71
	12	L Præsepe . . .	T.	.	24.0	26.6	28.5	34.9	37.1	39.2	45.7	47.5	50.2	33 37.08	0.00	. .	+41.90	8 34 18.98	+ 2.70
	13	ε Hydræ	T.	3	56.6	59.3	0.8	6.8	8.9	11.0	17.2	18.7	21.3	39 8.96	− 0.02	+41.96	+41.90	8 39 50.84	− 0.06
	14	ι Ursæ Majoris, (R.)	T.	3	14.4	18.0	20.5	29.7	32.8	35.9	45.1	47.3	51.3	49 32.78	− 0.15	. .	+41.90	8 50 14.53	+ 0.19
	15	κ Cancri	T.	.	. .	. .	53.6	55.7	57.7	59.9	2.0	. .	. .	59 57.77	− 0.01	+41.92	+41.90	9 0 39.66	− 0.02
	16	Mars I, S. . . .	T.	3	20.5	23.2	24.9	. .	. .	. .	42.0	43.7	46.3	14 33.43	− 0.01	. .	+41.91	9 15 15.33	. .
	17	Mars II, N. . .	T.	3	. .	. .	29.9	32.1	34.1	36.4	38.5	. .	. .	14 34.19	− 0.01	. .	+41.91	9 15 16.09	. .
	18	α Hydræ	T.	.	15.7	18.3	19.8	26.0	28.0	30.1	36.3	37.9	40.4	20 28.06	− 0.04	+41.87	+41.91	9 21 9.93	+ 0.04
	19	β Cephei, S. P. .	T.	3	. .	. .	26.0	19.9	13.4	7.8	2.0	. .	. .	26 13.84	− 0.02	. .	+41.91	21 26 55.73	+ 0.01
	20	ε Leonis	T.	3	30.2	33.0	34.7	41.3	43.7	45.9	52.5	54.3	57.0	37 43.62	0.00	+41.90	+41.91	9 38 25.53	0.00
	21	μ Leonis	T.	.	23.9	26.7	28.5	35.3	37.5	39.8	46.7	48.4	51.2	44 37.56	0.00	+41.81	+41.91	9 45 19.27	− 0.05
	22	Moon I, N. . .	T.	3	26.3	28.9	30.6	37.0	39.1	41.4	47.8	49.4	52.0	49 39.17	− 0.01	. .	+41.91	9 50 21.07	+71.17
	23	α Leonis	T.	3	30.1	32.6	34.2	40.5	42.6	44.6	51.0	52.5	55.2	0 42.59	− 0.01	+41.95	+41.91	10 1 24.49	− 0.05
	24	δ Leonis, (R.) . .	T.	3	14.5	17.1	18.7	25.5	27.6	29.8	36.2	38.0	40.7	6 27.57	− 0.13	. .	+41.92	11 7 9.36	− 0.05
	25	ο Cephei, S. P. .	T.	3	3.5	56.7	52.4	36.5	31.2	25.9	9.9	6.0	59.3	12 31.27	− 0.02	. .	+41.92	23 13 13.17	− 0.02
	26	τ Leonis, (R.) . .	T.	3	19.2	21.7	23.1	29.3	31.4	33.5	39.5	41.2	43.5	20 31.38	− 0.12	. .	+41.92	11 21 13.18	+ 0.03
	27	υ Leonis	T.	3	21.6	24.0	25.6	31.7	33.7	35.7	41.9	43.5	46.0	29 33.74	− 0.03	+41.97	+41.92	11 30 15.63	− 0.06
	28	β Leonis, (R.) . .	T.	.	29.3	31.9	33.6	39.8	41.9	44.0	50.3	52.0	54.7	41 41.94	− 0.13	. .	+41.93	11 42 23.74	+ 0.06
	29	γ Ursæ Majoris . .	T.	.	54.3	59.0	1.4	12.0	15.6	19.1	29.6	31.8	36.5	46 15.48	+ 0.03	. .	+41.93	11 46 57.44	+ 0.21
	30	η Virginis . . .	T.	3	19.3	21.8	23.4	29.5	31.5	33.5	39.6	41.2	43.8	12 31.51	− 0.06	+42.00	+41.93	12 13 13.38	− 0.08
	31	β Corvi	T.	3	36.9	39.7	41.3	48.0	50.2	52.4	59.0	0.6	3.5	26 50.18	− 0.06	+41.90	+41.93	12 27 32.05	+ 0.09
	32	α Cassiopeæ, S. P. .	T.	2	43.4	38.6	36.0	25.4	. .	18.2	7.2	4.3	59.8	32 21.61	+ 0.01	. .	+41.93	0 33 3.55	− 0.05
	33	21 Cassiopeæ, S. P. .	T.	.	2.2	53.2	47.6	. .	. .	. .	. .	. .	. .	36 17.38	− 0.04	. .	+41.93	0 36 59.27	+ 0.02
	34	32[1] Camelopardalis	T.	3	31.2	58.2	11.5	. .	. .	. .	50.3	6.5	30.6	47 31.05	+ 0.69	. .	+41.93	12 48 13.67	− 5.36
	35	32[2] Camelopardalis .	T.	3	. .	. .	58.4	18.6	39.6	58.6	19.3	. .	. .	47 38.82	+ 0.69	. .	+41.93	12 48 21.44	+ 1.40
	36	θ Virginis . . .	T.	3	17.2	19.7	21.3	27.4	29.4	31.4	37.6	39.2	41.7	2 29.43	− 0.03	+41.95	+41.94	13 3 11.34	− 0.04
	37	Polaris, S. P. .	T.	.	. .	. .	31.0	6.0	44.0	19.0	. .	. .	. .	9 43.28	− 0.75	. .	+41.94	1 10 24.47	+ 3.57
	38	A Cassiopeæ, S. P. .	T.	3	. .	. .	58.9	53.2	46.9	41.0	35.2	. .	. .	20 47.06	− 0.02	. .	+41.94	1 21 28.98	+ 0.24
	39	ζ Virginis . . .	T.	3	8.1	10.8	12.2	18.3	20.4	22.4	28.6	30.2	32.7	27 20.41	− 0.03	+41.93	+41.94	13 28 2.32	+ 0.01
	40	η Ursæ Majoris . .	T.	3	23.1	26.6	28.4	38.6	41.7	45.0	54.5	56.7	0.5	41 41.68	+ 0.03	. .	+41.94	13 42 23.65	− 0.30
	41	50 Cassiopeæ, S. P. .	T.	.	13.1	4.4	59.3	40.2	33.4	26.7	7.3	2.2	54.2	51 33.42	− 0.03	. .	+41.94	1 52 15.33	− 0.07
	42	α Draconis . . .	T.	.	41.8	48.0	51.5	6.0	10.7	15.9	30.2	33.8	39.7	0 10.84	+ 0.05	. .	+41.94	14 0 52.83	+ 0.27
	43	α Bootis, (R.) . .	T.	3	. .	. .	56.0	58.2	0.4	2.5	4.6	. .	. .	9 0.33	− 0.13	. .	+41.94	14 9 42.14	− 0.05
	44	ι Cassiopeæ, S. P. .	T.	2	. .	. .	44.7	39.4	34.4	29.2	24.3	. .	. .	17 34.42	− 0.02	. .	+41.95	2 18 16.35	+ 0.14
	45	5 Ursæ Minoris .	T.	3	19.8	30.6	37.4	3.2	11.8	20.4	46.4	52.7	3.1	27 11.71	+ 0.18	. .	+41.95	14 27 53.84	+ 0.60
	46	ε Bootis	T.	3	21.1	24.1	25.8	32.7	35.0	37.3	44.1	46.0	48.9	38 35.00	0.00	+41.92	+41.95	14 39 16.95	+ 0.02
	47	α^2 Libræ	T.	3	44.6	47.3	48.8	55.2	57.2	59.4	5.6	7.3	10.0	42 57.27	− 0.05	+41.92	+41.95	14 43 39.17	+ 0.01
	48	β Ursæ Minoris . .	T.	.	. .	. .	. .	19.8	27.9	35.8	58.5	4.4	14.8	50 27.87	+ 0.08	. .	+41.95	14 51 9.90	+ 0.31
	49	β Bootis	T.	3	3.6	7.2	9.0	17.2	20.0	22.8	30.5	32.8	36.0	56 19.90	− 0.14	. .	+41.95	14 57 1.71	+ 0.03

1.19.34.38.41.44.45.48. Bisections at sets B and D.
2.3. Wire A used.
10. R. A. observed over wires I, II, III.
22. Bisections at wires II–VI.
35. Bisections at set C.
36. Seems 1 rev. wrong in N. P. D.
44. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	328 20	5.5	4.5	7.3	29.0	24	. .	. .	. .	360	384	59.5	328 23 39.3	. .	− 37.4	19 29 23.1	− 2.3
2	39 8	6.2	4.5	10.4	1.2	29	. .	608	. .	640	. .	59.5	39 10 27.1	742	+ 49.4	90 17 37.7	− 4.6
3	24 8	7.7	6.0	11.1	1.7	29	. .	. .	. .	415	406	59.5	24 10 24.5	. .	+ 27.3	75 17 13.0	− 1.7
4	307 28	6.6	6.5	10.0	0.3	24	. .	270	284	343	. .	59.5	307 31 39.8	. .	− 1 19.1	358 36 41.9	+ 0.2
5	49 18	10.5	9.3	13.6	5.2	22	. .	. .	. .	016	. .	59.5	49 21 8.1	748	+ 1 10.7	100 28 39.0	− 1.5
6	29 34	7.8	6.5	11.0	29.9	20	. .	. .	. .	432	366	60.2	29 36 40.8	687	+ 34.0	80 43 36.0	+ 1.5
7	49 24	3.4	3.6	7.5	28.6	25	. .	653	. .	758	. .	60.2	49 27 59.5	634	+ 1 9.1	100 35 29.8	− 6.7
8	36 56	4.5	4.8	8.5	0.0	20	580	580	. .	. .	. .	60.2	36 58 42.8	586	+ 44.1	88 5 48.1	− 5.3
9	37 28	2.9	2.2	6.6	27.7	21	. .	. .	. .	220	212	60.2	37 30 49.7	. .	+ 44.9	88 37 55.8	− 5.4
10																	
11	18 36	6.6	3.7	10.8	1.7	22	. .	224	. .	300	. .	60.1	18 39 9.4	. .	+ 20.0	69 45 50.6	+ 5.8
12	18 30	10.4	7.8	13.4	3.6	21	. .	858	. .	010	. .	60.1	18 33 7.5	. .	+ 19.9	69 39 48.6	+ 5.9
13	31 56	1.8	29.3	6.0	27.4	23	. .	350	. .	412	. .	60.1	31 59 21.8	654	+ 37.1	83 6 20.1	+ 1.1
14	189 36	0.6	29.0	4.9	24.2	23	750	801	. .	934	931	60.1	189 39 27.0	. .	+ 10.1	41 26 44.1	− 0.8
15	27 38	9 27.3	24.7	0.6	21.8	24	. .	940	. .	920	. .	60.1	27 41 40.5	. .	+ 31.3	71 48 33.0	+ 0.8
16	19 20	12.4	10.6	14.5	0.6	22	. .	868	. .	798	. .	60.0	19 23 21.8	. .	+ 21.0	70 30 4.0	− 3.5
17	19.20	12.4	10.6	14.5	0.6	22	. .	. .	. .	148	200	60.0	19 23 10.8	. .	+ 21.0	70 29 53.0	− 3.5
18	46 54	6.5	4.0	10.0	1.8	26	. .	844	. .	940	. .	60.0	46 58 19.8	. .	+ 1 3.9	98 5 44.9	+ 0.2
19	288 52	7.5	6.6	9.5	1.6	23	. .	628	720	588	. .	60.0	288 55 30.8	672	− 2 52.6	339 58 59.4	+ 2.6
20	14 26	9.6	6.0	10.8	3.0	29	. .	040	. .	098	. .	60.0	14 30 55.0	. .	+ 15.5	65 37 31.7	− 0.3
21	12 12	11.0	8.3	13.1	5.4	25	. .	970	. .	108	. .	60.0	12 16 10.8	. .	+ 13.0	63 22 45.0	+ 1.3
22	25 4	7.0	5.0	10.4	2.0	28	460	668	118	940	111	60.0	25 8 35.2	. .	+ 28.1	76 15 24.5	
23	26 12	9.5	6.5	13.8	4.3	28	. .	932	. .	006	. .	60.0	26 16 54.6	687	+ 29.6	77 23 45.4	+ 0.4
24	162 18	5.8	6.2	10.6	29.7	21	. .	718	. .	740	. .	59.5	162 21 0.3	710	− 19.2	68 45 40.1	+ 1.0
25	286 16	4.9	5.1	6.6	27.8	28	. .	160	. .	282	. .	59.5	286 20 37.6	. .	− 3 22.9	337 23 35.9	+ 2.3
26	144 38	8.7	10.0	14.3	2.7	23	. .	. .	. .	640	686	59.5	144 41 32.4	. .	− 42.7	86 25 31.5	+ 1.7
27	38 54	10.1	8.0	14.0	4.6	29	. .	420	. .	466	. .	59.5	38 59 2.0	. .	+ 48.8	90 6 12.0	+ 0.8
28	156 22	4.8	6.3	10.6	29.3	21	290	253	. .	360	360	59.5	156 24 53.6	. .	− 26.3	74 41 53.9	+ 1.8
29	344 24	8.6	6.0	10.2	2.0	27	. .	848	. .	940	. .	59.5	344 28 36.2	. .	− 16.8	35 34 40.6	+ 1.2
30	38 46	10.8	10.0	15.0	5.8	22	. .	424	. .	498	. .	59.5	38 49 16.4	727	+ 48.7	89 56 26.3	0.0
31	61 28	4.4	3.6	9.2	1.6	26	. .	482	. .	510	. .	59.5	61 32 12.2	. .	+ 1 51.3	112 40 24.7	− 1.3
32	274 48	3.4	3.4	4.5	26.1	28	. .	912	790	468	. .	59.5	274 53 58.6	729	−10 23.8	325 49 56.0	+ 5.9
33	293 6	7.5	7.3	10.0	0.8	24	413	564	. .	. .	. .	59.5	293 12 13.8	. .	− 2 20.4	344 16 14.6	+ 1.4
34	314 42	16.4	15.4	18.4	10.3	28	480	578	. .	592	570	59.5	314 46 54.9	. .	− 1 1.0	5 52 15.1	−17.6
35	314 42	16.4	15.4	18.4	10.3	29	690	728	. .	673	722	59.5	314 47 11.9	. .	− 1 1.0	5 52 32.1	− 0.6
36	43 38	8.0	6.6	12.4	3.8	30	. .	914	. .	010	. .	59.5	43 43 23.7	. .	+ 57.9	94 50 42.8	+16.7
37	307 28	8.0	6.8	9.4	2.4	24	224	264	278	314	344	59.5	307 31 40.3	733	− 1 18.7	358 36 42.8	+ 1.4
38	288 28	6.6	6.0	8.0	29.8	25	564	618	. .	631	510	59.5	288 31 58.6	. .	− 2 59.1	339 35 20.7	+ 0.8
39	38 44	11.4	9.8	16.4	6.6	26	. .	938	. .	064	. .	59.5	38 48 26.4	. .	+ 48.7	89 55 36.3	+ 0.4
40	348 52	14.7	12.8	16.6	8.8	24	. .	626	. .	792	. .	59.5	348 55 53.9	. .	− 11.9	40 2 3.2	+ 0.7
41	290 38	9.3	9.3	10.2	4.4	31	. .	168	. .	254	. .	59.5	290 43 27.9	740	− 2 39.1	341 47 10.0	+ 2.0
42	333 50	11.8	10.5	13.0	4.8	25	. .	734	. .	868	. .	59.4	333 54 7.6	. .	− 29.7	24 59 59.1	− 0.5
43	160 56	5.3	7.0	9.6	28.5	19	663	714	. .	958	843	59.4	160 58 30.1	. .	− 20.9	70 8 12.0	+ 1.8
44	285 40	13.4	13.8	15.4	7.1	22	772	760	. .	. .	. .	59.4	285 45 51.3	739	− 3 32.0	336 48 40.5	− 0.5
45	322 34	14.1	12.3	14.8	6.1	24	. .	550	. .	668	. .	59.4	322 37 50.8	. .	− 46.3	13 43 25.7	− 0.8
46	11 12	15.6	12.8	17.8	8.6	24	. .	804	. .	812	. .	59.4	11 55 15.6	. .	+ 12.1	62 22 28.9	+ 0.3
47	54 18	9.4	7.4	13.3	4.1	25	. .	330	. .	460	. .	59.4	54 21 59.5	. .	+ 1 24.5	105 29 45.2	+ 0.9
48	324 8	7.8	6.0	8.7	1.5	29	. .	. .	. .	880	849	59.4	324 13 5.1	. .	− 43.6	13 18 42.7	− 0.4
49	357 56	10.6	8.8	12.8	4.4	22	. .	754	. .	848	. .	59.4	357 59 20.5	. .	− 2.1	49 5 39.6	− 0.1

No.	Barom.	External Therm.	Attached Therm.		No.	MOON'S— Parallax.	Semi-diam.
	in.	°	°	*For summary of the elements of reduction see page* 3.		′ ″	′ ″
					22	− 25 33.3	+ 16 33.6

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	XI.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Mar. 24	1	48 Cephei, S. P.	T.	.	58.5	46.7	39.3	12.2	2.9	53.8	26.6	18.7	7.9	3 2.96	− 0.06	. .	+41.95	3 3 44.85	+ 0.19
	2	β Libræ	T.	.	4.3	6.9	8.3	14.5	16.6	18.6	24.7	26.4	29.0	9 16.59	− 0.04	+41.97	+41.95	15 9 58.50	− 0.03
	3	γ^2 Ursæ Minoris	T.	3	37.5	45.8	50.6	11.0	17.6	24.4	44.6	49.8	58.2	19 17.72	+ 0.07	. .	+41.95	15 19 59.74	+ 0.25
	4	α Coronæ Borealis	T.	3	13.7	16.5	18.1	25.1	27.3	29.6	36.5	38.3	41.2	28 27.37	0.00	+41.93	+41.95	15 29 9.32	+ 0.02
	5	α Serpentis	T.	.	55.5	58.1	59.6	5.7	7.9	9.9	16.2	17.7	20.2	37 7.87	− 0.02	+41.87	+41.95	15 37 49.80	+ 0.08
	6	ε Serpentis	T.	.	23.8	26.2	27.9	34.0	36.1	38.2	44.2	45.8	48.3	43 36.06	− 0.02	+41.92	+41.95	15 44 17.99	+ 0.02
	7	ζ Ursæ Minoris	T.	.	. .	. .	49.2	58.6	8.1	18.6	29.1	. .	. .	49 8.68	+ 0.10	. .	+41.96	15 49 50.74	+ 0.30
	8	δ Scorpii	T.	3	41.0	44.0	45.5	52.1	54.4	56.6	3.3	5.0	7.6	52 54.39	− 0.06	+41.95	+41.96	15 53 36.29	+ 0.01
	9	β^1 Scorpii	T.	3	55.2	57.9	59.5	6.2	8.2	10.4	17.0	18.4	21.2	27 8.22	− 0.06	+42.00	+41.96	15 57 50.10	+ 0.01
	10	δ Ophiuchi	T.	3	35.4	38.0	39.6	45.6	47.6	49.6	55.7	57.4	59.9	7 47.64	− 0.02	+41.97	+41.96	16 8 29.57	+ 0.01
26	11	ε Pegasi	T.	3	49.4	52.0	53.6	59.7	1.8	3.8	10.1	11.6	14.2	36 1.80	− 0.10	+42.45	+42.46	21 36 44.16	− 0.01
	12	α Aquarii	T.	2	. .	. .	. .	. .	. .	. .	27.9	29.5	32.0	58 19.78	− 0.10	+42.41	+42.46	21 59 2.14	− 0.06
	13	Mercury II, C.	T.	3	27.4	30.1	31.6	. .	. .	. .	48.2	49.9	52.4	52 39.93	− 0.11	. .	+42.47	22 53 22.29	− 0.22
27	14	Sun I, N.	T.	3	1.4	3.7	5.6	11.6	13.6	15.9	21.9	23.4	26.0	24 13.68	− 0.10	. .	+42.48	0 24 56.06	. .
	15	Sun II, S.	T.	2	. .	. .	. .	22.4	24.5	26.6	30.7	32.2	34.7	26 22.48	− 0.10	. .	+42.48	0 27 4.86	. .
	16	Polaris	T.	3	18.0	. .	. .	. .	. .	. .	23.0	7.0	. .	9 42.80	+ 3.05	. .	+42.48	1 10 22.23	− 0.03
	17	α Ceti	T.	3	30.3	32.9	34.4	40.5	42.5	44.6	50.7	52.4	54.9	54 42.58	− 0.10	+42.50	+42.50	2 55 24.98	+ 0.02
	18	λ Ursæ Min., S. P.	T.	3	. .	. .	. .	49.0	1.0	12.0	28.0	. .	. .	54 13.55	+ 3.89	. .	+42.53	19 54 59.97	− 3.19
	19	15 Argus	T.	3	2.7	5.4	7.1	13.8	16.0	18.2	25.0	26.6	29.4	1 16.02	− 0.12	+42.63	+42.53	8 1 58.43	− 0.12
	20	N Præsepe	T.	3	54.7	57.4	59.0	5.4	7.6	9.9	16.3	18.0	20.8	30 7.68	− 0.10	. .	+42.53	8 30 50.11	+ 2.66
	21	ε Hydræ	T.	3	56.1	58.7	0.3	6.3	8.5	10.4	16.5	18.2	20.7	39 8.41	− 0.10	+42.55	+42.53	8 39 50.84	− 0.02
	22	ι Ursæ Majoris	T.	4	13.7	17.4	19.7	28.8	32.1	35.2	44.5	46.7	50.6	49 32.08	− 0.13	. .	+42.53	8 50 14.48	+ 0.21
	23	κ Cancri	T.	3	44.8	47.4	49.0	55.2	57.2	59.4	5.6	7.2	9.7	59 57.28	− 0.10	+42.45	+42.53	9 0 39.71	+ 0.08
	24	Mars I, S.	T.	3	12.1	14.7	16.3	. .	. .	. .	33.8	35.4	38.2	14 25.08	− 0.10	. .	+42.54	9 15 7.52	. .
	25	Mars II, N.	T.	3	. .	. .	21.5	23.7	26.0	28.1	30.2	. .	. .	14 25.89	− 0.10	. .	+42.54	9 15 8.33	. .
	26	l Leonis	T.	3	28.3	31.0	32.5	38.6	40.7	42.7	49.2	50.7	53.2	41 40.77	− 0.10	+42.54	+42.55	10 42 23.22	+ 0.08
	27	α Ursæ Majoris	T.	3	30.3	36.1	39.5	52.4	56.8	1.4	14.5	18.2	23.5	54 56.97	− 0.18	. .	+42.55	10 55 39.34	− 0.60
	28	o Cephei, S. P.	T.	3	2.4	55.7	51.7	35.6	30.5	25.0	9.3	5.3	58.7	12 30.47	+ 0.18	. .	+42.55	23 13 13.20	− 0.06
	29	τ Leonis	T.	3	18.6	21.0	22.5	28.7	30.7	32.7	38.8	40.4	43.1	20 30.72	− 0.10	+42.54	+42.55	11 21 13.17	+ 0.02
	30	λ Draconis	T.	3	. .	. .	44.1	50.0	56.4	2.4	8.4	. .	. .	22 56.24	− 0.23	. .	+42.55	11 23 38.56	+ 0.44
	31	υ Leonis	T.	3	21.0	23.5	25.1	31.2	33.2	35.2	41.4	42.9	45.4	29 33.21	− 0.10	+42.57	+42.55	11 30 15.66	− 0.03
	32	β Leonis, (R.)	T.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	33	γ Ursæ Majoris	T.	3	54.2	58.4	1.2	11.5	15.1	18.6	29.2	31.8	36.3	46 15.14	− 0.15	. .	+42.55	11 46 57.54	+ 0.32
	34	o Virginis	T.	3	38.4	41.1	42.6	48.7	50.9	52.8	59.0	0.6	3.3	57 50.82	− 0.10	+42.56	+42.55	11 58 33.27	− 0.07
	35	4 Draconis	T.	3	24.0	37.0	44.5	15.0	24.5	35.0	4.6	12.5	25.4	5 24.72	− 0.39	. .	+42.56	12 6 6.89	+ 0.76
	36	η Virginis, (R.)	T.	3	. .	. .	. .	31.2	33.2	35.2	39.1	40.9	43.3	12 31.13	− 0.10	. .	+42.56	12 13 13.59	+ 0.12
	37	β Corvi	T.	3	36.4	39.2	40.8	47.5	49.7	52.0	58.5	0.2	2.9	26 49.69	− 0.11	+42.46	+42.56	12 27 32.14	+ 0.16
	38	α Cassiopeæ, S. P.	T.	.	42.5	37.8	35.2	24.2	20.7	17.3	6.3	3.4	59.1	32 20.72	+ 0.12	. .	+42.56	0 33 3.40	− 0.20
	39	21 Cassiopeæ, S. P.	T.	3	. .	. .	31.6	24.4	16.9	9.0	1.7	. .	. .	36 16.75	+ 0.26	. .	+42.56	0 36 59.57	+ 0.32
	40	Moon II, N.	T.	4	21.8	24.4	26.0	32.3	34.3	36.4	42.7	44.3	47.0	52 34.36	− 0.10	. .	+42.56	12 53 16.82	−69.34
	41	θ Virginis	T.	3	16.7	19.1	20.7	26.8	28.9	31.0	37.0	38.6	41.1	2 28.88	− 0.10	+42.59	+42.56	13 3 11.34	− 0.06
	42	Polaris, S. P.	T.	2	. .	. .	25.0	59.0	36.0	11.0	49.0	. .	. .	9 36.32	+ 3.02	. .	+42.56	1 10 21.90	+ 1.72
	43	α Virginis	T.	3	24.1	26.6	28.3	34.3	36.5	38.5	44.8	46.3	49.0	17 36.49	− 0.11	+42.58	+42.56	13 18 18.94	− 0.01
	44	A Cassiopeæ, S. P.	T.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	45	ζ Virginis	T.	3	7.8	10.2	11.8	17.8	19.9	21.8	28.0	29.5	32.2	27 19.89	− 0.10	+42.55	+42.56	13 28 2.35	+ 0.01
	46	η Ursæ Majoris, (R.)	T.	3	22.6	26.5	28.8	38.4	41.7	44.8	54.4	56.6	0.8	41 41.62	− 0.13	. .	+42.57	13 42 24.06	+ 0.05
	47	η Bootis, (R.)	T.	3	32.4	35.3	36.8	43.3	45.5	47.9	54.0	55.7	58.4	47 45.48	− 0.10	. .	+42.57	13 48 27.95	− 0.01
	48	50 Cassiopeæ, S. P.	T.	2	11.3	3.2	58.6	45.2	38.4	. .	. .	. .	. .	51 32.14	+ 0.24	. .	+42.57	1 52 14.95	− 0.25
	49	α Draconis, (R.)	T.	3	. .	. .	1.4	5.4	10.5	14.9	20.3	. .	. .	0 10.48	− 0.19	. .	+42.57	14 0 52.86	+ 0.24
	50	α Bootis, (R.)	T.	3	46.7	49.5	51.2	57.8	59.8	2.0	8.4	10.1	12.9	8 59.82	− 0.10	. .	+42.57	14 9 42.29	− 0.05

1.3.7.30.35.39.48. Bisections at sets B and D.
11.12. Seems five revs. wrong in N. P. D.
14.15. Both limbs changed five revs.

Number.	Circle Division.	MICROCSOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	296 6	7.6	7.0	9.0	1.6	28	508	508	. .	540	510	59.3	296 10 44.4	739	− 2 2.8	347 15 2.8	+ 3.1
2	47 42	13.4	10.8	17.4	8.8	26	. .	710	. .	911	. .	59.3	47 46 24.8	. .	+ 1 6.8	98 53 52.8	− 0.1
3	326 32	10.0	9.5	11.1	3.1	27	410	372	. .	428	430	59.3	326 36 30.1	. .	− 40.0	13 42 11.3	+ 1.9
4	11 40	16.9	14.1	19.1	10.4	25	. .	613	. .	700	. .	59.3	11 44 9.9	. .	+ 12.6	62 50 43.7	+ 2.2
5	31 58	8.5	7.3	12.5	4.5	28	. .	306	. .	380	. .	59.3	32 2 44.0	. .	+ 38.0	83 9 43.2	+ 2.0
6	33 56	9.0	7.6	13.0	3.3	27	. .	826	. .	832	. .	59.3	34 0 36.1	. .	+ 41.0	85 7 38.3	+ 0.5
7	320 38	11.0	9.8	12.0	2.0	28	992	. .	999	. .	960	59.3	320 42 54.4	. .	− 49.7	11 48 25.9	+ 1.0
8	61 2	13.5	11.5	18.5	8.6	27	. .	240	. .	258	. .	59.3	61 6 31.9	. .	+ 1 49.8	112 14 42.9	− 0.7
9	58 14	11.0	9.0	15.6	6.7	27	820	. .	. .	. .	852	59.2	58 18 38.2	. .	+ 1 38.2	109 26 37.6	+ 0.4
10	42 10	16.0	14.2	20.2	11.3	25	. .	330	. .	348	. .	59.2	42 14 5.1	752	+ 55.2	93 21 21.5	+ 2.1
11	29 34	10 27.5	26.5	29.0	21.3	24	. .	088	. .	203	. .	58.0	29 37 56.4	547	+ 33.0	80 44 50.6	+76.1
12	39 48	10 20.5	19.5	24.6	14.6	22	. .	. .	. .	988	974	58.0	39 51 33.9	537	+ 48.3	90 58 43.4	+79.1
13	48 12	10 26.1	23.9	29.3	19.8	21	. .	674	. .	702	. .	58.0	48 15 17.4	496	+ 1 4.1	99 22 42.7	− 6.3
14	35 46	10 17.2	16.2	20.2	11.0	23	078	070	. .	. .	. .	58.0	35 48 14.1	460	+ 41.0	86 55 16.3	− 5.2
15	36 18	16.1	15.6	19.3	10.9	23	. .	. .	. .	. .	668	58.0	36 20 21.8	. .	+ 41.8	87 27 24.8	− 5.2
16																	
17	35 16	14.8	13.8	18.9	14.3	20	. .	154	. .	258	. .	58.0	35 18 45.6	430	+ 40.0	86 25 46.8	+ 1.4
18	307 46	12.4	12.0	14.6	7.3	23	. .	800	779	780	. .	57.0	307 49 35.2	499	− 1 13.8	358 54 42.6	+ 0.5
19	62 44	14.4	13.5	18.0	10.7	24	. .	382	. .	402	. .	57.0	62 47 47.0	. .	+ 1 51.2	113 55 59.4	− 2.0
20	18 10	16.4	15.0	18.8	10.5	23	. .	750	. .	860	. .	57.0	18 13 39.3	. .	+ 19.0	69 20 19.5	+ 6.0
21	31 56	7.8	6.9	10.8	3.0	23	. .	204	. .	340	. .	57.0	31 59 23.0	. .	+ 36.0	83 6 20.2	+ 1.3
22	350 16	10.5	9.4	12.6	5.6	27	544	634	. .	. .	732	57.0	350 20 32.9	523	− 9.8	41 26 44.3	− 0.2
23	27 38	12.0	10.8	14.5	7.5	24	. .	052	. .	168	. .	57.0	27 41 39.9	523	+ 30.3	78 48 31.4	− 0.7
24	19 26	12.0	10.2	13.2	5.0	26	846	. .	. .	. .	928	57.0	19 30 21.5	. .	+ 20.5	70 37 3.2	− 3.4
25	19 26	12.0	10.2	13.2	5.0	25	. .	710	. .	. .	. .	57.0	19 30 4.1	. .	+ 20.5	70 36 45.8	− 3.4
26	27 34	14.6	14.4	17.8	10.0	29	. .	103	. .	258	. .	56.8	27 39 0.3	. .	+ 30.5	78 45 52.0	− 0.8
27	336 22	15.2	14.3	16.0	8.6	27	. .	420	. .	508	. .	56.8	336 26 33.9	. .	− 25.4	27 32 29.7	− 1.9
28	286 16	12.8	13.4	13.8	5.8	27	. .	232	. .	250	. .	56.8	286 20 26.5	569	− 3 16.2	337 23 31.5	− 1.3
29	35 14	16.2	15.3	19.6	11.4	26	. .	908	. .	980	. .	56.8	35 18 27.5	. .	+ 41.3	86 25 30.0	+ 0.2
30	328 46	13.9	13.5	14.3	6.4	29	. .	. .	. .	250	200	56.8	328 50 58.7	. .	− 35.2	19 56 44.7	− 0.8
31	38 54	12.2	10.4	15.0	8.0	29	392	. .	. .	. .	502	56.8	38 59 1.5	. .	+ 47.2	90 6 9.9	− 1.3
32	156 22	16.7	19.0	22.5	10.6	20	. .	. .	. .	830	761	56.8	156 24 54.1	. .	− 25.5	74 31 52.6	+ 1.7
33	344 24	16.7	14.9	17.6	10.5	27	. .	274	. .	380	. .	56.8	344 28 33.1	. .	− 16.2	35 34 38.1	− 0.6
34	29 22	16.4	15.1	19.9	11.2	23	. .	492	. .	618	. .	56.8	29 25 35.7	. .	+ 32.8	80 32 29.7	+ 0.1
35	320 30	20.0	19.0	21.0	5.3	24	. .	043	. .	048	. .	56.8	320 33 44.2	. .	− 48.0	11 39 17.4	− 3.7
36	141 8	6.6	9.8	12.5	1.8	20	. .	. .	. .	442	459	56.8	141 10 39.4	579	− 47.0	89 56 28.8	+ 2.5
37	61 28	4.5	4.5	8.7	2.4	26	. .	960	. .	102	. .	56.8	61 32 18.0	. .	+ 1 47.6	112 40 26.8	+ 0.3
38	274 48	10.4	10.7	10.0	3.0	28	. .	784	. .	800	. .	56.8	274 52 48.2	. .	−10 4.5	325 49 4.9	+ 3.9
39	293 6	11.6	12.0	13.4	6.6	33	. .	959	. .	966	. .	56.8	293 12 10.1	592	− 2 15.9	344 16 15.4	+ 3.2
40	40 8	9.2	8.5	12.8	4.8	24	650	. .	022	. .	301	56.8	40 11 50.8	. .	+ 49.5	91 19 1.5	
41	43 40	16.8	16.0	21.0	11.9	21	. .	770	. .	885	. .	56.7	43 43 9.9	598	+ 56.1	94 50 27.2	+ 0.9
42	307 28	11.0	10.5	12.5	5.0	23	. .	986	045	006	. .	56.7	307 31 36.6	. .	− 1 16.3	358 36 41.5	+ 1.1
43	49 18	12.7	12.0	15.5	8.6	22	. .	200	. .	240	. .	56.7	49 21 11.7	. .	+ 1 8.3	100 28 41.2	+ 0.4
44	288 28	11.7	12.0	12.6	5.0	25	050	028	. .	. .	. .	56.7	288 31 52.3	602	− 2 53.5	339 35 20.0	+ 0.9
45	38 44	13.7	13.0	16.6	8.5	27	. .	100	. .	134	. .	56.7	38 48 27.3	. .	+ 47.2	89 55 35.7	+ 0.2
46	191 2	18.8	19.0	21.4	10.5	17	. .	628	. .	782	. .	56.7	191 4 7.7	. .	+ 11.5	40 2 2.0	+ 0.2
47	160 6	12.1	14.0	16.6	5.8	24	. .	928	108	120	. .	56.7	160 9 54.8	. .	− 21.2	70 56 47.6	+ 0.2
48	290 38	14.5	14.7	15.8	9.0	30	. .	413	. .	. .	. .	56.7	290 43 18.4	. .	− 2 34.2	341 47 5.4	− 1.8
49	206 4	15.6	15.3	17.2	8.0	17	. .	. .	. .	172	. .	56.7	206 5 55.0	. .	+ 27.5	24 59 58.7	− 0.1
50	160 56	7.5	10.0	11.5	0.5	19	. .	714	. .	723	. .	56.7	160 58 28.6	. .	− 20.3	70 8 12.9	+ 3.0

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
40	− 39 10.6	+ 16 39.1

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Mar. 27	1	ι Cassiopeæ, S. P.	T.	2	4.5	58.3	54.1	38.5	33.1	28.2	12.6	8.8	2.6	17 33.41	+ 0.18	. .	+42.57	14 18 16.16	+ 0.02
	2	5 Ursæ Minoris	T.	3	21.0	31.6	38.0	4.5	12.6	21.0	45.9	53.4	4.1	27 12.46	− 0.36	. .	+42.57	14 27 54.67	+ 1.27
	3	ε Bootis	T.	3	20.9	23.6	25.3	32.3	34.5	36.8	43.8	45.6	48.4	38 34.58	− 0.11	+42.51	+42.57	14 39 17.04	+ 0.05
	4	α^2 Libræ	T.	3	44.0	46.7	48.4	54.5	56.9	58.9	5.2	7.0	9.4	42 56.78	− 0.11	+42.55	+42.57	14 43 39.24	− 0.02
	5	β Ursæ Minoris	T.	3	42.2	51.8	57.8	21.0	28.5	36.5	59.3	5.3	15.0	50 28.60	− 0.30	. .	+42.57	14 51 10.87	+ 1.11
	6	β Bootis	T.	3	3.4	6.7	8.6	16.7	19.4	22.3	30.3	32.3	35.4	56 19.46	− 0.12	. .	+42.57	14 57 1.91	+ 0.16
	7	β Libræ	T.	3	3.7	6.3	7.8	14.0	16.0	18.2	24.3	26.0	28.4	9 16.08	− 0.11	+42.61	+42.58	15 9 58.55	− 0.04
	8	γ^2 Ursæ Minoris	T.	3	38.1	46.5	51.7	11.4	18.2	24.9	44.6	50.1	58.2	20 18.19	− 0.26	. .	+42.58	15 21 0.51	+ 0.85
30	9	Moon II, S.	F.	.	19.9	22.5	24.3	30.9	33.0	35.1	41.7	43.3	46.0	47 32.97	+ 0.32	. .	+42.94	15 48 16.23	−69.01
	10	δ Ophiuchi	F.	3	36.2	36.7	38.3	44.5	46.5	48.6	54.8	56.2	59.0	6 46.53	+ 0.26	+42.94	+42.94	16 7 29.73	+ 0.02
	11	τ Herculis	F.	.	48.8	52.3	54.6	3.5	6.5	9.4	18.3	20.5	24.3	15 6.47	− 0.05	. .	+42.94	16 15 49.36	+ 0.32
	12	α Scorpii	F.	.	. .	. .	35.8	38.0	40.3	42.6	44.8	. .	. .	20 40.29	+ 0.37	+42.95	+42.94	16 21 23.60	− 0.01
	13	d Herculis	F.	.	49.4	52.4	54.3	1.5	4.0	6.8	14.3	16.0	18.8	56 4.17	+ 0.07	. .	+42.94	16 56 47.18	+ 0.51
	14	Saturn I, N.	F.	2	52.8	55.8	57.2	. .	. .	. .	16.0	17.7	20.4	4 6.65	+ 0.34	. .	+42.94	17 4 49.93	. .
	15	Saturn II, S.	F.	2	. .	. .	2.9	5.0	7.4	9.5	11.4	. .	. .	4 7.23	+ 0.34	. .	+42.94	17 4 50.51	. .
	16	α Pegasi	T.	2	17.6	20.2	21.8	28.1	30.1	32.4	38.7	40.3	42.6	57 30.20	+ 0.28	+42.63	+42.83	22 58 13.31	+ 0.20
	17	Mercury II, N.	T.	3	35.2	37.6	39.7	45.4	47.4	49.4	55.7	57.4	59.9	13 47.52	+ 0.44	. .	+42.83	23 14 30.70	− 0.21
31	18	Sun I, S.	T.	3	32.7	35.3	36.8	43.0	45.0	47.0	53.2	54.9	57.4	38 45.03	+ 0.35	. .	+42.83	0 39 28.21	. .
	19	Sun II, N.	T.	3	. .	. .	49.9	52.0	54.0	56.0	58.0	. .	. .	40 53.97	+ 0.35	. .	+42.83	0 41 37.15	. .
	20	Polaris	T.	3	. .	. .	9.0	34.0	57.0	23.0	. .	. .	. .	9 57.62	−17.76	. .	+42.83	1 10 22.69	+ 2.67
	21	α Arietis	T.	3	50.2	52.8	54.4	1.0	3.3	5.4	12.1	13.8	16.5	59 3.28	+ 0.21	+42.92	+42.83	1 59 46.32	− 0.08
	22	α Ceti	T.	3	29.5	32.0	33.5	39.6	41.7	43.8	49.8	51.4	54.0	54 41.70	+ 0.34	+42.91	+42.83	2 55 24.87	− 0.06
	23	α Persei	T.	3	56.2	0.1	2.2	11.8	15.0	18.1	27.5	29.9	33.8	14 14.96	− 0.10	. .	+42.83	3 14 57.69	+ 0.07
	24	γ Geminorum	T.	4	12.6	15.3	17.0	23.3	25.4	27.5	33.8	35.5	38.2	29 25.40	+ 0.26	+42.83	+42.83	6 30 8.49	0.00
	25	51 Cephei	T.	3	. .	18.0	49.0	57.0	39.0	. .	. .	. .	. .	37 39.15	− 8.80	. .	+42.83	6 38 13.18	+ 4.15
	26	α Canis Majoris	T.	4	26.2	28.9	30.4	36.7	39.0	41.1	47.4	49.0	51.7	38 38.93	+ 0.50	+42.90	+42.83	6 39 22.26	− 0.14
	27	ε Canis Majoris	T.	4	31.3	34.2	36.0	43.0	45.3	47.6	54.6	56.3	59.2	52 45.28	+ 0.59	+42.89	+42.83	6 53 28.70	− 0.08
	28	δ Canis Majoris	T.	3	7.0	9.9	11.5	18.3	20.5	22.8	29.7	31.3	34.2	2 20.58	+ 0.57	. .	+42.83	7 3 3.98	− 0.09
	29	δ Geminorum	T.	4	21.6	24.4	26.0	32.6	34.8	37.0	43.6	45.3	48.0	11 34.81	+ 0.22	+42.88	+42.83	7 12 17.86	− 0.08
	30	67 Piazzi	T.	4	. .	. .	20.1	25.9	31.5	37.1	42.8	. .	. .	16 31.46	− 0.73	. .	+42.83	7 17 13.56	− 0.01
	31	α^2 Geminorum	T.	3	16.9	20.0	21.8	29.0	31.4	33.9	41.1	43.0	45.9	25 31.44	+ 0.12	+42.77	+42.83	7 26 14.39	+ 0.26
	32	α Canis Minoris	T.	3	31.3	33.8	35.4	41.5	43.5	45.6	51.8	53.3	55.9	31 43.57	+ 0.34	+42.89	+42.83	7 32 26.74	− 0.12
	33	β Geminorum	T.	3	21.1	24.0	25.7	32.6	35.0	37.3	44.2	46.0	49.0	36 34.99	+ 0.16	+42.84	+42.83	7 37 17.98	− 0.01
	34	ϕ Geminorum	T.	3	32.2	35.0	36.8	43.5	45.8	48.0	55.0	56.5	59.6	44 45.82	+ 0.17	+42.86	+42.83	7 45 28.82	− 0.07
	35	λ Ursæ Minoris, S.P.	T.	3	. .	. .	36.0	47.0	1.0	14.0	25.0	. .	. .	54 1.00	+23.80	. .	+42.83	19 55 7.63	− 0.12
	36	15 Argus	T.	3	1.6	4.6	6.1	12.8	15.1	17.2	24.0	25.7	28.5	1 15.07	+ 0.55	+42.84	+42.83	8 1 58.45	− 0.03
	37	Mars I, N.	T.	3	41.2	43.9	45.6	. .	. .	. .	2.9	4.5	7.2	14 54.22	+ 0.24	. .	+42.83	9 15 37.29	. .
	38	Mars II, S.	T.	3	. .	. .	50.4	52.8	55.0	57.2	59.3	. .	. .	14 54.93	+ 0.24	. .	+42.83	9 15 38.00	. .
	39	α Hydræ	T.	3	14.1	16.8	18.3	24.4	26.5	28.6	34.8	36.3	38.9	20 26.52	+ 0.44	+42.84	+42.83	9 21 9.79	− 0.01
	40	β Cephei, S. P.	T.	3	47.6	39.9	35.6	17.6	11.9	5.9	48.1	43.3	35.7	26 11.73	+ 1.62	. .	+42.83	21 26 56.18	+ 0.11
	41	ε Leonis	T.	3	28.9	31.7	33 4	40.2	42.4	44.7	51.2	53.0	55.0	37 42.37	+ 0.20	+42.87	+42.83	9 38 25.40	− 0.05
	42	μ Leonis	T.	3	22.6	25.5	27.2	34.0	36.4	38.7	45.4	47.1	50.0	44 36.32	+ 0.18	+42.79	+42.83	9 45 19.33	+ 0.09
	43	α Leonis	T.	3	28.8	31.4	32.9	39.3	41.4	43.5	49.7	51.3	53.9	0 41.36	+ 0.29	+42.81	+42.83	10 1 24.48	+ 0.01
	44	32 Ursæ Majoris	T.	3	18.7	25.1	28.8	43.7	48.6	53.8	8.6	12.4	18.5	7 48.69	− 0.59	. .	+42.83	10 8 30.93	+ 0.04
	45	γ Leonis	T.	3	49.5	52.3	54.0	0.4	2.7	4.8	11.3	13.0	15.7	12 2.63	+ 0.23	+42.86	+42.83	10 12 45.68	− 0.01
	46	9 Draconis	T.	3	22.6	33.4	40.2	6.0	14.8	23.6	49.0	56.0	6.9	23 14.72	− 1.40	. .	+42.83	10 23 56.15	+ 0.22
	47	ρ Leonis	T.	3	0.2	2.8	4.2	10.5	12.6	14.6	20.7	22.3	24.9	25 12.53	+ 0.31	+42.82	+42.83	10 25 55.67	− 0.03
	48	α Ursæ Majoris	T.	3	30.2	35.9	39.2	52.4	56.7	1.1	14.4	17.7	23.2	54 56.76	− 0.43	. .	+42.83	12 55 39.16	+ 0.27
	49	δ Leonis	T.	3	13.1	15.9	17.4	24.0	26.2	28.5	35.0	36.6	39.4	6 26.23	+ 0.23	+42.91	+42.83	11 7 9.29	− 0.10

1.30.40.46. Bisections at sets B and D.
9. Bisections at wires II–VI.
25. R. A. and N. P. D. observed over wires B_2–C_3.
39. Circle reading diminished 2′.
46. Seems one rev. wrong in N. P. D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	285 40	20.0	19.8	21.1	14.5	31	. .	900	. .	812	. .	56.7	285 45 45.6	604	− 3 25.4	336 48 41.4	+ 1.3
2	322 34	16.3	14.3	16.0	9.0	24	. .	408	. .	480	. .	56.7	322 37 48.8	. .	− 44.9	13 43 25.1	+ 0.7
3	11 12	20.5	16.8	21.4	12.2	24	. .	690	. .	782	. .	56.7	11 15 55.8	. .	+ 11.7	62 22 28.7	+ 0.9
4	54 18	13.0	11.4	15.5	8.4	25	. .	522	. .	676	. .	56.7	54 22 3.1	. .	+ 1 21.9	105 29 46.2	+ 1.7
5	324 8	14.6	13.6	16.0	8.5	29	. .	363	. .	412	. .	56.7	324 13 3.5	. .	− 43.4	15 18 41.3	− 1.0
6	357 56	17.5	15.8	19.0	11.0	22	. .	330	. .	558	. .	56.7	357 59 19.0	. .	− 2.1	49 5 38.1	− 1.0
7	47 42	22.5	21.8	26.4	17.3	26	. .	. .	. .	599	. .	56.7	47 46 28.4	613	+ 1 4.8	98 53 54.4	+ 1.4
8	326 32	20.0	19.6	20.7	13.8	26	. .	732	. .	794	. .	56.7	326 36 28.5	616	− 38 8	17 42 10.9	+ 2.2
9	54 44	11.7	12.8	18.1	9.0	20	065	223	. .	600	787	56.9	54 46 45.1	556	+ 1 22.1	105 54 28.4	
10	42 10	10.5	11.5	16.6	6.6	25	. .	. .	. .	920	964	56.9	42 14 7.0	. .	+ 52.8	93 21 21.0	+ 1.5
11	352 12	8.1	9.8	13.3	3.2	26	. .	978	. .	130	. .	56.9	352 17 22.5	. .	− 7.9	43 23 35.8	+ 0.2
12	64 56	5.5	6.8	11.3	1.6	24	. .	. .	. .	994	070	56.9	64 59 47.9	. .	+ 2 4.2	116 8 13.3	+ 0.2
13	5 4	11.3	10.9	15.7	5.3	26	. .	018	. .	020	. .	56.9	5 8 8.5	. .	+ 5.2	56 14 34.9	− 0.2
14	59 56	7.8	8.8	12.7	3.2	27	262	. .	. .	. .	310	56.9	60 0 25.0	. .	+ 1 40.7	111 8 26.9	− 0.8
15	59 56	7.8	8.8	12.7	3.2	.	. .	977	. .	088	. .	56.9	60 0 36.6	568	+ 1 40.7	111 8 38.5	− 0.8
16	24 20	14.1	14.8	17.0	7.6	22	. .	501	. .	582	. .	56.9	24 23 18.1	541	+ 26.2	75 30 5.5	+ 1.7
17	46 16	9.5	11.4	13.0	4.6	23	. .	760	. .	712	. .	56.9	46 19 32.4	539	+ 1 0.6	97 26 54.2	− 5.9
18	34 44	8.4	9.5	12.7	3.2	22	114	166	. .	. .	. .	56.9	34 47 7.4	. .	+ 40.0	85 54 8.6	− 5.0
19	34 12	8.4	9.5	12.7	3.2	21	. .	. .	. .	. .	970	56.9	34 15 4.0	518	+ 39.2	85 22 4.4	− 5.0
20	310 14	14.4	15.3	15.3	6.0	25	814	829	816	833	808	56.9	310 18 7.7	509	− 1 7.7	1 23 21.2	+ 0.4
21	16 0	13.3	13.1	15.5	6.6	21	. .	448	. .	546	. .	56.9	16 3 0.9	510	+ 16.6	67 9 38.7	+ 0.9
22	35 16	14.6	15.0	18.0	8.5	20	. .	. .	. .	373	400	56.9	35 18 45.0	507	+ 40.7	86 25 43.9	− 1.4
23	349 28	12.5	12.9	14.8	5.1	18	710	778	. .	880	868	56.9	349 30 19.6	507	− 10.6	40 36 30.2	+ 0.9
24	22 20	18.4	18.2	21.5	10.8	20	. .	592	. .	731	. .	57.0	22 22 53.4	. .	+ 23.9	73 29 38.5	+ 0.7
25	311 36	13.5	12.8	14.5	4.8	25	810	880	950	878	. .	57.0	311 40 7.8	559	− 1 5.3	2 45 23.7	+ 2.3
26	55 20	14.6	14.8	18.4	8.6	28	. .	. .	. .	850	816	57.0	55 24 54.1	. .	+ 1 24.2	106 32 39.5	+ 2.7
27	67 36	9.8	11.4	16.1	6.2	23	. .	118	. .	272	. .	57.0	67 39 25.4	567	+ 2 20.8	118 48 7.4	0.0
28	65 0	11.4	12.8	17.1	7.4	21	. .	950	. .	120	. .	57.0	65 3 9.0	572	+ 2 4.7	116 11 34.9	+ 1.1
29	16 36	12.5	12.4	16.4	7.0	26	. .	232	. .	270	. .	57.0	16 40 13.6	. .	+ 17.5	67 46 52.3	+ 1.3
30	330 6	10.6	12.0	13.6	3.8	26	. .	. .	900	900	920	57.0	330 10 21.3	. .	− 33.5	21 16 9.0	+ 0.1
31	6 40	17.3	15.8	21.0	10.5	21	. .	942	. .	050	. .	57.2	6 43 13.0	. .	+ 6.9	57 49 41.1	+ 1.5
32	33 16	14.3	14.3	19.1	8.8	24	088	. .	. .	. .	186	57.2	33 19 43.5	. .	+ 38.4	84 26 43.1	+ 1.9
33	10 30	17.8	17.0	21.4	10.5	21	576	. .	. .	. .	722	57.2	10 33 8.4	. .	+ 10.9	61 39 40.5	+ 1.1
34	11 44	13.4	12.3	17.0	6.7	22	. .	893	. .	950	. .	57.2	11 47 23.2	. .	+ 12.2	62 53 56.6	− 0.1
35	307 46	5.7	7.7	9.3	29.0	24	218	184	233	223	329	57.0	307 49 35.8	. .	− 1 15.3	358 54 41.7	0.0
36	62 44	12.0	12.5	16.5	7.6	24	388	450	. .	470	560	57.0	62 47 46.1	593	+ 1 53.6	113 56 0.9	− 0.7
37	19 40	13.5	16.6	21.6	10.4	17	750	. .	. .	. .	926	57.6	19 42 9.4	. .	+ 21.1	70 48 51.7	− 3.3
38	19 40	13.5	16.6	21.6	10.4	18	. .	966	. .	012	. .	57.6	19 42 26.8	. .	+ 21.1	70 49 9.1	− 3.3
39	46 52	13.4	13.7	19.4	8.0	26	. .	666	. .	701	. .	57.6	46 58 22.2	. .	+ 1 3.1	98 5 46.5	+ 1.6
40	288 52	12.5	13.6	14.6	4.4	23	. .	230	. .	342	. .	57.6	288 55 28.3	620	− 2 50.4	339 58 59.1	+ 3.6
41	14 26	12.0	11.5	15.6	5.0	28	. .	930	. .	031	. .	57.6	14 30 55.0	. .	+ 15.4	65 37 31.6	+ 0.3
42	12 12	14.4	13.5	18.8	8.0	25	. .	802	. .	914	. .	57.6	12 16 9.9	627	+ 12.9	63 22 44.0	+ 1.0
43	26 12	14.4	14.0	18.4	8.5	28	. .	830	. .	909	. .	57.6	26 15 56.0	. .	+ 29.2	77 22 46.4	+ 1.8
44	333 4	11.5	12.0	13.0	4.6	27	. .	078	. .	180	. .	57.6	333 8 26.5	. .	− 29.9	24 14 17.8	− 0.4
45	18 20	13.5	13.5	17.0	7.7	22	. .	214	. .	326	. .	57.6	18 23 14.2	. .	+ 19.7	69 29 55.1	− 0.1
46	322 28	10.5	10.6	13.0	3.4	22	. .	932	. .	990	. .	57.6	323 31 21.5	. .	− 45.3	13 36 57.4	+14.3
47	28 50	15.8	15.8	19.0	9.7	26	. .	. .	. .	960	000	57.7	28 54 27.6	629	+ 32.7	80 1 21.5	− 0.1
48	336 22	13.0	13.8	15.0	6.3	27	400	. .	. .	. .	550	57.7	336 26 34.3	. .	− 25.8	27 32 29.7	− 0.9
49	17 34	14.8	15.3	18.1	8.5	29	. .	050	. .	063	. .	57.7	17 38 59.4	632	+ 18.8	68 45 39.4	+ 1.0

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
9	− 47 48.3	− 16 1.6

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
														m. s.	s.	s.	s.	h. m. s.	s.
1869. Mar. 31	1	ο Cephei, S. P. . .	T.	3	0.6	53.8	49.9	34.2	28.9	23.5	7.6	3.5	56.9	12 28.77	+ 1.53	. .	+42.83	23 13 13.13	− 0.23
	2	τ Leonis	T.	3	17.6	20.3	21.7	28.0	29.9	31.9	38.0	39.6	42.1	20 29.90	+ 0.47	+42.78	+42.83	11 21 13.20	+ 0.06
	3	λ Draconis . . .	T.	3	20.3	27.9	32.5	50.5	56.4	2.4	20.3	24.7	32.1	22 56.34	− 0.84	. .	+42.83	11 23 38.33	+ 0.30
	4	υ Leonis	T.	2	20.2	22.8	24.3	30.4	32.4	34.4	40.5	42.2	44.6	29 32.42	+ 0.38	+42.88	+42.83	11 30 15.63	− 0.06
	5	32[1] Camelopardalis .	T.	3	34.0	59.1	13.8	. .	. .	. .	54.0	8.3	33.0	47 33.70	− 4.62	. .	+42.83	12 48 11.91	− 8.27
	6	32[2] Camelopardalis .	T.	3	. .	. .	1.3	22.6	41.3	2.0	21.0	. .	. .	47 41.56	− 4.62	. .	+42.83	12 48 19.77	− 0.41
	7	Polaris, S. P. . .	T.	3	. .	. .	10.0	45.0	21.0	56.0	33.0	. .	. .	9 21.32	+18.63	. .	+42.83	1 10 22.78	+ 2.74
	8	ζ Virginis . . .	T.	3	6.9	9.5	11.0	17.3	19.2	21.3	27.4	28.9	31.4	27 19.21	+ 0.38	+42.79	+42.83	13 28 2.32	− 0.06
	9	η Ursæ Majoris . .	T.	3	22.5	26.4	28.8	38.3	41.6	44.7	54.2	56.5	0.5	41 41.50	− 0.13	. .	+42.83	13 42 24.20	− 0.13
	10	η Bootis	T.	2	31.9	34.6	36.4	42.8	44.9	47.0	53.4	55.2	57.9	47 44.90	+ 0.24	+42.84	+42.83	13 48 27.97	− 0.04
	11	θ Bootis	T.	3	43.1	47.2	49.8	59.9	3.2	6.4	16.6	19.1	23.1	20 3.16	− 0.17	. .	+42.83	14 20 45.82	+ 0.18
	12	5 Ursæ Minoris . .	T.	3	20.9	31.6	38.4	4.3	12.8	21.2	47.0	53.2	3.8	27 12.58	− 0.69	. .	+42.83	14 27 54.72	+ 1.14
	13	ε Bootis	T.	3	20.3	23.2	25.0	31.7	34.2	36.4	43.2	45.0	47.8	38 34.09	+ 0.17	+42.79	+42.83	14 39 17.09	+ 0.03
	14	α[2] Libræ	T.	3	43.4	46.0	47.6	53.8	56.0	58.1	4.4	5.9	8.5	42 55.97	+ 0.48	+42.82	+42.83	14 43 39.28	− 0.01
	15	τ Herculis . . .	T.	3	48.8	52.5	54.7	3.5	6.5	9.4	18.4	20.7	24.4	15 6.54	− 0.06	. .	+42.83	16 15 49.31	+ 0.24
	16	α Scorpii . . .	T.	3	26.6	29.4	31.2	38.0	40.3	42.6	49.2	51.0	54.0	20 40.26	+ 0.57	+42.83	+42.83	16 21 23.66	+ 0.02
	17	ζ Ophiuchi . . .	T.	3	1.8	4.4	6.0	12.3	14.3	16.4	22.6	24.2	26.7	29 14.30	+ 0.45	+42.79	+42.83	16 29 57.58	− 0.01
	18	η Herculis . . .	T.	3	26.5	29.8	31.9	39.7	42.3	45.3	52.8	54.7	58.2	37 42.36	+ 0.04	. .	+42.83	16 38 25.23	+ 0.14
	19	Moon II, S. . .	T.	2	51.5	. .	. .	. .	. .	. .	. .	. .	. .	45 24.99	+ 0.53	. .	+42.83	16 46 8.35	−68.82
	20	κ Ophiuchi . . .	T.	2	33.3	35.9	37.3	43.5	45.5	47.7	53.9	55.3	58.1	50 45.61	+ 0.32	+42.75	+42.83	16 51 28.76	+ 0.11
Apr. 3	21	Sun I, N. . . .	T.	3	27.6	30.3	31.7	37.9	39.9	42.0	48.2	49.8	52.3	49 39.97	+ 0.34	. .	+43.13	0 50 23.44	. .
	22	Sun II	T.	3	36.7	39.2	40.8	46.9	48.8	51.0	57.1	58.7	1.3	51 48.94	+ 0.34	. .	+43.13	0 52 32.41	. .
	23	Polaris	T.	1	. .	. .	. .	. .	. .	19.0	43.0	. .	. .	9 54.85	−15.24	. .	+43.13	1 10 22.74	+ 2.67
	24	η Tauri	T.	3	44.3	47.1	48.7	55.4	57.7	59.9	6.6	8.3	11.0	38 57.67	+ 0.21	+43.20	+43.16	3 39 41.04	− 0.03
	25	λ Ursæ Min., S. P. .	T.	3	. .	. .	42.0	56.0	8.0	. .	. .	. .	. .	54 8.79	+20.47	. .	+43.20	19 55 12.37	+ 1.61
	26	15 Argus	T.	2	1.4	4.1	5.9	12.5	14.8	16.9	23.7	25.3	28.1	1 14.74	+ 0.53	+43.13	+43.20	8 1 58.47	+ 0.05
	27	ε Hydræ	T.	3	54.9	57.4	59.0	5.0	7.2	9.3	15.3	16.9	19.5	39 7.17	+ 0.33	+43.25	+43.21	8 39 50.71	− 0.04
	28	Mars I, N. . . .	T.	3	31.8	34.6	36.3	. .	. .	. .	53.3	55.0	57.8	15 44.80	+ 0.25	. .	+43.21	9 16 28.26	. .
	29	Mars II, S. . .	T.	3	. .	. .	41.3	43.4	45.5	47.7	49.9	. .	. .	15 45.55	+ 0.25	. .	+43.21	9 16 29.01	. .
	30	β Lyræ	T.	3	16.7	19.7	21.6	28.8	31.3	33.6	41.1	42.9	46.1	44 31.31	+ 0.13	+43.35	+43.31	18 45 14.75	− 0.02
	31	ζ Aquilæ . . .	T.	3	27.3	30.0	31.5	37.7	39.8	42.0	48.2	49.8	52.3	58 39.84	+ 0.29	+43.23	+43.31	18 59 23.44	+ 0.12
	32	Moon II, N. . .	T.	3	10.8	13.4	15.2	21.6	24.0	26.4	33.0	34.8	37.5	33 24.08	+ 0.53	. .	+43.32	19 34 7.93	−66.40
	33	γ Aquilæ . . .	T.	3	5.7	8.3	9.8	16.0	18.1	20.1	26.3	27.9	30.5	39 18.08	+ 0.28	+43.35	+43.32	19 40 1.68	− 0.02
4	34	Moon II, N. . .	N.	3.2	. .	. .	1.1	3.4	5.5	7.7	9.9	. .	. .	26 5.51	+ 0.33	. .	+43.80	20 26 49.64	−65.12
	35	α Cephei	N.	4	16.4	22.0	25.3	38.3	42.7	47.0	0.0	3.2	8.7	14 42.62	− 0.42	. .	+43.81	21 15 26.31	− 0.21
	36	β Aquarii . . .	N.	3	42.5	45.2	46.6	50.6	55.0	58.9	3.0	4.6	7.0	23 54.82	+ 0.26	+43.82	+43.81	21 24 38.89	− 0.03
	37	β Cephei	N.	4	. .	. .	1.2	7.3	12.9	19.0	25.1	. .	. .	26 13.08	− 0.67	. .	+43.81	21 26 56.22	− 0.10
	38	ε Pegasi	N.	4	48.0	50.5	52.1	8.3	0.4	2.4	8.6	10.2	12.7	37 0.36	+ 0.18	+43.85	+43.82	21 37 44.36	− 0.05
	39	α Pegasi	N.	2	. .	. .	25.0	27.2	29.4	31.5	33.4	. .	. .	57 29.29	+ 0.14	+43.78	+43.83	22 58 13.26	+ 0.06
	40	Mercury . . .	N.	1	. .	. .	52.7	54.6	56.8	58.9	0.9	. .	. .	41 56.77	+ 0.25	. .	+43.84	23 42 40.86	− 0.03
5	41	Sun I, S. . . .	N.	2	45.0	47.5	49.0	55.2	57.2	59.2	5.4	7.0	9.5	56 57.22	+ 0.20	. .	+43.86	0 57 41.28	. .
	42	Sun II, N. . . .	N.	2	54.0	56.6	58.1	4.0	6.2	8.3	14.4	16.0	18.5	59 6.23	+ 0.20	. .	+43.86	0 59 50.29	. .
	43	Moon II, N. . .	F.	.	36.5	39.3	41.0	47.5	49.5	51.7	58.3	59.9	2.7	16 49.60	+ 0.08	. .	+44.00	21 17 33.68	−63.83
	44	ε Pegasi	F.	.	. .	. .	56.3	58.2	0.3	2.2	4.4	. .	. .	37 0.27	+ 0.03	+44.11	+44.00	21 37 44.30	− 0.13
	45	α Pegasi	F.	3	16.9	19.2	20.7	27.2	29.2	31.2	37.7	39.5	42.0	57 29.29	+ 0.02	+43.91	+44.02	22 58 13.33	+ 0.12
	46	Mercury II, C. .	F.	3	35.9	38.6	40.0	46.2	48.2	50.2	56.4	58.1	0.5	47 48.23	+ 0.06	. .	+44.02	23 48 32.31	− 0.19
6	47	Polaris	F.	.	. .	. .	. .	. .	45.0	. .	32.0	. .	. .	9 44.15	− 8.23	. .	+44.04	1 10 19.96	+ 0.09
	48	α Aquarii . . .	T.	3	. .	. .	14.2	16.1	18.1	20.2	22.2	. .	. .	58 18.15	+ 0.17	+44.09	+44.11	21 59 2.47	+ 0.01

5.12.32. Bisections at sets B and D.
6. Bisections at set C.
19. R. A. observed over wire VI; bisection at wires I–IV.
25. Seems one rev. wrong in N. P. D.
34. Bisections with wire *b* of the close pair.
43. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	286 16	11.4	12.9	14.4	5.0	27	. .	468	. .	540	. .	57.7	286 20 30.9	. .	− 3 19.3	337 23 32.8	+ 1.1
2	35 14	11.3	12.4	15.6	6.4	27	. .	310	. .	319	. .	57.7	35 18 29.8	. .	+ 41.9	86 25 32.9	+ 2.7
3	328 46	8.4	9.5	10.8	1.6	29	. .	388	. .	439	. .	57.7	328 50 59.0	. .	− 35.8	19 56 44.4	− 0.3
4	38 54	10.0	9.7	15.0	4.9	29	. .	. .	. .	625	. .	57.7	38 59 3.0	635	+ 47.9	90 6 12.1	+ 0.8
5	314 44	10.6	12.0	13.6	4.7	20	674	758	. .	660	641	57.8	314 46 48.0	. .	− 59.8	5 52 9.4	−21.1
6	314 44	10.6	12.0	13.6	4.7	21	870	893	. .	933	940	57.8	314 47 6.1	647	− 59.8	5 52 27.5	− 2.0
7	307 28	6.5	7.2	9.3	29.5	23	974	048	003	988	048	57.8	307 31 33.8	. .	− 1 17.2	358 36 37.8	− 1.2
8	38 44	11.6	11.5	14.5	5.5	27	. .	206	. .	292	. .	57.8	38 48 28.3	652	+ 47.8	89 55 37.3	+ 1.4
9	348 52	11.8	11.4	15.4	5.4	24	742	. .	. .	. .	888	57.8	348 55 52.1	. .	− 11.6	40 2 1.7	+ 0.8
10	19 46	16.8	16.0	19.6	10.5	25	. .	316	. .	363	. .	57.8	19 50 4.1	655	+ 21.5	70 56 46.8	− 0.2
11	346 22	16.1	16.4	18.8	9.8	27	. .	419	. .	457	. .	58.0	346 26 36.3	. .	− 14.4	37 32 43.1	+ 1.4
12	322 34	10.4	10.4	12.0	3.4	24	. .	618	. .	740	. .	58.0	322 37 47.8	. .	− 45.4	13 43 23.6	− 1.5
13	11 12	18.0	17.3	20.4	11.0	24	. .	670	. .	718	. .	58.0	11 55 15.5	. .	+ 11.9	62 22 28.6	+ 1.3
14	54 18	11.4	12.0	15.6	6.8	25	. .	408	. .	508	. .	58.0	54 22 1.6	658	+ 1 22.9	105 29 45.7	+ 0.9
15	352 12	13.5	12.8	16.0	6.8	26	. .	709	. .	. .	. .	58.1	352 16 22.8	. .	− 8.1	43 22 35.9	+ 0.5
16	64 56	9.5	10.4	14.1	4.0	24	. .	462	. .	610	. .	58.1	64 59 45.6	663	+ 2 7.2	116 8 14.0	+ 0.8
17	49 6	11.5	11.5	16.3	5.8	27	. .	112	. .	298	. .	58.1	49 10 28.3	. .	+ 1 8.9	100 17 58.4	+ 1.5
18	359 40	11.4	10.5	15.4	4.7	23	. .	. .	. .	350	372	58.1	359 43 28.4	. .	− 0.3	50 49 49.3	+ 1.6
19																	
20	29 14	15.3	14.8	19.0	10.4	26	. .	669	. .	. .	. .	58.1	29 18 24.5	669	+ 33.5	80 25 19.2	+ 5.2
21	33 2	13.3	12.2	16.7	8.7	25	. .	360	. .	250	. .	59.6	33 6 1.5	600	+ 38.3	84 13 1.0	− 4.8
22																	
23																	
24	15 8	7.3	5.6	10.4	1.0	24	. .	240	. .	390	. .	59.6	15 11 40.7	584	+ 15.9	66 18 17.8	+ 2.3
25	307 46	11.2	11.4	13.4	4.2	24	878	840	. .	. .	. .	59.6	307 49 52.6	. .	− 1 16.8	358 54 57.0	+15.4
26	62 44	5.8	6.0	10.2	1.8	24	. .	. .	. .	656	. .	59.6	62 47 44.8	676	+ 1 56.8	113 56 2.8	+ 1.1
27	31 56	9.5	10.7	14.3	5.7	22	798	. .	. .	. .	940	59.6	31 59 22.5	683	+ 37.4	83 6 21.1	+ 2.4
28	19 50	11.8	10.9	14.3	4.4	22	514	532	. .	. .	. .	59.6	19 53 18.5	. .	+ 21.7	71 0 1.4	− 3.3
29	19 50	11.8	10.9	14.3	4.4	23	. .	. .	. .	436	438	59.6	19 53 30.6	688	+ 21.7	71 0 13.5	− 3.3
30	5 38	6.5	5.3	10.3	0.3	21	. .	678	. .	762	. .	59.4	5 41 0.4	727	+ 6.0	56 47 27.6	− 0.2
31	25 10	10.8	9.4	13.5	3.7	21	660	582	. .	790	676	59.4	25 13 3.4	722	+ 28.5	76 19 53.1	+ 2.2
32	59 2	11.1	10.6	14.6	2.6	24	. .	401	446	409	. .	59.4	59 5 45.5	710	+ 1 40.3	110 13 47.0	
33	28 32	11.4	12.3	14.9	5.3	22	854	. .	. .	. .	038	59.4	28 35 24.4	706	+ 32.6	79 42 18.2	− 1.5
34	57 36	10 1.4	0.8	4.9	26.7	23	146	048	048	869	859	59.4	57 39 17.1	658	+ 1 33.8	108 47 12.1	
35	336 48	7.5	7.5	8.0	28.9	27	192	261	. .	355	328	59.4	336 52 26.1	. .	− 25.2	27 58 22.1	− 1.1
36	44 58	4.9	5.0	8.9	29.4	23	. .	. .	585	. .	. .	59.4	45 1 27.6	. .	+ 59.0	96 8 47.8	− 0.3
37	328 52	1.5	1.5	2.0	24.1	23	. .	288	307	325	. .	59.4	328 55 18.7	618	− 35.5	20 1 4.4	− 0.9
38	29 32	5.9	5.3	8.4	29.3	28	143	178	. .	271	280	59.4	29 36 38.7	. .	+ 33.5	80 43 33.4	− 1.0
39	24 20	4.3	4.8	9.3	29.0	22	. .	. .	971	. .	. .	59.4	24 23 17.6	576	+ 26.5	75 30 5.3	+ 1.5
40	43 24	2.5	3.2	7.7	28.2	21	. .	. .	. .	860	920	59.4	43 26 58.9	548	+ 54.9	94 34 15.0	− 5.2
41	32 48	7.1	7.3	11.1	2.3	26	945	000	. .	. .	. .	59.4	32 52 22.2	. .	+ 37.1	83 59 20.5	− 4.8
42	32 16	5.5	6.4	10.0	0.8	27	. .	. .	. .	312	240	59.4	32 20 34.9	508	+ 36.4	83 27 22.5	− 4.7
43	55 24	7.2	7.8	11.7	2.6	12	. .	. .	816	. .	. .	57.2	55 22 10.0	548	+ 1 23.8	116 29 55.0	
44	29 32	14.0	14.0	17.9	8.3	27	. .	. .	. .	888	810	57.2	29 36 38.9	538	+ 32.9	80 43 33.0	− 1.4
45	24 20	11.7	11.1	14.9	6.0	22	. .	. .	. .	424	512	57.2	24 23 14.0	504	+ 26.0	75 30 1.2	− 2.6
46	42 46	5.4	5.5	9.7	0.6	21	. .	795	. .	805	. .	57.2	42 48 58.9	478	+ 52.8	93 56 12.9	− 5.1
47	310 14	11.0	10.5	12.9	4.5	26	. .	. .	178	. .	142	57.2	310 18 10.1	445	− 1 6.7	1 23 24.6	+ 2.0
48	39 48	10.8	11.2	15.3	5.6	18	. .	402	. .	490	. .	57.2	39 50 13.2	543	+ 48.3	90 57 22.7	+ 0.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
34	30.000	38.4	71.7

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
32	− 47 13.0	+ 15 4.1
34	− 46 1.7	+ 14 55.3
43	− 44 30.9	+ 14 49.3

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Apr. 6	1	Moon II, N.	T.	3.2	33.4	36.2	37.6	44.2	46.3	48.4	54.8	56.4	59.0	5 46.26	+ 0.22	. .	+44.12	22 6 30.60	−62.67
	2	α Pegasi	T.	3	. .	. .	24.8	26.9	29.0	31.0	33.2	. .	. .	57 28.97	+ 0.10	+44.18	+44.12	22 58 13.19	− 0.05
7	3	Polaris	T.	3	0.0	. .	. .	. .	. .	. .	. .	. .	. .	9 49.70	−11.49	. .	+44.14	1 10 20.35	+ 0.57
	4	κ Cancri	T.	3	42.7	45.3	46.9	53.0	55.1	57.3	3.5	5.0	7.7	59 55.17	+ 0.12	+44.21	+44.21	9 0 39.50	0.00
	5	Mars I, S.	T.	.	14.9	17.7	19.4	. .	. .	. .	36.7	38.3	41.0	17 28.00	+ 0.08	. .	+44.21	9 18 12.29	. .
	6	Mars II, N.	T.	3	. .	. .	24.4	26.6	28.7	30.9	33.0	. .	. .	17 28.71	+ 0.08	. .	+44.21	9 18 13.00	. .
	7	υ Leonis	T.	3	19.0	21.6	23.1	29.2	31.2	33.2	39.3	40.9	43.5	29 31.22	+ 0.17	+44.27	+44.23	11 30 15.62	− 0.05
	8	β Leonis	T.	3	26.6	29.2	30.9	37.3	39.4	41.5	47.8	49.4	52.1	41 39.36	+ 0.10	+44.21	+44.23	11 42 23.69	+ 0.03
	9	ο Virginis	T.	3	36.5	39.2	40.7	46.9	49.0	51.0	57.1	58.8	1.3	57 48.94	+ 0.13	+44.21	+44.23	11 58 33.30	− 0.04
	10	η Virginis	T.	3	16.9	19.6	21.0	27.0	29.0	31.1	37.3	38.8	41.4	12 29.12	+ 0.17	+44.19	+44.23	12 13 13.52	+ 0.03
	11	β Corvi	T.	3	34.4	37.2	38.9	45.5	47.7	49.9	56.4	57.9	0.7	26 47.62	+ 0.26	+44.20	+44.23	12 27 32.11	+ 0.09
	12	Eurynome	T.	.	. .	. .	16.6	19.0	20.8	22.7	25.0	. .	. .	43 20.81	+ 0.19	. .	+44.24	12 44 5.24	. .
	13	Concordia	T.	3	41.0	43.6	45.2	51.6	53.7	55.6	1.6	3.5	6.0	58 53.53	+ 0.17	. .	+44.24	12 59 37.94	. .
	14	Polaris, S. P.	T.	3	. .	. .	16.0	51.0	26.0	0.0	36.0	. .	. .	9 26.12	+11.93	. .	+44.24	1 10 22.29	+ 2.44
	15	Moon II	N.	2	4.5	7.1	8.7	15.0	17.0	19.3	25.6	27.3	29.6	53 17.12	+ 0.18	. .	+44.43	22 54 2.73	−61.78
	16	γ Cephei	N.	3	. .	. .	. .	. .	. .	. .	49.0	56.1	7.1	33 13.19	− 1.12	. .	+44.44	23 33 56.51	+ 0.40
8	17	λ Ursæ Min., S. P.	N.	5	. .	. .	46.5	56.0	12.0	24.0	36.5	. .	. .	54 11.40	+16.44	. .	+44.52	19 55 12.36	− 3.54
	18	ε Hydræ	N.	4	53.7	56.3	57.7	3.9	6.0	8.0	14.2	15.7	18.2	39 5.97	+ 0.11	+44.59	+44.53	8 39 50.61	− 0.06
	19	ι Ursæ Maj., (R.)	N.	3.4	11.3	15.3	. .	26.9	29.9	32.9	. .	44.3	48.2	49 29.83	− 0.17	. .	+44.53	8 50 14.19	+ 0.19
	20	σ Ursæ Maj., (R.)	N.	3.4	34.4	41.2	. .	55.9	6.5	17.4	. .	32.0	38.9	58 6.61	− 0.55	. .	+44.53	8 58 50.59	+ 0.11
	21	Mars I, N.	N.	4	47.0	49.7	51.4	. .	. .	. .	8.5	10.3	13.0	17 59.98	+ 0.05	. .	+44.54	9 18 44.57	. .
	22	Mars II, S.	N.	4	. .	. .	56.2	58.5	0.6	2.7	4.9	. .	. .	18 0.57	+ 0.05	. .	+44.54	9 18 45.16	. .
	23	β Cephei, S. P.	N.	2	46.8	39.2	34.9	17.0	11.0	5.0	47.1	42.6	35.2	26 10.98	+ 1.06	. .	+44.54	9 26 56.58	+ 0.07
	24	ε Leonis	N.	3	27.4	30.3	31.8	38.6	40.9	43.1	49.8	51.4	54.2	37 40.83	+ 0.02	+44.48	+44.54	9 38 25.39	+ 0.05
	25	γ Leonis	N.	2	48.1	50.8	52.5	58.9	1.0	3.4	9.8	11.5	14.2	12 1.13	+ 0.05	+44.44	+44.55	10 12 45.73	+ 0.13
	26	β Leonis	N.	2	26.4	29.0	30.5	36.8	39.0	41.1	47.5	49.1	51.5	41 38.99	+ 0.07	+44.61	+44.56	11 42 23.62	− 0.04
	27	Polaris, S. P.	N.	2	. .	. .	. .	. .	. .	. .	49.0	46.0	0.0	9 24.93	+12.84	. .	+44.57	1 10 22.34	+ 2.64
	28	α Virginis	N.	.	. .	. .	. .	. .	. .	. .	42.5	44.1	46.7	7 34.23	+ 0.19	+44.64	+44.58	13 18 19.00	− 0.05
9	29	λ Ursæ Min., S. P.	F.	3	57.0	45.0	20.0	49.0	0.0	. .	. .	. .	. .	54 13.24	+14.93	. .	+44.71	19 55 12.88	− 4.19
	30	Mars I, N.	F.	3	21.5	24.0	25.5	. .	. .	. .	42.7	44.4	47.1	18 34.20	+ 0.12	. .	+44.72	9 19 19.04	. .
	31	Mars II, S.	F.	3	. .	. .	30.7	32.8	34.7	37.0	39.2	. .	. .	18 34.87	+ 0.12	. .	+44.72	9 19 19.71	. .
	32	μ Leonis	F.	4	20.7	23.6	25.2	32.1	34.6	36.7	43.5	45.1	48.0	44 34.39	+ 0.08	+44.72	+44.73	9 45 19.20	− 0.06
	33	α Leonis	F.	.	27.0	29.7	31.1	37.5	39.5	41.5	47.9	49.4	52.0	0 39.51	+ 0.15	+44.71	+44.73	10 1 24.39	+ 0.01
	34	32 Ursæ Majoris	F.	.	16.3	22.5	26.0	41.0	46.0	50.9	6.2	9.5	15.9	7 46.03	− 0.39	. .	+44.73	10 8 30 37	− 0.24
	35	γ² Leonis	F.	3	48.0	50.8	52.4	58.4	1.1	3.2	9.5	11.5	14.0	12 0.99	+ 0.11	. .	+44.73	10 12 45.83	. .
	36	9 Draconis	F.	3	. .	. .	53.3	2.1	11.3	20.0	28.3	. .	. .	23 10.97	− 0.91	. .	+44.73	10 23 54 79	− 0.66
	37	δ Crateris	F.	3	51.2	54.0	55.4	1.9	3.9	5.9	12.4	14.0	16.7	12 3.93	+ 0.26	+44.60	+44.74	11 12 48.93	+ 0.14
	38	τ Leonis	F.	4	15.9	18.5	20.1	26.1	28.1	30.1	36.4	37.9	40.4	20 28.17	+ 0.19	+44.76	+44.75	11 21 13.11	0.00
	39	υ Leonis	F.	4	18.5	20.9	22.7	28.8	30.8	32.8	38.8	40.3	43.0	29 30.73	+ 0.21	+44.70	+44.75	11 30 15.69	+ 0.04
	40	β Leonis	F.	3	26.0	29.0	30.2	36.7	38.9	41.2	47.4	49.0	51.5	41 38.88	+ 0.14	+44.64	+44.75	11 42 23.77	+ 0.12
	41	γ Ursæ Majoris	F.	3	. .	. .	. .	. .	. .	. .	26.4	29.1	33.6	46 12.48	− 0.16	. .	+44.75	11 46 57.07	− 0.09
	42	ο Virginis	F.	.	35.9	38.5	40.0	46.3	48.4	50.4	56.5	58.2	0.6	57 48.31	+ 0.16	+44.81	+44.76	11 58 33.23	− 0.11
	43	4 Draconis	F.	2	. .	. .	. .	. .	. .	42.0	2.6	9.9	21.6	5 21.72	− 1.12	. .	+44.76	12 6 4.76	− 1.14
	44	κ Draconis	F.	3	. .	. .	58.7	4.7	10.9	17.1	23.3	. .	. .	27 10.92	− 0.61	. .	+44.76	12 27 55.07	− 0.18
	45	12 Canum Venat.	F.	3	54.4	57.8	59.7	7.4	10.4	12.9	20.4	22.5	25.7	49 10.13	0.00	+44.97	+44.77	12 49 54.90	− 0.19
	46	Polaris, S. P.	F.	.	. .	. .	. .	49.0	26.0	3.0	39.0	. .	. .	9 26.50	+11.67	. .	+44.77	1 10 22.94	+ 3.24
	47	α Virginis	F.	3	21.7	24.2	25.6	31.9	33.9	36.0	42.2	43.9	46.4	17 33.98	+ 0.25	+44.83	+44.77	13 18 19.00	− 0.05
12	48	Sun I, N.	N.	2	22.0	24.4	26.2	32.4	34.4	36.5	42.7	44.3	47.0	22 34.43	+ 0.11	. .	. .	. . . .	. .
	49	Sun II, S.	N.	2	31.6	34.2	35.8	42.0	44.1	46.2	52.2	53.9	56.3	24 44.03	+ 0.11	. .	. .	. . . .	. .

1.16.23.36.43.44. Bisections at sets B and D.
12.13. Wire A used.
36. Wire B used.
48. Sun shone on object-glass for 1^m or 2^m before this observation ; telescope pointed north and sun-cap on.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	52 20	13.2	12.5	15.8	7.6	22	. .	176	. .	308	. .	57.2	52 23 12.6	. .	+ 1 15.0	103 30 48.8	
2	24 20	17.1	16.4	19.5	10.4	22	. .	280	. .	280	. .	57.2	24 23 16.9	523	+ 26.1	75 30 4.2	+ 0.4
3																	
4	27 38	4.8	5.3	9.6	0.6	24	. .	390	. .	508	. .	56.9	27 41 38.9	600	+ 30.8	78 48 30.9	— 0.9
5	20 8	4.7	4.0	7.4	28.6	21	223	270	. .	. .	. .	56.9	20 10 49.5	. .	+ 21.6	71 17 32.3	— 3.2
6	20 8	4.7	4.0	7.4	28.6	20	. .	. .	. .	598	610	56.9	20 10 38.2	603	+ 21.6	71 17 21.0	— 3.2
7	38 54	10.0	8.5	13.6	5.4	29	. .	623	. .	692	. .	56.9	38 59 2.8	629	+ 47.8	90 6 11.8	+ 0.6
8	23 30	9.6	9.4	13.3	4.4	29	. .	722	. .	801	. .	56.9	23 35 4.3	. .	+ 25.8	74 41 51.3	+ 1.2
9	29 22	10.0	9.5	14.5	5.7	23	. .	814	. .	892	. .	56.9	29 25 34.6	638	+ 33.4	80 32 29.2	— 0.9
10	38 46	3.5	2.3	6.8	29.0	23	. .	220	. .	288	. .	56.9	38 49 18.4	. .	+ 47.7	89 56 27.3	+ 1.0
11	61 28	9 28.5	28.4	3.5	25.7	27	. .	186	. .	223	. .	56.9	61 32 14.8	. .	+ 1 49.1	112 40 25.1	— 2.9
12	45 14	11.4	10.6	14.9	7.5	19	. .	. .	. .	710	628	56.9	45 13 57.3	. .	+ 59.8	96 21 18.3	— 3.4
13	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . . .	653			
14																	
15																	
16	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . . .	535			
17	307 46	2.5	3.5	3.4	24.9	24	. .	. .	310	. .	. .	58.1	307 49 33.9	490	— 1 13.6	358 54 41.5	+ 0.3
18	31 56	2.8	3.2	6.7	27.9	23	. .	422	. .	475	. .	58.1	31 59 22.4	514	+ 35.9	83 6 19.5	+ 0.9
19	189 36	1.5	4.0	5.9	24.4	23	. .	. .	928	010	055	58.1	189 39 28.6	. .	+ 9.8	41 26 42.8	— 0.1
20	208 42	9.1	11.8	12.2	1.9	24	. .	609	. .	701	. .	58.1	208 45 45.6	. .	+ 31.7	22 20 3.9	— 0.5
21	20 12	7.8	9.0	10.9	3.1	23	180	. .	. .	. .	374	58.1	20 15 25.0	. .	+ 21.4	71 22 7.6	— 3.2
22	20 12	7.8	9.0	10.9	3.1	23	. .	970	. .	048	. .	58.1	20 15 36.1	543	+ 21.4	71 22 18.7	— 3.2
23	288 52	6.7	9.8	8.7	0.2	23	252	311	. .	300	305	58.1	288 55 23.5	. .	— 2 52.3	339 58 52.5	— 1.7
24																	
25	18 20	2.1	3.8	6.3	26.4	22	898	898	. .	020	960	58.1	18 23 14.3	570	+ 19.4	69 29 54.9	+ 0.4
26	23 32	8.4	9.0	11.6	2.9	21	. .	885	. .	022	. .	58.1	23 35 4.9	567	+ 25.4	74 41 51.5	+ 1.6
27																	
28																	
29	307 46	8.6	10.3	11.9	1.7	23	. .	925	. .	. .	. .	58.8	307 49 35.5	574	— 1 15.0	358 54 41.7	+ 0.6
30	20 16	8.9	9.1	13.2	3.2	26	688	. .	. .	. .	920	58.8	20 20 20.5	608	+ 21.8	71 27 3.5	— 3.2
31	20 16	8.9	9.1	13.2	3.2	27	. .	475	. .	552	. .	58.8	20 20 31.3	. .	+ 21.8	71 27 14.3	— 3.2
32	12 12	5.9	5.4	8.8	29.2	26	240	260	. .	306	310	58.8	12 16 8.7	605	+ 12.8	63 22 42.7	+ 0.6
33	26 14	10 15.9	15.4	20.4	9.4	20	665	696	. .	778	812	58.8	26 16 54.4	608	+ 29.0	77 23 44.6	+ 0.5
34	333 4	6.8	7.6	9.4	29.8	27	. .	168	. .	238	. .	58.8	333 8 24.4	608	— 29.8	24 14 15.8	— 0.4
35	18 20	6.2	7.2	9.3	0.2	22	600	616	. .	686	700	58.8	18 23 14.1	. .	+ 19.6	69 29 54.9	+ 0.5
36	322 26	1.1	1.6	3.4	23.8	20	462	462	. .	506	530	58.8	322 31 4.3	612	— 45.1	13 36 40.4	— 0.5
37	52 52	5.3	5.8	10.5	1.9	28	. .	412	. .	482	. .	58.8	52 56 42.6	627	+ 1 18.1	104 4 21.9	— 2.1
38	35 14	12.6	12.4	16.6	7.6	26	912	970	. .	028	090	58.8	35 18 27.0	. .	+ 41.8	86 25 30.0	+ 0.5
39	38 56	4.6	4.1	8.0	29.6	21	905	941	. .	066	096	58.8	38 59 2.4	628	+ 47.8	90 6 11.4	+ 0.2
40	23 32	10.4	11.1	14.9	4.6	21	608	625	. .	685	724	58.8	23 35 3.5	. .	+ 25.8	74 41 50.5	+ 0.7
41	344 24	11.2	10.6	12.8	3.4	27	. .	. .	. .	458	365	58.8	344 28 30.4	. .	— 16.5	35 34 35.1	— 0.3
42	29 22	10 14.1	14.9	19.6	8.9	23	198	267	. .	328	346	58.8	29 25 32.4	. .	+ 33.4	80 32 27.0	— 1.9
43	320 30	7.4	8.4	9.6	1.1	24	. .	. .	. .	550	618	58.8	320 33 44.4	. .	— 48.8	11 39 17.8	+ 0.8
44	328 20	4.3	5.5	6.7	27.3	24	095	120	. .	155	172	58.8	328 23 34.5	648	— 36.5	19 29 19.2	— 1.1
45	359 48	10 17.4	15.9	21.2	11.0	25	. .	. .	. .	509	539	58.8	359 52 8.1	. .	— 0.1	50 58 29.2	+ 1.6
46	307 28	10.1	11.3	12.7	3.4	24	. .	708	700	717	670	58.8	307 31 48.7	658	— 1 17.4	358 36 52.5	+16.2
47	49 18	10 15.7	16.6	21.3	10.9	21	. .	. .	. .	770	868	58.8	49 21 10.7	658	+ 1 9.2	100 28 41.1	— 0.4
48	29 40	13.7	11.4	17.5	6.1	27	041	040	. .	. .	. .	60.0	29 44 29.1	. .	+ 33.5	80 51 23.8	— 4.3
49	30 12	7.8	7.4	12.7	2.1	26	. .	. .	. .	997	089	60.0	30 16 23.7	586	+ 34.3	81 23 19.2	— 4.4

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
1	— 42 52.6	+ 14 45.8

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Apr. 13	1	Sun I, S. . . .	F.	.	2.7	5.3	6.6	13.0	15.0	17.2	23.6	25.0	27.7	26 15.12	+ 0.12	. .	+45.81	1 27 1.05	+64.91
	2	Mars I, S. . . .	F.	3	1.2	4.0	5.5	. .	. .	. .	22.8	24.2	27.0	21 14.12	+ 0.09	. .	+45.91	9 22 0.12	. .
	3	Mars II, N. . .	F.	.	. .	. .	10.4	12.6	14.6	16.9	19.0	. .	. .	21 14.69	+ 0.09	. .	+45.91	9 22 0.69	. .
	4	ε Leonis	F.	.	25.8	28.5	30.2	37.0	39.3	41.6	48.2	49.9	52.6	37 39.23	+ 0.07	+45.96	+45.91	9 38 25.21	− 0.06
	5	α Leonis	F.	3	25.7	28.4	30.0	36.2	38.2	40.3	46.8	48.2	50.9	0 38.30	+ 0.11	+45.90	+45.91	10 1 24.42	0.00
	6	32 Ursæ Majoris . .	F.	3	14.7	21.0	24.2	39.6	44.7	49.9	4.5	8.3	14.6	7 44.61	− 0.45	. .	+45.92	10 8 30.08	− 0.40
	7	γ^1 Leonis	F.	3	46.5	49.2	51.0	57.5	59.6	1.7	8.3	9.8	12.7	11 59.59	+ 0.08	+45.89	+45.92	10 12 45.59	+ 0.05
	8	ρ Leonis	F.	2	57.2	59.6	1.0	7.4	9.2	11.5	18.0	19.4	22.0	25 9.48	+ 0.11	+45.95	+45.92	10 25 55.51	− 0.07
	9	α Ursæ Majoris . .	F.	3	26.4	32.0	35.1	48.8	53.0	57.2	10.6	13.9	19.2	54 52.91	− 0.15	. .	+45.93	10 55 38.69	+ 0.07
	10	δ Leonis	F.	3	10.2	12.9	14.4	21.0	23.2	25.4	32.0	33.7	36.3	6 23.23	+ 0.09	+45.95	+45.93	11 7 9.25	− 0.06
	11	τ Leonis	F.	3	. .	. .	. .	27.0	29.1	31.1	35.2	36.4	39.3	20 26.97	+ 0.13	+45.99	+45.93	11 21 13.03	− 0.05
	12	υ Leonis	F.	3	17.3	19.9	21.6	27.6	29.5	31.5	37.8	39.2	41.7	29 29.57	+ 0.14	+45.91	+45.93	11 30 15.64	+ 0.01
	13	β Leonis	F.	.	25.0	27.8	29.2	35.7	37.7	39.8	46.0	47.7	50.2	41 37.68	+ 0.10	+45.87	+45.94	11 42 23.72	+ 0.08
	14	Massalia . . .	F.	.	52.0	54.6	56.2	2.8	4.4	6.3	12.2	14.0	16.6	50 4.34	+ 0.14	. .	+45.94	11 50 50.42	. .
	15	ο Virginis . . .	F.	.	35.0	37.4	39.0	45.2	47.0	49.3	55.5	57.0	59.6	57 47.22	+ 0.12	+45.93	+45.94	11 58 33.28	− 0.05
	16	Nemausa . . .	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	17	Calliope . . .	F.	2.1	16.2	19.1	20.9	27.0	29.6	31.8	37.0	39.0	41.4	27 29.11	+ 0.07	. .	+45.95	12 28 15.13	. .
	18	Anonymous . .	F.	2	. .	. .	. .	. .	. .	. .	35.5	37.6	40.1	38 27.66	+ 0.15	. .	+45.95	12 39 13.76	. .
	19	Concordia . . .	F.	3	. .	. .	7.5	10.2	12.0	14.1	16.3	. .	. .	54 12.01	+ 0.14	. .	+45.95	12 54 58.10	. .
	20	Polaris, S. P. . .	F.	.	. .	. .	18.0	53.0	28.0	3.0	39.0	. .	. .	9 28.52	+ 7.31	. .	+45.95	1 10 21.78	+ 1.43
	21	α Draconis . . ,	F.	3	. .	. .	57.2	2.2	7.0	11.8	16.8	. .	. .	0 6.98	− 0.18	. .	+45.95	14 0 52.75	− 0.18
	22	α Bootis	F.	3	43.5	46.2	47.8	54.3	56.4	58.7	5.1	6.7	9.5	8 56.47	+ 0.09	+45.90	+45.96	14 9 42.52	+ 0.07
	23	α Pegasi	T.	3	14.5	17.2	18.6	. .	. .	. .	. .	. .	. .	57 27.12	+ 0.05	+46.21	+46.09	22 58 13.26	− 0.11
14	24	γ Leonis	T.	.	46.2	49.0	50.5	57.0	59.0	1.3	8.0	9.6	12.4	11 59.22	+ 0.05	+46.28	+46.20	10 12 45.53	− 0.06
	25	Lalande 20104 .	T.	3	24.0	26.8	28.4	34.7	36.9	38.8	45.5	47.2	49.8	14 36.90	+ 0.04	. .	+46.20	10 15 23.14	+ 2.53
	26	ρ Leonis	T.	3	56.8	59.5	1.0	7.3	9.3	11.4	17.6	19.2	21.8	25 9.32	+ 0.06	+46.15	+46.20	10 25 55.58	+ 0.01
	27	δ Leonis	T.	3	. .	. .	18.6	20.8	23.0	25.3	27.4	. .	. .	6 23.01	+ 0.04	+46.22	+46.21	11 7 9.26	− 0.03
	28	δ Crateris . . .	T.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	29	τ Leonis	T.	3	. .	. .	22.8	24.7	26.8	28.9	31.0	. .	. .	20 26.83	+ 0.07	+46.19	+46.21	11 21 13.11	+ 0.03
	30	β Corvi	T.	3	32.5	35.3	37.0	43.7	45.8	48.0	54.9	56.4	59.2	26 45.87	+ 0.11	+46.10	+46.22	12 27 32.20	+ 0.18
	31	Eurynome . . .	T.	3	17.0	19.5	21.2	27.4	29.3	31.4	37.3	38.7	41.5	37 29.26	+ 0.10	. .	+46.23	12 38 15.59	. .
	32	Concordia . . .	T.	2	14.2	17.0	18.5	. .	. .	. .	34.9	36.6	38.9	53 26.68	+ 0.08	. .	+46.23	12 54 12.99	. .
	33	Polaris, S. P. . .	T.	3	. .	. .	20.0	57.0	33.0	9.0	44.0	. .	. .	9 32.92	+ 3.90	. .	+46.23	1 10 23.05	+ 2.43
15	34	α Tauri	N.	3	24.2	26.8	28.3	34.7	36.8	39.0	45.4	46.9	49.7	27 36.87	+ 0.04	+46.53	. .	. . .	. .
	35	Moon I . . .	N.	2	54.0	57.0	58.6	5.3	7.4	9.5	16.3	17.7	20.4	31 7.36	+ 0.02	. .	+46.53	4 31 53.91	+66.83
	36	α Andromedæ . .	F.	3	35.8	38.8	40.5	47.5	50.0	52.1	59.0	0.8	3.6	0 49.79	− 0.10	+46.51	+46.50	0 1 36.19	− 0.01
	37	Polaris	F.	3	. .	. .	51.0	14.0	38.0	3.0	27.0	. .	. .	9 38.28	− 4.21	. .	+46.50	1 10 20.57	− 0.42
16	38	δ Persei	F.	3	30.8	34.5	36.8	45.9	48.7	51.8	0.7	3.0	7.2	32 48.82	− 0.14	. .	+46.51	3 33 35.19	+ 0.22
	39	η Tauri	F.	3	. .	. .	. .	. .	. .	. .	3.3	5.1	7.8	38 54.46	− 0.09	+46.50	+46.51	3 39 40.98	− 0.02
	40	α Tauri	F.	4	24.2	27.0	28.5	34.8	37.0	39.0	45.3	47.0	49.7	27 36.94	− 0.08	+46.57	+46.52	4 28 23.38	− 0.05
	41	ι Aurigæ . . .	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	42	β Tauri	F.	3	59.4	2.4	4.1	11.0	13.5	15.8	22.8	24.4	27.3	17 13.41	− 0.10	+46.60	+46.52	5 17 59.83	− 0.09
	43	δ Orionis	F.	.	. .	21.8	. .	29.8	. .	. .	39.9	41.4	. .	24 31.70	− 0.07	+46.54	+46.52	5 25 18.15	− 0.04
	44	Moon, N. . . .	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	45	α Hydræ	F.	.	10.7	13.3	14.9	21.0	23.0	25.2	31.3	32.9	35.5	20 23.09	− 0.07	+46.53	+46.53	9 21 9.55	0.00
	46	Mars I, N. . .	F.	4	24.0	26.8	28.3	. .	. .	. .	45.6	47.2	49.9	23 36.97	− 0.09	. .	−46.53	9 24 23.41	. .
	47	Mars II, S. . .	F.	4	. .	. .	33.4	35.6	37.6	39.8	42.0	. .	. .	23 37.67	− 0.09	. .	+46.53	9 24 24.11	. .
	48	ε Leonis	F.	3	25.1	28.2	29.9	36.6	38.9	41.0	47.8	49.5	52.3	37 38.81	− 0.09	+46.48	+46.53	9 38 25.26	+ 0.04
	49	μ Leonis	F.	3	18.9	21.8	23.6	30.4	32.8	34.9	41.8	43.5	46.3	44 32.67	− 0.10	+46.49	+46.53	9 45 19.10	+ 0.09

4. Wire B used.
14.16.17.18.19.31.32. Wire A used.
18. Observed for Eurynome.
21.44. Bisections at sets B and D ; faint.
43. Micrometer reading changed 5 revs.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	29 50	10.6	8.6	13.8	4.0	27	778	859	. .	. .	. .	61.0	29 54 37.9	582	+ 33.6	81 1 32.7	− 4.4
2	20 38	6.5	5.2	9.8	29.1	24	888	. .	. .	. .	912	60.8	20 41 50.0	626	+ 22.3	71 48 33.5	− 3.1
3	20 38	6.5	5.2	9.8	29.1	24	. .	327	. .	438	. .	60.8	20 41 39.9	. .	+ 22.3	71 48 23.4	− 3.1
4	14 26	8 9.6	7.0	11.2	2.1	22	936	952	. .	142	196	60.8	14 30 53.0	. .	+ 15.3	65 37 29.5	− 0.6
5	26 14	10 7.0	7.0	11.3	1.2	21	. .	072	. .	182	. .	60.8	26 16 53.6	640	+ 29.3	77 23 44.1	+ 0.3
6	333 4	6.1	5.8	7.8	27.8	27	. .	. .	. .	178	122	60.8	333 8 23.7	. .	− 30.0	24 14 14.0	− 0.5
7	18 20	12.6	12.3	15.3	6.2	21	. .	900	. .	934	. .	60.8	18 23 10.7	645	+ 19.7	69 29 51.6	− 2.5
8	28 50	8.0	8.0	12.3	1.8	27	. .	368	. .	276	. .	60.8	28 54 29.2	. .	+ 32.8	80 1 23.2	+ 2.4
9	336 22	8.9	8.8	11.2	0.6	27	. .	448	. .	490	. .	60.8	336 26 31.9	. .	− 25.9	27 32 27.2	− 0.3
10	17 36	7.0	5.6	9.4	29.9	21	200	260	. .	394	452	60.8	17 38 55.6	. .	+ 18.9	78 45 35.7	− 1.3
11	35 14	6.3	5.7	8.9	0.0	27	. .	. .	. .	310	396	60.8	35 18 26.5	654	+ 42.1	86 25 29.8	+ 0.4
12	38 56	9 27.0	25.9	29.6	20.8	22	. .	. .	. .	412	498	60.8	38 59 2.2	. .	+ 48.1	90 6 11.5	+ 0.3
13	23 32	10 13.3	12.4	16.4	5.8	21	. .	333	. .	421	. .	60.8	23 35 2.8	658	+ 26.0	74 41 50.0	+ 0.6
14	38 12	14.3	13.1	17.8	7.9	35	. .	. .	. .	. .	830	60.8	38 13 37.4	. .	+ 46.9	89 20 45.5	− 3.9
15	29 22	9.5	9.8	13.6	3.3	23	. .	. .	. .	. .	688	60.8	29 25 34.2	. .	+ 33.6	80 32 29.0	+ 0.4
16	35 26	4.7	3.8	6.4	28.7	27	. .	634	. .	678	. .	60.8	35 27 56.1	. .	+ 42.4	86 34 59.7	− 4.2
17	23 26	7.4	6.8	10.5	0.4	30	. .	. .	. .	. .	300	60.8	23 28 39.0	. .	+ 25.9	74 35 26.1	− 1.6
18	44 32	13.1	12.4	17.4	6.5	19	. .	. .	. .	. .	778	60.8	44 32 4.0	. .	+ 58.7	95 39 23.9	
19	39 30	10.2	9.6	13.3	3.4	30	022	052	. .	190	198	60.8	39 32 39.4	675	+ 49.3	90 39 49.9	− 3.5
20	307 28	5.9	4.8	7.4	27.7	23	. .	796	786	832	886	60.8	307 31 31.9	. .	− 1 17.7	358 36 35.4	+ 0.4
21	333 50	1.5	0.0	2.9	23.5	25	954	930	. .	942	956	60.8	333 54 0.2	675	− 29.3	21 59 52.1	− 1.8
22	18 58	9 26.7	26.1	29.9	18.8	23	902	922	. .	018	062	60.8	19 1 26.0	678	+ 20.6	70 9 7.8	− 0.2
23	24 20	8.3	7.5	11.0	1.8	22	. .	510	. .	674	. .	60.5	24 23 16.2	654	+ 27.0	75 30 4.4	+ 0.7
24	18 20	8.4	6.5	10.4	1.6	22	. .	. .	. .	420	. .	60.3	18 23 12.4	716	+ 20.0	69 29 53.6	− 0.2
25	20 40	4.5	2.8	7.0	27.5	21	. .	120	. .	228	. .	60.3	20 42 50.2	. .	+ 22.8	71 49 34.2	+12.8
26	28 50	10.0	8.5	12.5	3.5	26	. .	918	. .	060	. .	60.3	28 54 24.7	. .	+ 33.3	80 1 19.2	− 1.6
27	17 34	7.7	5.8	9.0	1.0	29	. .	080	. .	235	. .	60.3	17 38 55.2	728	+ 19.3	68 45 35.7	− 1.2
28	52 52	9.4	7.5	12.0	4.3	28	. .	112	. .	264	. .	60.3	52 56 42.6	. .	+ 1 20.2	104 4 24.0	− 0.3
29	35 14	8.0	6.0	10.0	1.4	27	. .	186	. .	260	. .	60.3	35 18 26.0	733	+ 40.0	86 25 27.2	− 2.2
30	61 28	0.0	29.6	3.4	25.1	27	. .	043	. .	288	. .	60.3	61 32 18.1	. .	+ 1 51.8	112 40 31.1	+ 2.2
31	44 24	0.0	28.7	2.6	23.4	27	. .	092	. .	352	. .	60.3	44 25 43.9	753	+ 59.6	95 33 4.7	− 3.3
32	39 26	9 29.0	27.3	1.6	22.4	22	. .	. .	. .	788	. .	60.3	39 26 34.9	753	+ 50.1	90 33 46.2	− 3.5
33																	
34																	
35																	
36	10 28	9.6	7.7	12.0	1.1	24	038	056	. .	228	258	56.3	10 31 36.4	588	+ 10.9	61 38 8.5	+ 0.6
37	310 14	13.1	12.6	12.5	4.9	26	372	350	370	337	340	56.3	310 18 14.2	520	− 1 7.9	1 23 27.5	+ 1.7
38	351 28	4.2	5.9	9.0	28.9	25	. .	426	. .	382	. .	56.4	351 31 52.8	458	− 8.5	42 38 5.5	− 1.2
39	15 8	5.0	5.9	5.9	27.8	24	. .	. .	. .	680	700	56.4	15 10 40.0	458	+ 15.4	66 17 16.6	+ 0.5
40	22 36	7.9	9.4	10.5	1.6	20	892	916	. .	002	060	56.5	22 38 47.7	446	+ 23.6	73 45 32.5	+ 0.7
41	5 52	3.1	3.6	7.3	28.2	27	. .	. .	. .	218	212	56.5	5 56 18.2	430	+ 5.9	57 2 45.3	+ 1.3
42	10 20	10 13.3	13.5	16.5	8.2	25	. .	098	. .	222	. .	56.5	10 23 57.2	424	+ 10.3	61 30 28.7	+ 0.8
43	39 14	10 12.7	12.1	14.3	6.7	26	520	547	. .	. .	. .	56.5	39 17 1.1	. .	+ 46.1	90 24 8.4	− 0.5
44	19 34	9 12.4	11.2	12.9	6.2	22	. .	000	145	445	. .	56.5	19 36 39.7	430	+ 20.1	70 43 21.0	
45	46 54	9 24.7	24.2	28.2	18.2	28	008	020	. .	154	162	56.8	46 58 23.0	. .	+ 1 1.1	98 5 45.3	+ 0.2
46	20 56	29.2	28.1	1.7	21.9	23	450	. .	. .	. .	670	56.8	20 59 18.0	528	+ 22.2	72 6 1.4	− 3.1
47	20 56	29.2	28.1	1.7	21.9	24	. .	860	. .	838	. .	56.8	20 59 37.6	. .	+ 22.2	72 6 21.0	− 3.1
48	14 28	5.3	3.8	5.8	27.2	21	485	508	. .	618	465	56.8	14 30 52.2	532	+ 15.0	65 37 28.4	− 1.5
49	12 12	11.0	10.0	11.8	3.7	26	. .	028	. .	130	. .	56.8	12 16 7.9	. .	+ 12.6	63 22 41.7	+ 0.4

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
44	− 18 53.0	+ 15 31.1

DATE.	Number.		OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
						I.	II.	III.	VI.	V.	VI.	VII.	VIII	XI.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.															m. s.	s.	s.	s.	h. m. s.	s.
Apr. 16	1	γ^1	Leonis	F.	.	46.0	48.7	50.2	57.0	59.0	1.3	7.9	9.5	12.3	11 59.10	− 0.08	+46.50	+46.54	10 12 45.56	+ 0.06
	2	δ	Leonis	F.	3	9.5	12.4	13.9	20.5	22.6	25.0	31.6	33.1	36.0	6 22.73	− 0.09	+46.61	+46.54	11 7 9.19	− 0.09
	3	δ	Crateris	F.	.	. .	. .	58.0	0.1	2.2	4.4	6.4	. .	. .	12 2.21	− 0.07	+46.60	+46.54	11 12 48.68	− 0.06
	4	β	Corvi	F.	3	32.5	35.0	36.6	43.5	45.6	48.0	54.6	56.2	58.9	26 45.66	− 0.07	+46.48	+46.55	12 27 32.14	+ 0.13
	5		Polaris, S. P.	F.	.	. .	. .	18.0	54.0	30.0	6.0	43.0	. .	. .	9 30.52	+ 2.01	. .	+46.55	1 10 19.08	− 2.02
	6	α	Virginis	F.	.	20.0	22.8	24.3	30.6	32.7	34.6	40.8	42.5	45.0	17 32.59	− 0.07	+46.58	+46.55	13 18 19.07	− 0.02
	7	ζ	Virginis	F.	.	. .	. .	11.9	14.0	16.0	18.1	20.1	. .	. .	27 16.01	− 0.07	+46.64	+46.55	13 28 2.49	− 0.01
	8		Hebe	F.	.	36.4	39.0	40.4	47.0	49.0	51.2	57.0	58.8	1.6	34 48.93	− 0.08	. .	+46.55	13 35 35.40	. .
	9		Anonymous	F.	.	52.3	54.6	56.6	2.9	4.9	7.0	13.1	14.9	17.5	43 4.87	− 0.07	. .	+46.55	13 43 51.35	. .
	10	α	Bootis	F.	.	43.0	45.6	47.4	53.9	55.9	58.4	4.8	6.4	9.1	8 56.06	− 0.09	+46.51	+46.56	14 9 42.53	+ 0.06
17	11	β	Orionis	Ha.	.	14.9	17.3	18.8	25.0	27.0	29.2	35.6	36.9	39.4	7 27.12	− 0.04	+46.67	+46.71	5 8 13.79	+ 0.05
	12	δ	Orionis	Ha.	.	19.4	21.7	23.4	29.5	31.5	33.6	39.7	41.3	43.8	24 31.54	− 0.05	+46.67	+46.71	5 25 18.20	+ 0.02
	13		Moon I, N.	Ha.	.	44.4	47.2	49.0	55.6	57.8	0.0	6.6	8.3	11.1	24 57.78	− 0.10	. .	+46.71	6 25 44.39	+69.67
	14	*l*	Leonis	Ha.	.	24.0	26.5	28.3	34.3	36.3	38.4	44.6	46.4	49.0	41 36.42	− 0.08	+46.70	+46.71	10 42 23.05	+ 0.08
	15	δ	Leonis	Ha.	.	9.5	12.3	13.9	20.3	22.5	24.8	31.4	33.0	35.8	6 22.61	− 0.10	+46.74	+46.71	11 7 9.22	− 0.05
	16	δ	Crateris	Ha.	.	. .	. .	. .	. .	. .	. .	10.4	11.9	14.5	12 1.94	− 0.02	+46.81	+46.71	11 12 48.63	− 0.10
	17	τ	Leonis	Ha.	.	14.2	16.7	18.3	24.3	26.4	28.6	34.5	36.2	38.8	20 26.44	− 0.06	+46.68	+46.71	11 21 13.09	+ 0.05
	18	υ	Leonis	Ha.	.	16.8	. .	20.8	24.8	28.9	32.9	37.0	. .	41.2	29 28.91	− 0.05	+46.74	+46.71	11 30 15.57	− 0.04
	19	β	Leonis	Ha.	.	24.3	27.0	28.5	34.9	37.0	39.2	45.3	47.1	49.9	41 37.02	− 0.09	+46.70	+46.71	11 42 23.64	+ 0.02
	20		Polaris, S. P.	Ha.	.	. .	. .	15.0	52.0	28.0	3.0	42.0	. .	. .	9 28.32	+ 7.60	. .	+46.71	1 10 22.63	+ 1.33
19	21 22		Moon I, N.	N. N.	4	32.7	35.5	37.0	43.8	45.9	48.0	54.7	56.4	59.1	24 45.90	− 0.14	. .	+46.62	8 25 32.38	+70.49
	23	ε	Hydræ	N.	3	51.5	54.0	55.7	1.7	3.8	5.8	12.0	13.6	16.1	39 3.80	+ 0.01	+46.69	+46.62	8 39 50.43	− 0.07
	24	κ	Cancri	N.	3	40.2	42.9	44.3	50.6	52.8	54.8	1.0	2.6	5.2	59 52.71	− 0.01	+46.58	+46.62	9 0 39.32	+ 0.04
	25	α	Leonis, (R.)	N.	3	24.9	27.5	29.5	35.3	37.4	39.6	45.8	47.4	50.0	0 37.49	+ 0.15	. .	+46.62	10 1 24.26	+ 0.01
	26	γ	Leonis	N.	3	45.8	48.5	50.2	56.8	58.9	1.1	7.7	9.3	12.1	11 58.93	− 0.08	+46.63	+46.62	10 12 45.47	+ 0.01
	27	9	Draconis	N.	3	. .	. .	52.1	1.1	9.8	18.5	27.0	. .	. .	23 9.67	− 1.41	. .	+46.62	10 23 54.88	+ 0.94
	28	*l*	Leonis	N.	.	24.0	26.5	28.2	34.3	36.3	38.4	44.7	46.3	48.9	41 36.40	− 0.01	+46.63	+46.62	10 42 23.01	+ 0.06
	29	ο	Virginis, (R.)	N.	4	34.0	36.6	38.1	44.4	46.5	48.5	54.7	56.3	58.9	57 46.44	0.00	. .	+46.62	11 58 33.06	− 0.25
	30	4	Draconis	N.	4	. .	. .	. .	. .	. .	. .	1.0	8.7	20.9	5 20.57	− 1.99	. .	+46.62	12 6 5.20	− 0.31
	31	η	Virginis	N.	4	14.7	17.2	18.7	24.8	26.8	28.9	35.0	36.5	39.0	12 26.84	+ 0.06	+46.56	+46.62	12 13 13.52	+ 0.05
	32	κ	Draconis, (R.)	N.	4	. .	. .	. .	9.0	15.0	21.2	33.4	37.9	45.7	27 8.95	− 0.64	. .	+46.62	12 27 54.93	− 0.18
	33		Polaris, S. P.	N.	4	. .	. .	6.0	42.0	17.0	52.5	29.5	. .	. .	9 17.72	+18.01	. .	+46.62	1 10 22.35	+ 0.77
21	34		Sun II, N.	Ha.	.	52.8	55.2	56.6	3.0	5.2	7.2	13.5	15.2	17.5	58 5.13	+ 0.67	. .	+46.61	1 58 52.41	−65.37
	35	α	Leonis, (R.)	Ha.	.	24.7	27.4	28.9	35.3	37.3	39.4	45.6	47.2	49.9	0 37.30	+ 0.32	. .	+46.62	10 1 24.24	+ 0.01
	36		Moon I, N.	Ha.	.	4.6	7.4	13.2	15.5	17.7	19.8	21.9	27.7	30.4	24 17.58	+ 0.70	. .	+46.62	10 25 4.90	+69.63
	37	*l*	Leonis	Ha.	.	23.3	25.9	27.4	33.6	35.6	37.7	43.9	45.4	48.2	41 35.67	+ 0.71	+46.62	+46.62	10 42 23.00	+ 0.07
	38	α	Ursæ Majoris	Ha.	.	26.0	31.6	35.0	48.1	52.5	57.0	10.4	13.5	19.0	54 52.57	− 0.67	. .	+46.62	10 55 38.52	+ 0.11
	39	δ	Leonis	Ha.	.	8.8	11.6	13.3	19.9	22.0	24.2	30.8	32.5	35.2	6 22.03	+ 0.53	+46.65	+46.62	11 7 9.18	− 0.05
	40	ο	Cephei, S. P.	Ha.	.	56.0	49.5	45.3	35.0	29.1	23.7	. .	. .	. .	12 24.07	+ 3.31	. .	+46.62	23 13 14.00	− 0.12
	41	λ	Draconis	Ha.	.	. .	. .	40.5	46.4	52.6	58.3	4.4	. .	. .	22 52.42	− 1.94	. .	+46.62	11 23 37.10	− 0.36
	42	β	Leonis	Ha.	.	23.7	26.4	27.9	34.2	36.4	38.5	44.8	46.4	49.0	41 36.37	+ 0.64	+46.60	+46.62	11 42 23.63	+ 0.04
	43	ο	Virginis	Ha.	.	33.5	36.1	37.6	43.8	45.9	47.9	54.1	55.7	58.2	57 45.87	+ 0.74	+46.63	+46.62	11 58 33.23	− 0.07
	44	θ	Virginis	Ha.	.	11.7	14.3	15.6	22.0	24.0	26.0	32.1	33.8	36.2	2 23.97	+ 0.97	+46.64	+46.62	13 3 11.56	+ 0.03
	45		Polaris, S. P.	Ha.	.	33.0	32.0	46.0	18.0	56.0	. .	. .	. .	. .	8 55.84	+39.90	. .	+46.62	1 10 22.36	+ 0.59
	46	ζ	Virginis	Ha.	.	2.8	5.1	7.0	13.0	15.1	17.1	23.2	24.8	27.3	27 15.04	+ 0.88	+46.60	+46.62	13 28 2.54	+ 0.02
22	47		Sun I, S.	N.	3	26.3	28.9	30.5	36.7	38.8	40.8	47.2	48.8	51.4	59 38.82	+ 0.60	. .	+46.61	2 0 26.03	. .
	48		Sun II, N.	N.	3	. .	. .	45.3	47.5	49.6	51.6	53.6	. .	. .	1 49.51	+ 0.60	. .	+46.61	2 2 36.72	. .
	49	α	Tauri, (R.)	N.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .

8. Wire A used.
9. Observed for Parthenope.
30.32. Bisections at sets B and D.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″								° ′ ″		′ ″	° ′ ″	″
1	18 20	13.0	12.1	13.8	5.8	22	. .	260	. .	382	. .	56.8	18 23 12.5	545	+ 19.7	69 29 53.4	− 0.3
2	17 36	13.0	12.3	14.4	5.6	21	. .	182	. .	294	. .	56.9	17 38 56.2	550	+ 18.5	68 45 37.9	+ 1.4
3	52 52	5.0	4.5	7.5	0.0	28	. .	950	. .	058	. .	56.9	52 56 47.6	. .	+ 1 16.8	104 4 25.6	+ 1.3
4	61 28	1.6	1.6	4.2	26.2	27	. .	. .	. .	528	530	56.9	61 32 20.7	563	+ 1 47.0	112 40 28.9	− 0.2
5	307 28	4.5	4.2	4.6	26.6	23	872	876	922	959	995	56.9	307 31 28.4	568	− 1 15.7	358 36 33.9	− 0.2
6	49 18	5.5	3.6	6.8	29.1	22	. .	. .	. .	870	880	56.9	49 21 12.5	. .	+ 1 7.8	100 28 41.5	− 0.4
7	38 44	9.1	7.9	10.9	2.4	27	. .	. .	. .	630	688	56.9	38 48 29.6	. .	+ 46.8	89 55 37.6	+ 1.9
8	27 28	4.9	4.3	7.3	28.6	32	. .	270	. .	238	. .	56.9	27 31 3.0	. .	+ 30.3	78 37 54.5	− 2.1
9	41 28	7.0	6.7	8.8	1.3	26	. .	. .	. .	280	240	56.9	41 32 6.6	560	+ 51.5	92 39 19.3	
10	18 58	2.0	1.2	3.5	24.0	24	. .	012	. .	090	. .	56.9	19 1 28.0	558	+ 20.0	70 8 9.2	+ 1.6
11	47 10	10 1.1	1.5	4.7	25.0	27	122	154	. .	111	226	56.0	47 14 14.7	400	+ 1 0.6	98 21 36.5	+ 2.6
12	39 14	6.5	5.9	4.4	0.9	22	. .	. .	. .	162	193	56.0	39 17 1.8	398	+ 45.8	90 24 8.8	0.0
13	18 36	10 7.5	7.0	10.6	1.1	29	280	300	. .	190	195	56.0	18 40 52.9	398	+ 19.0	69 47 33.1	
14	27 34	9 29.0	29.7	3.0	21.9	30	162	212	. .	300	312	56.0	27 39 0.1	530	+ 30.2	78 45 51.5	0.0
15	17 34	3.0	2.9	6.0	25.1	29	750	758	. .	900	890	56.0	17 38 57.1	. .	+ 18.4	68 45 36.7	+ 0.3
16	52 52	0.5	2.4	6.0	24.9	29	. .	. .	. .	330	. .	56.0	52 56 48.3	550	+ 1 16.8	104 4 26.3	+ 1.9
17	35 16	1.8	2.5	6.0	25.6	20	035	100	. .	225	330	56.0	35 18 29.1	. .	+ 41.1	86 25 31.4	+ 2.1
18	38 54	28.5	28.0	2.5	22.1	30	450	420	. .	590	595	56.0	38 59 3.5	. .	+ 46.9	90 6 11.6	+ 0.5
19	23 32	4.6	4.0	8.2	27.5	22	155	242	. .	340	355	56.0	23 35 3.4	550	+ 25.3	74 41 49.9	+ 2.9
20	307 28	1.8	3.4	5.0	23.6	24	250	245	198	190	250	56.0	307 31 30.2	585	− 1 16.1	358 36 35.3	+ 1.4
21	20 32	8 21.2	19.8	23.9	12.5	25	388	519	610	720	815	50.9	20 35 5.3	359	+ 20.9	71 41 47.4	
22		12 22.4	21.5	23.8	12.4												
23	31 56	10 13.4	12.0	16.7	4.4	23	. .	. .	411	. .	. .	50.9	31 59 23.5	. .	+ 34.7	83 6 19.4	+ 1.3
24	27 38	13.5	12.8	16.9	4.7	24	. .	391	. .	506	. .	50.9	27 41 39.8	370	+ 29.2	78 48 30.2	− 0.9
25	153 40	15.0	16.3	19.6	6.2	21	. .	890	. .	995	. .	50.9	153 43 3.7	383	+ 27.6	77 23 45.1	+ 1.7
26	18 20	12.8	12.4	16.5	4.8	22	. .	685	. .	795	. .	50.9	18 23 13.4	. .	+ 18.6	69 29 53.2	− 0.2
27	322 28	18.2	17.5	20.2	8.6	21	. .	. .	588	. .	. .	50.9	322 31 0.2	. .	− 42.8	13 36 38.6	0.0
28	27 36	14.8	13.7	17.7	6.2	21	. .	. .	822	. .	. .	50.9	27 38 59.8	. .	+ 29.2	78 45 50.2	− 1.2
29	150 32	12.1	14.5	17.9	4.4	19	280	378	. .	471	520	50.9	150 34 23.0	396	− 31.6	80 32 29.8	+ 1.6
30	320 30	17.2	15.9	17.9	7.4	24	. .	. .	. .	115	. .	50.9	320 33 37.3	. .	− 46.0	11 39 12.5	− 1.7
31	38 46	15.2	13.7	18.1	7.4	23	. .	032	. .	110	. .	50.9	38 49 20.3	390	+ 45.0	89 56 26.5	+ 0.4
32	211 32	19.5	19.7	21.9	9.1	27	. .	. .	392	388	405	50.9	211 36 30.1	. .	+ 34.4	19 29 16.7	− 0.7
33	307 28	10.5	9.9	12.5	0.9	23	680	708	702	737	735	50.9	307 31 24.8	399	− 1 12.9	358 36 33.1	− 0.2
34	26 30	13.5	14.5	17.4	5.8	29	. .	. .	. .	180	191	47.8	26 34 49.6	367	+ 27.9	77 41 38.7	− 3.9
35	153 40	8 9.6	13.9	16.4	2.8	26	200	220	. .	320	315	47.8	153 43 3.0	424	− 27.8	77 23 46.0	+ 2.8
36	27 18	10 12.5	15.5	19.5	6.5	25	770	050	. .	760	900	47.8	27 22 7.6	430	+ 29.2	78 21 58.0	
37	27 34	17.5	19.9	21.6	10.1	29	. .	610	. .	650	. .	47.8	27 39 1.3	. .	+ 29.6	78 45 52.1	+ 0.9
38	336 22	9.5	12.1	11.7	0.1	27	. .	950	. .	052	. .	47.8	336 26 28.0	440	− 24.7	27 32 24.5	− 1.3
39	17 34	7.4	9.5	11.1	29.5	29	. .	960	. .	070	. .	47.8	17 38 56.8	. .	+ 18.0	68 45 36.0	0.0
40	286 16	8.5	13.0	12.0	0.4	27	370	435	. .	. .	. .	47.8	286 20 17.9	445	− 3 10.6	337 23 28.5	+ 1.2
41	328 46	7.6	11.4	10.5	29.1	29	. .	. .	. .	590	525	47.8	328 50 51.6	. .	− 34.2	19 56 38.6	− 0.7
42	23 32	9.4	12.0	14.1	2.0	22	390	. .	. .	540	540	47.8	23 35 2.2	450	+ 24.8	74 41 48.2	− 0.4
43	29 22	8.1	11.2	13.5	1.2	24	. .	500	. .	595	. .	47.8	29 25 34.7	. .	+ 31.3	80 32 27.2	− 0.8
44	43 40	5.0	8.4	10.0	27.7	23	. .	. .	. .	420	450	47.8	43 43 13.6	. .	+ 54.4	94 50 29.2	+ 2.6
45	307 28	5.7	9.5	8.5	28.0	24	170	190	225	. .	. .	47.8	307 31 26.1	472	− 1 14.1	358 36 33.2	+ 0.5
46	38 46	9.1	11.5	12.8	2.4	20	220	230	. .	355	400	47.8	38 48 30.3	475	+ 45.8	89 55 37.3	+ 1.7
47	26 44	16.2	17.7	21.5	6.7	20	148	181	. .	. .	. .	47.7	26 46 35.2	. .	+ 28.6	77 53 25.0	− 3.9
48	26 12	12.2	12.9	15.2	3.5	21	. .	. .	. .	258	254	47.7	26 14 46.5	448	+ 28.0	77 21 35.7	− 3.9
49	157 18	3.5	8.3	12.4	24.5	23	. .	. .	. .	357	358	47.7	157 21 11.6	405	− 23.4	73 45 33.0	+ 1.2

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
11	29.991	70.0	73.0
24	29.830	68.9	74.0
31	29.819	66.5	71.5
35	29.860	63.0	69.5

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semidiam.
	′ ″	′ ″
13	− 18 12.6	+ 15 41.4
21	− 20 28.3	+ 16 3.0
36	− 27 22.6	+ 16 22.5

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Apr. 22	1	ι Aurigæ . . .	N.	3	25.5	28.6	30.3	37.6	40.1	42.4	49.8	51.6	54.7	47 40.07	+ 0.24	+46.56	+46.62	4 48 26.93	+ 0.03
	2	μ Leonis	N.	4	18.3	21.2	22.9	29.8	32.0	34.2	41.1	42.8	45.7	44 32.00	+ 0.27	+46.70	+46.62	9 45 18.89	− 0.03
	3	79 Draconis, S. P. .	N.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	4	α Leonis, (R.) . .	N.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	5	γ^1 Leonis, (R.) . .	N.	5	. .	. .	54.3	56.6	58.7	0.9	3.1	. .	. .	11 58.71	+ 0.13	. .	+46.63	10 12 45.47	+ 0.04
	6	9 Draconis . . .	N.	3	18.7	29.6	36.0	2.2	10.9	19.8	45.5	52.0	2.6	23 10.81	− 1.13	. .	+46.63	10 23 56.31	+ 1.70
	7	*l* Leonis	N.	3	23.3	25.9	27.4	33.6	35.6	37.7	44.0	45.7	48.2	41 35.71	+ 0.62	+46.66	+46.63	10 42 22.96	+ 0.04
	8	α Ursæ Majoris, (R.)	N.	3	. .	. .	44.7	49.2	53.4	57.8	2.2	. .	. .	54 53.44	− 1.61	. .	+46.63	10 55 38.46	− 0.42
	9	Moon I, N. . .	N.	4	42.1	44.8	46.2	52.6	54.7	56.8	3.0	4.6	7.3	22 54.68	+ 0.71	. .	+46.63	11 23 42.02	+69.13
	10	γ Ursæ Majoris . .	N.	3	. .	. .	3.9	7.3	10.9	14.3	17.7	. .	. .	46 10.80	− 0.40	. .	+46.63	11 46 57.03	+ 0.04
	11	4 Draconis, (R.) .	N.	3	23.0	36.3	42.2	13.5	24.4	34.1	4.2	11.5	24.4	5 23.73	− 4.56	. .	+46.63	12 6 5.70	+ 1.33
	12	η Virginis . . .	N.	2	. .	. .	. .	. .	. .	. .	34.2	35.7	38.3	12 26.05	+ 0.79	+46.61	+46.63	12 13 13.47	+ 0.01
	13	Eurynome . . .	N.	1	20.6	23.3	24.8	28.7	30.8	32.8	. .	. .	45.0	31 32.86	+ 0.86	. .	+46.63	12 32 20.35	. .
	14	Concordia . . .	N.	1	35.8	39.0	44.3	46.2	. .	52.5	56.6	57.9	0.5	47 48.34	+ 0.79	. .	+46.64	12 48 35.77	. .
	15	θ Virginis . . .	N.	5	11.9	14.4	15.8	22.0	24.0	26.0	32.1	33.7	36.2	2 24.01	+ 0.85	+46.64	+46.64	13 3 11.50	− 0.03
	16	Polaris, S. P. . .	N.	4	. .	. .	46.5	22.5	58.0	. .	. .	. .	. .	8 58.83	+37.02	. .	+46.64	1 10 22.49	+ 0 42
	17	Polaris, S. P., (R.).	N.	4.3	13.0	. .	. .	. .	. .	. .	. .	. .	. .	8 48.00	+45.48	. .	+46.64	1 10 20.12	+ 0.05
	18	η Bootis	N.	4	28.0	30.7	32.4	38.8	41.1	43.2	49.7	51.4	54.0	47 41.03	+ 0.50	+46.63	+46.64	13 48 28.17	− 0.02
23	19	Sun I, N. . . .	Ha.	.	11.0	13.5	15.0	21.4	23.5	25.6	31.8	33.5	36.0	3 23.48	+ 0.52	. .	. .	. . . .	. .
	20	Sun II, S. . . .	Ha.	.	. .	. .	30.0	32.1	34.4	36.3	38.4	. .	. .	5 34.23	+ 0.52	. .	. .	. . . .	. .
24	21	Lalande 20104. .	F.	3	23.0	25.6	27.2	33.8	36.0	38.2	44.8	46.2	49.0	14 35.98	+ 0.42	. .	+46.65	10 15 23.05	+ 2.65
	22	δ Leonis	F.	.	9.0	11.7	13.3	19.9	22.0	24.2	30.8	32.6	35.2	6 22.08	+ 0.39	+46.71	+46.66	11 7 9.13	− 0.07
	23	β Leonis	F.	3	. .	. .	32.4	34.5	36.5	38.6	40.7	. .	. .	41 36.53	+ 0.45	+46.60	+46.66	11 42 23.64	+ 0.07
	24	β Corvi	F.	3	31.1	34.0	35.5	42.3	44.5	46.7	53.3	55.1	57.7	26 44.47	+ 0.87	+46.72	+46.66	12 27 32.00	0.00
	25	α Canum Venat. .	F.	3	52.8	56.0	58.0	5.8	8.4	11.0	18.9	20.9	24.0	49 8.42	+ 0.11	+46.55	+46.66	12 49 55.19	+ 0.12
	26	θ Virginis . . .	F.	3	11.9	14.4	15.9	22.0	24.2	26.1	32.3	33.9	36.4	2 24.12	+ 0.68	+46.70	+46.66	13 3 11.46	− 0.07
	27	Polaris, S. P. . .	F.	.	. .	. .	54.0	30.0	. .	. .	. .	. .	. .	9 6.65	+28.99	. .	+46.66	1 10 22.30	− 0.34
	28	Moon I, N. . .	F.	.	31.7	34.3	35.9	42.1	44.4	46.4	52.6	54.2	56.9	18 44.28	+ 0.69	. .	+46.66	13 19 31.63	+68.81
25	29	ι Piscium . . .	N.	4	12.3	14.9	16.4	22.6	24.6	26.6	32.7	34.3	36.9	32 24.59	+ 0.52	+46.94	. .	. . . .	. .
	30	γ Pegasi	N.	3	28.7	31.3	32.9	39.2	41.4	43.5	49.7	51.4	53.9	5 41.33	+ 0.43	+46.92	. .	. . . .	. .
	31	Polaris	N.	2	. .	. .	17.5	42.0	6.0	31.0	56.0	. .	. .	10 6.18	−29.39	. .	+46.94	1 10 23.73	+ 0.52
26	32	Sun I, N. . . .	N.	2	28.0	30.6	32.0	38.5	40.5	42.7	49.0	50.6	53.3	14 40.58	+ 0.33	. .	+46.94	2 15 27.85	. .
	33	Sun II, S. . . .	N.	2	39.1	41.9	43.5	49.9	51.8	54.0	0.3	1.9	4.4	16 51.87	+ 0.33	. .	+46.94	2 17 39.14	. .
	34	Polaris	F.	1	. .	. .	. .	. .	. .	56.0	. .	. .	. .	10 7.80	−32.70	. .	+46.83	1 10 21.93	− 1.73
27	35	Sun I, S. . . .	F.	3	14.7	17.2	18.9	25.1	27.4	29.5	35.9	37.3	40.1	18 27.34	+ 0.41	. .	+46.84	2 19 14.59	. .
	36	Sun II, N. . . .	F.	3	26.0	28.7	30.5	36.7	38.8	40.9	47.0	48.8	51.3	20 38.74	+ 0.41	. .	+46.84	2 21 25.99	. .
	37	α Tauri	F.	2	23.1	26.1	27.9	. .	. .	. .	44.5	46.3	48.9	27 36.13	+ 0.37	+46.85	. .	. . . .	. .
28	38	Sun I, N. . . .	Ha.	.	1.4	4.2	5.9	12.2	14.4	16.4	22.6	24.2	27.0	22 14.26	+ 0.35	. .	. .	. . . .	. .
	39	Sun II, S. . . .	Ha.	.	13.3	15.7	17.5	23.7	25.7	27.9	34.3	35.9	38.5	24 25.83	+ 0.35	. .	. .	. . . .	. .
29	40	α Tauri	N.	2	. .	. .	. .	. .	. .	. .	44.1	45.8	48.4	28 35.66	+ 0.36	+47.32	+47.28	4 28 23.30	− 0.04
	41	ι Aurigæ . . .	N.	3	24.9	27.8	29.7	37.0	39.4	41.8	49.1	51.0	54.0	47 39.41	+ 0.12	+47.30	+47.28	4 48 26.81	− 0.05
	42	κ Ophiuchi . . .	N.	2	29.1	31.7	33.3	39.5	41.6	43.7	49.9	51.5	54.0	50 41.59	+ 0.44	+47.32	+47.34	16 51 29.37	+ 0.05
	43	Saturn, I ring, N. .	N.	2.1	50.0	52.8	54.5	. .	. .	. .	11.7	13.5	16.2	0 3.12	+ 0.77	. .	+47.34	17 0 51.23	. .
	44	Saturn, II ring, S.	N.	.	. .	. .	1.7	3.6	5.8	8.0	10.2	. .	. .	0 5.85	+ 0.77	. .	+47.34	17 0 53.96	. .
	45	α Herculis, (R.) . .	N.	1.2	. .	. .	49.9	52.1	54.2	. .	2.7	4.3	6.8	7 54.20	+ 0.21	. .	+47.34	17 8 41.75	+ 0.06
	46	*b* Ophiuchi . . .	N.	1	. .	. .	31.7	35.4	37.9	40.0	44.6	46.1	49.2	17 35.67	+ 0.81	. .	+47.34	17 18 23.82	+ 0.20
	47	α Ophiuchi, (R.) .	N.	3	52.4	55.0	56.5	2.7	4.9	7.0	13.3	14.7	17.3	28 4.87	+ 0.24	. .	+47.34	17 28 52.45	+ 0.08

3.6.11. Bisections at sets B and D.
14. Wire A used.
17. Bisections at D_3, $18^m\,20^s$, $19^m\,0^s$, $19^m\,35^s$, and $20^m\,30^s$, clock time.
28. Bisections at wires II–VI.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	5 52	15.0	15.2	19.5	5.5	27	. .	. .	106	. .	. .	47.7	5 56 21.0		+ 5.8	57 2 48.0	+ 3.6
2	12 12	11.6	12.2	17.5	4.5	26	435	483	. .	591	596	47.7	12 16 8.0	452	+ 12.4	63 22 41.6	+ 0.9
3	291 58	4.9	8.3	10.7	27.2	21	184	145	. .	. .	. .	47.7	292 0 39.8	. .	− 2 19.5	343 4 41.5	− 0.6
4	153 40	1.2	6.9	10.7	23.6	22	. .	814	. .	. .	950	47.7	153 43 3.6	. .	− 28.1	77 23 45.7	+ 2.5
5	161 34	3.7	8.2	11.5	24.9	21	451	522	. .	592	632	47.7	161 36 44.7	469	− 19.0	69 29 55.5	+ 2.4
6	322 28	4.0	5.8	9.7	25.5	22	514	548	. .	570	566	47.7	322 30 59.6	. .	− 43.7	13 36 37.1	− 1.4
7	27 36	5.4	8.1	13.0	28.5	22	295	299	. .	381	416	47.7	27 38 58.8	. .	+ 29.9	78 45 49.9	− 1.3
8	203 30	7.0	10.3	13.8	28.7	24	. .	. .	. .	432	534	47.7	203 33 30.7	490	+ 25.0	27 32 25.5	− 0.1
9	32 4	14.6	15.9	20.9	6.9	28	107	321	486	660	854	47.7	32 8 25.6	. .	+ 36.1	83 15 22.9	
10	344 24	8.7	10.5	13.9	0.4	27	. .	. .	991	. .	. .	47.7	344 28 17.1	. .	− 16.0	35 34 22.3	+ 0.1
11	219 22	12.4	15.8	19.0	3.0	27	454	352	. .	138	475	47.7	219 26 21.3	. .	+ 47.3	11 39 12.6	− 0.8
12	38 46	11.2	12.2	17.3	3.2	23	. .	. .	. .	477	466	47.7	38 49 19.8	519	+ 46.3	89 56 27.3	+ 1.3
13																	
14	38 42	12.4	14.1	19.0	4.5	22	. .	168	. .	017	. .	47.7	38 42 27.0	. .	+ 46.2	89 49 34.4	− 3.4
15	43 40	11.3	13.6	18.9	4.0	22	. .	. .	769	. .	. .	47.7	43 43 10.8	. .	+ 55.0	94 50 27.0	+ 0.4
16	307 28	5.8	8.7	11.7	27.5	24	222	220	. .	. .	. .	47.7	307 31 26.9	. .	− 1 15.0	358 36 33.1	+ 0.7
17	232 26	3.9	8.1	10.0	25.6	20	495	525	525	578	662	47.7	232 28 34.9	522	+ 1 15.0	358 36 31.3	− 1.1
18	19 46	10.2	10.5	14.8	1.8	26	. .	. .	270	. .	. .	47.7	19 50 1.7	532	+ 20.9	70 56 43.8	− 0.4
19	25 52	8.6	9.7	14.7	29.9	21	404	380	. .	. .	. .	48.0	25 54 46.9	. .	+ 27.1	77 1 35.2	− 3.8
20	26 24	7.1	8.4	12.3	27.5	21	. .	. .	. .	026	053	48.0	26 26 38.8	372	+ 27.7	77 33 27.7	− 3.8
21	20 40	10 25.3	25.3	29.5	15.7	20	425	440	. .	562	584	48.7	20 42 49.4	445	+ 21.4	71 49 32.0	+13.7
22	17 36	10 24.3	24.8	29.7	15.7	20	. .	. .	. .	958	. .	48.7	17 38 55.4	454	+ 18.0	68 45 34.6	− 1.1
23	23 32	11 0.7	1.0	6.1	22.2	20	. .	892	. .	994	. .	48.7	23 35 2.1	455	+ 24.8	74 41 48.1	− 0.2
24	61 28	10 0.7	2.1	7.4	25.4	28	. .	. .	. .	080	092	48.7	61 32 21.6	458	+ 1 44.4	112 40 27.2	− 2.9
25	359 48	10 17.5	16.8	22.8	9.1	25	. .	712	. .	808	. .	48.7	359 52 2.4	458	− 0.1	50 58 23.5	− 0.8
26	43 40	13.2	14.3	19.4	6.1	22	. .	. .	. .	568	714	48.7	43 43 10.3	. .	+ 54.3	94 50 25.8	− 0.8
27	307 28	10.2	12.5	14.7	2.1	23	664	714	. .	. .	. .	48.7	307 31 23.7	. .	− 1 13.9	358 36 31.0	− 0.7
28	42 46	9 10.0	9.5	14.0	1.8	23	967	199	309	518	786	48.7	42 49 3.1	462	+ 52.7	93 56 17.0	
29	33 54	5.9	7.1	11.2	28.8	26	612	618	. .	700	717	48.7	33 58 5.2	512	+ 38.7	85 5 5.1	− 2.2
30	24 22	7.6	8.7	12.4	28.9	26	. .	. .	285	. .	. .	48.7	24 26 0.5	. .	+ 26.0	75 32 47.7	− 2.0
31	310 14	7.0	9.3	10.1	26.6	27	196	289	240	288	280	48.7	310 18 14.5	. .	− 1 6.7	1 23 29.0	+ 0.3
32	24 52	8.6	10.5	13.7	0.6	27	044	122	. .	. .	. .	48.7	24 56 14.8	405	+ 26.1	76 3 2.1	− 3.7
33	25 24	8.5	10.2	13.7	0.2	26	. .	. .	. .	311	278	48.7	25 28 1.6	. .	+ 26.7	76 34 49.5	− 3.7
34	310 14	9 27.9	28.2	29.9	17.6	27	. .	. .	. .	874	. .	48.8	310 18 14.2	342	− 1 5.1	1 23 30.3	+ 1.3
35	25 6	10 14.5	15.3	19.1	4.5	21	615	662	. .	. .	. .	48.8	25 8 56.7	405	+ 26.3	76 15 44.2	− 0.7
36	24 34	15.5	16.5	19.0	5.2	22	. .	. .	. .	672	697	48.8	24 37 12.4	. .	+ 25.7	75 43 59.3	− 3.7
37	22 34	13.4	14.8	16.8	4.6	29	. .	. .	. .	. .	120	48.8	22 38 48.8	312	+ 22.9	73 45 32.9	+ 1.2
38	24 14	10 10.6	11.3	11.5	0.7	27	325	405	. .	. .	. .	48.8	24 18 19.4	. .	+ 25.0	75 25 5.6	− 3.6
39	24 46	7.4	8.7	9.0	27.3	26	. .	. .	. .	758	760	48.8	24 50 6.3	337	+ 25.6	75 56 53.1	− 3.6
40	22 34	10 18.3	20.0	21.1	8.2	20	. .	. .	. .	772	808	50.2	22 38 49.5	392	+ 23.4	73 45 34.1	+ 2.4
41	15 52	16.7	17.1	19.7	6.8	26	745	781	. .	889	925	50.2	15 56 19.0	. .	+ 16.0	67 2 56.2	+ 1.3
42	29 14	10.8	12.5	14.8	2.0	27	. .	. .	109	150	128	50.2	29 18 17.6	564	+ 32.7	80 25 11.5	+ 0.2
43	59 48	6.2	7.7	10.8	28.3	28	400	. .	. .	. .	344	50.2	59 52 32.6	. .	+ 1 40.0	111 0 33.8	− 0.8
44	59 48	6.2	7.7	10.8	28.3	29	. .	518	. .	520	. .	50.2	59 52 50.3	. .	+ 1 40.0	111 0 51.5	− 0.8
45	155 36	7.3	11.6	13.5	28.9	23	. .	. .	. .	182	175	50.2	155 39 14.5	. .	− 26.3	75 27 33.0	+ 1.1
46	62 52	8.2	9.8	13.5	2.4	21	230	152	. .	350	379	50.2	62 54 46.9	. .	+ 1 53.3	114 3 1.4	− 0.6
47	153 42	9.1	13.2	15.2	1.1	26	798	766	. .	900	924	50.2	153 46 13.2	561	− 28.7	77 20 36.7	+ 2.1

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
12	30.227	57.7	69.0
17	30.226	57.8	68.5

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
9	− 31 55.2	+ 16 24.6
28	− 40 53.8	+ 16 30.0

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
Apr. 29	1	ψ¹ Draconis, (R) . .	N.	3	54.0	2.6	7.4	27.5	34.3	40.9	0.4	5.8	14.1	43 34.11	− 2.23	. .	+47.34	17 44 19.22	− 0.09
	2	μ Sagittarii . . .	N.	1	. .	. .	4.5	6.5	8.7	10.9	13.1	. .	. .	5 8.73	+ 0.77	+47.31	+47.35	18 5 56.85	+ 0.02
	3	Moon II, N. . .	N.	3	. .	. .	51.9	. .	56.6	58.7	1.0	. .	9.9	14 0.95	+ 0.79	. .	+47.35	18 14 49.09	−68.87
May 2	4	Moon II, N. . .	N.	3.2	41.0	43.9	45.5	52.1	54.2	56.4	3.0	4.5	7.3	57 54.21	+ 0.50	. .	+47.79	20 58 42.50	−64.85
	5	ζ Cygni	N.	4	20.0	22.9	24.5	31.6	34.0	36.4	43.4	45.2	48.0	6 34.00	+ 0.12	+47.82	+47.79	21 7 21.91	− 0.04
	6	α Cephei	N.	4	14.2	19.8	22.8	36.0	40.3	44.7	57.7	0.9	6.4	14 40.31	− 0.52	. .	+47.79	21 15 27.58	0.00
	7	β Aquarii . . .	N.	4	39.2	41.8	43.2	49.3	51.4	53.5	59.8	1.1	3.7	23 51.44	+ 0.41	+47.83	+47.79	21 24 39.64	− 0.04
	8	η Aquarii . . .	N.	3	36.7	39.2	40.7	46.8	48.9	50.9	57.0	58.5	1.1	28 48.87	+ 0.37	+47.88	+47.79	22 28 37.03	− 0.09
	9	ζ Pegasi	N.	4	54.8	57.4	58.9	5.2	7.3	9.3	15.5	17.1	19.7	34 7.24	+ 0.29	+47.91	+47.79	22 34 55.32	− 0.08
3	10	θ Virginis . . .	N.	3	. .	. .	. .	. .	. .	. .	31.3	33.0	35.5	2 23.21	+ 0.40	+47.89	+47.85	13 3 11.46	− 0.07
	11	Polaris, S. P. . .	N.	3	. .	. .	6.0	44.0	17.5	52.5	. .	. .	. .	9 17.82	+19.13	. .	+47.85	1 10 24.80	− 1.55
	12	η Ursæ Majoris, (R.)	N.	3	17.7	21.7	24.0	33.5	36.8	39.9	49.3	51.8	55.7	41 36.71	− 0.36	. .	+47.85	13 42 24.20	− 0.01
	13	α Bootis	N.	3	41.5	44.2	45.8	52.4	54.5	56.7	3.3	4.8	7.5	8 54.52	+ 0.22	+47.84	+47.85	14 9 42.59	+ 0.02
	14	α² Libræ	N.	3	38.7	41.5	43.0	49.4	51.5	53.5	59.9	1.5	4.2	42 51.47	+ 0.48	+47.74	+47.86	14 43 39.81	+ 0.10
	15	β Ursæ Minoris, (R.)	N.	2	. .	. .	8.7	17.1	24.9	. .	55.6	1.6	11.3	50 24.72	− 1.58	. .	+47.86	14 51 11.00	+ 0.29
	16	μ Bootis	N.	2	30.7	34.0	36.0	43.7	46.3	48.8	56.5	58.5	1.7	18 46.24	+ 0.04	+47.85	+47.86	15 19 34.14	+ 0.01
	17	Melete	N.	3	45.5	48.2	49.5	55.8	57.6	59.2	6.0	7.8	10.3	26 57.77	+ 0.44	. .	+47.86	15 27 46.07	. .
	18	Anonymous . .	N.	1	. .	. .	41.5	43.7	46.0	48.2	50.6	. .	. .	39 45.99	+ 0.54	. .	+47.86	15 40 34.39	. .
	19	δ Scorpii . . .	N.	3	35.7	38.4	40.0	46.6	48.8	51.0	57.7	59.3	2.0	52 48.83	+ 0.53	+47.77	+47.86	15 53 37.22	+ 0.09
	20	κ Ophiuchi . . .	N.	3	28.9	31.5	33.0	39.3	41.4	43.4	49.6	51.1	53.8	50 41.33	+ 0.30	+47.80	+47.87	16 51 29.50	+ 0.10
	21	Saturn I, S. . .	N.	3	55.5	58.3	59.8	. .	. .	. .	17.3	18.9	21.5	59 8.55	+ 0.52	. .	+47.87	16 59 56.94	. .
	22	Saturn II, N. . .	N.	3	. .	. .	5.4	7.6	9.8	12.0	14.2	. .	. .	59 9.79	+ 0.52	. .	+47.87	16 59 58.18	. .
	23	Moon II, N. . .	F.	3	49.2	50.8	55.2	57.3	59.5	1.6	3.9	8.2	9.7	47 59.49	+ 0.46	. .	+47.77	21 48 47.72	−63.43
	24	α Aquarii . . .	F.	3.2	2.8	5.3	7.0	13.1	15.0	17.1	23.2	24.8	27.2	58 15.06	+ 0.35	+47.73	+47.77	21 59 3.18	+ 0.03
	25	β Ceti	F.	3	58.3	1.1	2.8	9.1	11.4	13.5	20.1	21.8	24.3	36 11.38	+ 0.48	+47.85	+47.79	0 36 59.65	− 0.03
	26	Polaris	F.	.	. .	. .	8.0	31.5	55.0	20.0	44.5	. .	. .	9 55.48	−19.21	. .	+47.79	1 10 24.06	− 2.45
4	27	Sun I, S. . . .	F.	.	56.0	58.3	0.0	6.4	8.5	10.6	17.0	18.6	21.3	45 8.52	+ 0.20	. .	+47.80	2 45 56.52	. .
	28	Sun II, N. . . .	F.	.	8.2	11.0	12.7	19.0	21.1	23.3	29.7	31.2	34.0	47 21.13	+ 0.20	. .	+47.80	2 48 9.13	. .
	29	α Tauri	F.	.	22.5	25.3	26.9	33.2	35.3	37.6	43.8	45.5	48.0	27 35.34	+ 0.20	+47.79	+47.81	4 28 23.35	+ 0.02
	30	ι Aurigæ . . .	F.	3	24.2	27.4	29.2	36.5	39.0	41.4	48.6	50.5	53.4	47 39.91	+ 0.06	+47.84	+47.81	4 48 26.78	− 0.06
	31	β Tauri	F.	3	57.7	0.9	2.6	9.5	11.9	14.2	21.2	23.0	25.9	17 11.88	+ 0.10	+47.75	+47.82	5 17 59.80	+ 0.06
	32	ε Orionis . . .	F.	.	33.0	35.4	36.9	42.9	44.9	47.0	53.0	54.7	57.1	28 44.99	+ 0.32	+47.83	+47.82	5 29 33.13	0.00
	33	α Orionis . . .	F.	3	3.5	6.1	7.7	13.8	15.9	17.9	24.1	25.6	28.2	47 15.87	+ 0.27	+47.88	+47.82	5 48 3.96	− 0.06
	34	ο Virginis . . .	F.	.	32.5	35.0	36.8	43.0	45.0	47.0	53.3	54.9	57.5	57 45.00	+ 0.25	+47.91	+47.86	11 58 33.13	− 0.09
	35	β Corvi	F.	3	30.5	33.3	34.9	41.6	43.7	45.8	52.7	54.3	57.0	26 43.76	+ 0.46	+47.80	+47.87	12 27 32.09	+ 0.13
	36	12 Canum Venat. .	F.	3	51.5	54.7	56.7	4.5	7.2	9.8	17.6	19.9	23.0	49 7.21	0.00	+47.80	+47.87	12 49 55.08	+ 0.08
	37	θ Virginis . . .	F.	.	11.1	13.5	15.2	21.2	23.2	25.2	31.5	32.8	35.7	2 23.27	+ 0.34	+47.88	+47.87	13 3 11.48	− 0.04
	38	Polaris, S. P. . .	F.	.	. .	. .	9.0	44.0	21.0	57.0	33.0	. .	. .	9 20.48	+18.00	. .	+47.87	1 10 26.35	− 0.33
	39	α Virginis . . .	F.	3	18.5	21.0	22.5	28.7	30.8	33.0	39.1	40.8	43.4	17 30.87	+ 0.37	+47.90	+47.87	13 18 19.11	− 0.02
	40	α Bootis	F.	3	. .	. .	50.0	52.2	54.4	56.6	58.9	. .	. .	8 54.41	+ 0.17	+47.97	+47.88	14 9 42.49	+ 0.08
	41	Pomona . . .	F.	.	33.1	36.0	37.7	44.1	46.0	48.2	54.2	56.3	58.4	22 46.00	+ 0.40	. .	+47.88	14 23 34.28	. .
	42	ε Bootis	F.	3	15.7	18.5	20.0	27.3	29.5	31.8	38.6	40.3	43.3	38 29.44	+ 0.11	+47.87	+47.88	14 39 17.43	0.00
	43	β Libræ, (R.) . .	F.	.	. .	. .	7.0	9.0	11.1	13.0	15.2	. .	. .	9 11.05	+ 0.27	. .	+47.88	15 9 59.20	+ 0.03
	44	Anonymous . .	F.	.	4.1	6.7	8.2	. .	. .	. .	24.1	26.0	28.4	23 16.25	+ 0.33	. .	+47.88	15 24 4.46	. .
	45	Melpomene . .	F.	.	10.0	12.3	14.1	. .	. .	. .	31.0	32.6	35.2	23 22.53	+ 0.33	. .	+47.88	15 24 10.74	. .
	46	2320 Groombridge . .	F.	3	. .	. .	3.7	9.0	14.5	19.9	25.3	. .	. .	5 14.46	− 0.74	. .	+47.89	16 6 1.61	+ 0.36
	47	κ Ophiuchi . . .	F.	3	28.8	31.5	33.0	39.3	41.2	43.5	49.6	51.0	53.3	50 41.24	+ 0.25	+47.96	+47.89	16 51 29.38	− 0.04
	48	Saturn I, (S. ring)	F.	1	40.7	43.7	45.2	. .	. .	. .	2.6	4.4	7.0	58 53.93	+ 0.44	. .	+47.90	16 59 42.27	. .
	49	Saturn II, (N. ring)	F.	3	. .	. .	51.1	53.0	55.3	57.4	59.7	. .	. .	58 55.29	+ 0.44	. .	+47.90	16 59 43.63	. .

1.15. Bisections at sets B and D.
3.4. Bisections at wires II–VI.
17.18.41.44.45. Wire A used.
18. Obesrved for Beatrix.
28. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	213 14	9.7	12.2	13.4	29.4	27	173	196	. .	246	278	50.2	213 18 18.0	. .	+ 38.2	17 47 25.0	+ 1.0
2	59 54	6.2	7.0	9.7	28.7	23	168	261	. .	470	511	50.2	59 57 15.5	563	+ 1 40.2	111 5 16.9	− 2.8
3	59 36	9.4	10.2	12.4	1.3	25	144	205	262	294	348	50.2	59 39 47.6	. .	+ 1 39.1	110 47 47.9	
4	56 30	10 7.7	7.2	10.3	0.3	28	184	049	988	917	880	55.1	56 34 48.0	546	+ 1 27.6	107 42 36.8	
5	9 8	5.2	3.1	6.3	25.0	26	. .	. .	950	. .	. .	55.1	9 12 12.6	. .	+ 9.4	60 18 43.2	0.0
6	336 48	7.1	7.1	6.7	25.6	27	635	704	. .	806	792	55.1	336 52 27.3	. .	− 24.8	27 58 23.7	− 0.5
7	44 58	4.7	4.5	7.5	26.1	23	769	819	. .	922	952	55.1	45 1 26.2	550	+ 58.0	96 7 45.4	+ 0.7
8	39 36	6.8	6.8	9.1	28.0	27	463	491	. .	604	647	55.1	39 40 24.6	532	+ 47.9	90 47 33.7	+ 0.7
9	28 40	6.5	6.0	9.1	26.6	27	142	200	. .	310	356	55.1	28 44 19.5	. .	+ 31.7	79 51 12.4	+ 0.7
10																	
11																	
12	191 0	9 28.0	28.2	0.8	16.3	27	. .	561	628	720	. .	55.1	191 4 16.3	565	+ 11.4	40 1 53.5	+ 1.4
13	18 58	1.9	0.2	3.7	21.4	23	945	991	. .	096	090	55.1	19 1 25.1	. .	+ 20.1	70 8 6.4	+ 1.5
14	54 18	9 29.7	28.0	2.5	20.7	26	. .	. .	777	. .	. .	55.1	54 22 5.3	579	+ 1 21.3	105 29 47.8	+ 1.3
15	215 44	2.6	3.1	5.0	21.1	22	. .	832	890	912	. .	55.1	215 47 8.3	. .	+ 42.1	35 18 30.8	− 0.4
16	1 0	3.1	0.8	4.7	22.0	23	700	769	. .	900	860	55.1	1 3 22.7	. .	+ 1.1	52 9 45.0	+ 0.3
17	49 18	6.6	5.3	9.2	28.2	24	. .	096	. .	331	. .	55.1	49 18 59.1	. .	+ 1 7.9	100 26 28.2	− 5.4
18	62 12	5.2	4.3	9.1	27.6	23	. .	. .	. .	719	. .	55.1	62 13 51.3	580	+ 1 50.6	113 22 3.1	
19	61 2	4.5	3.2	7.9	26.4	28	645	639	. .	767	776	55.1	61 6 39.9	. .	+ 1 45.5	112 14 46.6	+ 0.4
20	29 14	9 26.5	25.3	29.3	17.5	27	598	644	. .	735	800	55.1	29 18 16.3	. .	+ 32.7	80 25 10.2	− 0.6
21	59 48	10 8.3	6.8	10.8	29.4	21	983	. .	. .	. .	191	55.1	59 51 1.9	566	+ 1 40.0	110 59 3.1	− 0.8
22	59 48	10 8.3	6.8	10.8	29.4	23	. .	225	. .	360	. .	55.1	59 51 20.4	. .	+ 1 40.0	110 59 21.6	− 0.8
23	53 44	4.0	5.5	8.7	27.9	25	. .	296	145	054	. .	55.1	53 47 46.9	549	+ 1 19.1	104 55 27.2	
24	39 46	3.2	3.1	6.7	25.7	26	696	704	. .	796	788	55.1	39 50 9.3	547	+ 48.4	90 57 18.9	− 0.7
25	57 30	9 29.5	0.0	3.5	22.7	28	. .	. .	. .	566	586	55.1	57 34 33.0	480	+ 1 29.7	108 42 23.9	− 0.4
26	310 14	5.0	6.9	7.2	25.8	27	188	184	210	197	161	55.1	310 18 17.8	463	− 1 7.0	1 23 32.0	+ 1.3
27	23 0	3.2	2.8	4.9	23.0	18	780	826	. .	. .	. .	55.1	23 2 7.4	. .	+ 19.0	74 8 47.6	− 3.4
28	22 26	9 29.6	0.1	2.3	19.5	18	. .	. .	. .	177	242	55.1	22 30 23.2	408	+ 23.3	73 37 7.7	− 3.4
29	22 34	2.5	4.2	7.4	24.6	29	193	. .	. .	. .	433	55.1	22 38 48.9	398	+ 23.4	73 43 33.5	+ 1.8
30	5 52	27.8	27.0	1.1	19.0	27	. .	709	. .	818	. .	55.1	5 36 19.1	404	+ 5.8	57 2 46.1	+ 0.8
31	10 20	2.4	1.7	5.7	24.1	26	. .	073	. .	121	. .	55.1	10 23 58.3	397	+ 10.3	61 30 29.8	+ 1.2
32	40 6	29.3	0.4	3.1	22.4	27	738	745	. .	794	780	55.1	40 10 21.5	400	+ 47.3	91 17 30.0	+ 0.8
33	31 26	1.1	1.5	4.2	22.9	28	010	068	. .	212	220	55.1	31 30 28.2	396	+ 34.3	82 37 23.7	+ 1.3
34	29 22	9 26.5	27.8	1.0	18.7	24	722	792	. .	928	922	54.2	29 25 33.2	507	+ 32.4	80 32 26.8	− 0.1
35	61 28	6.1	6.1	9.7	29.7	27	410	438	. .	560	638	54.2	61 32 23.1	516	+ 1 45.8	112 40 30.1	− 0.5
36																	
37	43 40	10.0	9.5	13.5	2.1	22	470	490	. .	556	568	54.2	43 43 10.4	. .	+ 55.0	94 50 26.6	+ 0.3
38	307 28	9 27.7	28.8	29.2	18.1	24	248	248	243	153	280	54.2	307 31 23.4	. .	− 1 15.0	358 36 29.6	− 0.4
39	49 18	9.0	8.1	12.0	2.0	22	. .	790	. .	916	. .	54.2	49 21 14.2	526	+ 1 7.1	100 28 42.5	+ 0.3
40	18 58	9 28.2	26.6	29.7	18.4	24	. .	. .	. .	464	514	54.2	19 1 26.8	549	+ 20.0	70 8 8.0	+ 3.1
41	53 4	3.5	2.8	7.8	26.7	32	. .	134	. .	114	. .	54.2	53 6 57.1	. .	+ 1 17.3	104 14 35.6	− 5.1
42	11 12	5.2	2.8	6.4	23.3	25	. .	438	. .	558	. .	54.2	11 15 49.2	567	+ 11.6	62 22 22.0	+ 0.9
43																	
44	41 12	7.5	7.3	11.2	29.1	22	090	. .	. .	. .	062	54.2	41 12 27.0	. .	+ 51.0	92 19 39.2	
45	41 12	7.5	7.3	11.2	29.1	23	. .	062	. .	062	. .	54.2	41 12 42.1	. .	+ 51.0	92 19 54.3	− 3.4
46	330 40	10.6	9.6	10.5	0.3	29	210	214	. .	235	280	54.2	330 44 53.4	569	− 32.6	21 50 42.0	− 0.6
47	29 14	9.6	9.4	13.0	1.0	26	. .	928	. .	020	. .	54.2	29 18 18.0	575	+ 32.8	80 25 12.0	+ 1.3
48	59 48	8.9	7.9	11.1	0.0	21	932	. .	. .	. .	018	54.2	59 51 0.0	578	+ 1 40.2	110 59 1.4	− 0.8
49	59 48	8.9	7.9	11.1	0.0	20	. .	454	. .	528	. .	54.2	59 50 37.5	. .	+ 1 40.2	110 58 38.9	− 0.8

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
3	− 48 57.1	+ 15 31.8
4	− 45 33.6	+ 14 57.1
23	− 43 43.9	+ 14 50.9

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
May 5	1	Sun I, S. . . .	Ha.	.	46.7	49.4	51.0	57.3	59.4	1.5	8.2	9.6	12.4	48 59.50	+ 0.09	. .	+48.16	2 49 47.75	. .
	2	Sun II, N. . . .	Ha.	.	59.2	2.0	3.5	9.9	12.0	14.3	20.4	22.2	25.0	51 12.06	+ 0.09	. .	+48.16	2 52 0.31	. .
	3	δ Leonis	Ha.	.	7.8	10.4	12.0	18.5	20 8	23.0	29.5	31.3	33.9	6 20.80	+ 0.06	+48.19	+48.23	11 7 9.09	+ 0.02
	4	δ Crateris . . .	Ha.	.	47.2	49.8	51.6	58.0	0.0	2.2	8.4	9.9	12.6	11 59.97	+ 0.26	+48.32	+48.23	11 12 48.46	− 0.09
	5	τ Leonis	Ha.	.	12.3	14.9	16.4	22.4	24.3	26.4	32.6	34.2	36.9	20 24.49	+ 0.16	+48.25	+48.23	11 21 12.88	− 0.01
	6	υ Leonis	Ha.	.	14.8	17.4	19.0	25.0	27.0	29.0	35.0	36.8	39.2	29 27.02	+ 0.15	+48.26	+48.23	11 30 15.43	− 0.04
	7	β Leonis	Ha.	.	22.4	25.1	26.7	33.0	35.0	37.2	43.5	45.2	47.8	41 35.10	+ 0.09	+48.30	+48.23	11 42 23.42	− 0.06
	8	Polaris, S. P. . .	Ha.	.	. .	. .	13.0	47.0	22.0	59.0	37.0	. .	. .	9 23.92	+15.85	. .	+48.25	1 10 28.02	+ 0.98
	9	ε Bootis	Ha.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	10	α^2 Libræ	Ha.	.	. .	. .	47.0	49.2	51.4	53.4	55.5	. .	. .	42 51.29	+ 0.26	+48.16	+48.26	14 43 39.81	+ 0.08
	11	β Bootis	Ha.	.	58.0	1.2	3.3	11.4	14.2	16.5	24.9	26.9	30.4	56 14.09	− 0.11	. .	+48.26	14 57. 2.24	− 0.06
	12	β Libræ	Ha.	.	58.5	0.9	2.4	8.7	10.8	12.9	19.0	20.5	23.0	9 10.74	+ 0.23	+48.20	+48.26	15 9 59.23	+ 0.05
	13	α Serpentis, (R.) .	Ha.	.	. .	. .	58.0	0.2	2.2	4.3	6.2	. .	. .	37 2.18	+ 0.14	. .	+48.27	15 37 50.59	+ 0.04
8	14	Sun I, S. . . .	F.	3	22.9	25.7	27.3	33.3	35.7	37.9	44.2	45.9	48.4	0 35.70	+ 0.08	. .	+48.56	3 0 24.34	. .
	15	Sun II, N. . . .	F.	.	36.6	39.1	40.6	46.8	49.1	51.3	57.4	59.4	2.0	2 49.14	+ 0.08	. .	+48.56	3 2 37.78	. .
	16	ε Orionis . . .	F.	3	. .	. .	40.2	42.3	44.3	46.4	48.7	. .	. .	28 44.38	+ 0.21	+48.53	+48.57	5 29 33.16	+ 0.05
	17	μ Geminorum . .	F.	.	59.4	2.1	4.0	10.6	12.9	14.9	21.5	23.3	26.0	14 12.74	+ 0.04	+48.56	+48.58	6 15 1.36	+ 0.02
	18	γ Geminorum . .	F.	.	6.6	9.0	10.8	17.1	19.1	21.4	27.8	29.3	31.9	29 19.22	+ 0.08	+48.64	+48.58	6 30 7.88	− 0.06
9	19	Polaris	N.	4	. .	. .	. .	30.0	53.0	18.5	42.0	. .	. .	9 53.72	−18.22	. .	+53.48	1 10 28.98	− 0.37
10	20	Sun I, N., (E. & E.)	N.	.	40.7	53.3	. .	. .	. .	. .	32.0	. .	. .	9 19.20	+ 0.04	. .	+53.48	3 10 12.72	. .
	21	Sun II, S., (E. & E.)	N.	3	19.8	32.5	45.5	. .	58.4	. .	11.1	. .	. .	11 32.60	+ 0.04	. .	+53.48	3 12 26.12	. .
	22	α Tauri	N.	3	. .	. .	. .	. .	. .	. .	43.0	55.8	8.6	27 30.17	+ 0.06	+53.10	+53.48	4 28 23.71	+ 0 38
	23	Polaris, S. P. . .	N.	3	40.0	55.5	53.0	. .	. .	. .	. .	. .	. .	9 16.83	+18.77	. .	+53.48	1 10 29.08	− 0.59
	24	η Ursæ Majoris, (R)	N.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	25	α Draconis, (R.) . .	N.	3	. .	2.0	. .	. .	0.0	. .	29.0	. .	27.0	0.00	− 0.72	. .	+53.48	14 0 52.76	− 0.11
	26	α Bootis, (R.) . .	N.	3	9.9	22.9	36.0	. .	49.0	. .	2.0	15.0	28.0	8 48.95	+ 0.03	. .	+53.48	14 10 42.40	− 0.12
	27	ε Bootis	N.	3	. .	. .	10.2	. .	23.7	. .	37.9	51.7	5.5	23.99	− 0.03	+53.49	+53.48	14 39 17.44	− 0.02
	28	β Libræ	N.	3	28.1	40.4	53.0	. .	5.2	. .	17.8	30.2	42.7	9 5.34	+ 0.22	+53.66	+53.48	15 9 59.04	− 0.17
	29	α Cor. Borealis, (R.)	N.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	30	α Scorpii	N.	3	49.2	3.1	16.9	. .	30.3	. .	44.1	57.7	11.3	20 30.37	+ 0.12	+53.47	+53.48	16 21 24.17	+ 0.03
	31	ζ Ophiuchi . . .	N.	3	. .	39.4	52.0	. .	4.6	. .	16.9	29.6	41.9	29 4.50	+ 0.22	+53.67	+53.48	16 29 58.20	− 0.24
	32	Polaris	F.	.	. .	. .	. .	30.0	53.0	16.0	40.0	. .	. .	9 52.60	. .	. .	. .	. . . .	. .
	33	α Arietis	F.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
14	34	Polaris	F.	4	. .	. .	9.0	33.0	56.5	20.5	44.0	. .	. .	10 56.30	−24.79	. .	+ 0.15	1 10 31.66	− 0.84
	35	β Arietis	F.	.	10.2	13.1	19.0	21.0	23.2	25.4	27.7	33.6	36.3	47 23.28	+ 0.23	+ 0.14	+ 0.15	1 47 23.66	+ 0.02
	36	α Arietis	F.	3	33.0	36.0	37.5	44.2	46.4	48.6	55.1	56.9	59.8	59 46.39	+ 0.21	+ 0.17	+ 0.14	1 59 46.74	− 0.02
15	37	Sun I, N. . . .	F.	3	37.2	40.0	41.7	48.2	50.3	52.7	59.0	0.8	3.0	28 50.32	+ 0.25	. .	+ 0.13	3 28 50.70	. .
	38	Sun II, S. . . .	F.	.	51.9	54.5	56.0	2.4	4.8	7.0	13.3	15.0	17.7	31 4.73	+ 0.25	. .	+ 0.13	3 31 5.11	. .
	39	α Tauri	F.	3	10.3	12.8	14.5	20.9	22.9	25.0	31.4	33.0	35.7	28 22.94	+ 0.28	+ 0.13	+ 0.12	4 28 23.34	− 0.01
	40	α Canum Venat. .	F.	3	39.1	42.5	44.2	52.4	54.7	57.4	5.2	7.3	10.5	49 54.81	− 0.02	+ 0.12	+ 0.06	12 49 54.85	− 0.05
	41	θ Virginis . . .	F.	.	58.5	1.2	2.7	9.0	11.0	13.0	19.1	20.6	23.2	3 10.92	+ 0.48	+ 0.06	+ 0.05	13 3 11.45	− 0.04
	42	Polaris, S. P. . .	F.	.	. .	. .	54 0	29.0	6.0	43.0	19.0	. .	. .	10 6.52	+25.87	. .	+ 0.05	1 10 32.44	− 0.33
	43	α Virginis . . .	F.	3	. .	. .	14.2	16.4	18.4	20.6	22.7	. .	. .	18 18.46	+ 0.53	+ 0.13	+ 0.05	13 18 19.04	− 0.07
	44	α Draconis . . .	F.	3	24.6	30.6	34.0	48.7	53.6	58.4	12.9	16.4	22.8	0 53.56	− 0.83	. .	+ 0.05	14 0 52.78	− 0.02
	45	Egeria	F.	.	29.2	31.5	33.2	39.6	41.7	43.4	49.8	51.7	54.5	34 41.62	+ 0.59	. .	+ 0.04	14 34 42.25	. .
	46	α^2 Libræ	F.	3	26.6	29.3	30.8	37.2	39.2	41.3	47.8	49.3	51.9	43 39.27	+ 5.58	− 0.08	+ 0.04	14 43 39.89	+ 0.10
	47	β Ursæ Minoris . .	F.	.	. .	. .	. .	. .	. .	. .	43.0	48.9	58.6	51 12.23	− 1.75	. .	+ 0.04	14 51 10.52	− 0.08
	48	β Bootis	F.	3	46.2	49.5	51.6	59.7	2.4	5.2	13.2	15.1	18.3	57 2.36	− 0.05	. .	+ 0.04	14 57 2.35	+ 0.01

20.31. Bisections at wires I–VII.
25. Bisections at sets B and D.
45. Wire A used.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	22 42	29.6	0.2	2.8	21.3	22	415	538	. .	. .	. .	54.7	22 45 0.5	. .	+ 23.7	73 51 45.4	− 3.4
2	22 10	0.2	0.3	3.1	21.0	23	. .	. .	. .	505	710	54.7	22 13 17.0	428	+ 23.1	73 20 1.3	− 3.4
3	17 36	4.5	4.0	7.2	23.6	21	. .	775	. .	890	. .	54.7	17 38 54.0	508	+ 18.3	68 45 33.5	+ 1.0
4	52 52	7.8	8.9	11.5	29.5	28	. .	923	. .	957	. .	54.7	52 56 47.1	. .	+ 1 16.0	104 4 24.3	− 0.5
5	35 16	4.4	4.5	8.1	25.9	19	. .	950	. .	985	. .	54.7	35 18 26.4	. .	+ 40.7	86 25 28.3	− 0.1
6	38 56	4.4	4.2	7.1	24.3	22	. .	418	. .	458	. .	54.7	38 59 3.4	515	+ 46.6	90 6 11.2	− 0.7
7	23 32	9.1	9.6	12.5	0.0	21	. .	865	. .	980	. .	54.7	23 35 0.9	. .	+ 25.1	74 41 47.2	0.0
8	307 28	1.7	1.8	2.5	20.6	23	. .	950	960	990	. .	54.7	307 31 23.3	542	− 1 15.3	358 36 29.2	− 0.3
9	11 12	7.0	5.0	9.0	26.1	25	. .	. .	. .	265	282	54.7	11 15 47.9	560	+ 11.6	62 22 20.7	− 0.2
10	54 18	2.6	2.6	5.5	23.5	26	. .	. .	. .	530	545	54.7	54 22 3.6	. .	+ 1 21.0	105 29 45.8	− 0.8
11	357 56	5.0	4.5	7.1	24.4	22	. .	750	. .	850	. .	54.7	357 59 9.6	. .	− 2.0	49 5 32.8	− 1.7
12	47 44	3.5	3.4	6.9	25.0	20	. .	065	. .	180	. .	54.7	47 46 27.6	565	+ 1 4.1	98 53 52.9	− 0.5
13	147 54	0.6	4.5	6.3	21.5	23	385	365	. .	500	475	54.7	147 57 16.7	570	− 36.5	83 9 41.0	+ 3.0
14	21 52	10 4.9	4.0	7.1	26.1	23	432	458	. .	. .	. .	54.8	21 55 20.0	486	+ 23.0	73 2 4.2	− 3.2
15	21 20	8.0	7.1	10.6	0.4	24	. .	. .	. .	310	346	54.8	21 23 36.0	. .	+ 22.4	72 30 19.6	− 3.2
16	40 6	7.2	7.7	9.2	29.9	27	. .	. .	. .	224	224	54.8	40 10 19.3	470	+ 48.1	91 17 28.6	− 0.2
17	16 16	7.1	6.9	8.1	28.4	21	. .	122	. .	292	. .	54.8	16 18 47.4	452	+ 16.6	67 25 25.2	− 1.0
18	22 20	8.9	8.5	10.7	0.2	21	. .	. .	. .	485	488	54.8	22 22 52.8	452	+ 23.3	73 29 37.3	+ 0.2
19																	
20	20 48	5.8	6.0	9.7	28.5	.	872	949	. .	. .	. .	52.6	20 51 57.5	330	+ 21.0	71 58 39.7	− 3.1
21	21 20	2.8	2.0	5.6	25.8	24	. .	. .	. .	965	920	52.6	21 23 38.2	. .	+ 21.6	72 30 20.0	− 3.1
22																	
23																	
24	191 0	10 1.9	2.1	4.0	19.1	27	. .	. .	630	775	815	52.5	191 4 18.0	461	+ 11.1	40 1 52.1	+ 1.8
25	206 2	9.5	9.6	10.3	26.6	26	. .	545	581	631	. .	52.5	206 6 8.5	. .	+ 27.9	24 59 44.8	− 0.9
26	160 54	4.2	6.3	7.4	22.4	28	486	. .	. .	. .	668	52.5	160 58 34.8	468	− 19.6	70 8 6.0	+ 2.1
27	11 12	7.3	5.8	8.9	25.5	25	. .	. .	368	. .	. .	52.5	11 15 47.6	. .	+ 11.4	62 22 20.2	+ 0.4
28	47 42	6.1	6.1	8.9	26.7	27	961	. .	. .	. .	145	52.5	47 46 28.8	481	+ 1 2.9	98 53 52.9	− 0.4
29	168 12	8.3	11.1	11.3	26.1	25	. .	. .	. .	860	908	52.5	168 15 57.0	. .	− 11.9	62 50 36.1	+ 2.7
30	64 56	6.0	6.3	8.7	26.9	25	. .	. .	610	. .	. .	52.5	64 59 51.6	498	+ 2 2.3	116 8 15.1	+ 0.5
31	49 6	6.8	6.6	9.2	26.4	28	. .	. .	065	. .	. .	52.5	49 10 29.4	. .	+ 1 6.3	100 17 56.9	+ 0.5
32	310 14	9.5	10.0	9.3	0.7	27	. .	. .	166	192	196	52.5	310 18 18.7	423	− 1 6.4	1 23 33.5	+ 0.9
33	16 0	8.8	9.5	9.4	0.2	21	886	. .	. .	. .	. .	52.5	16 2 58.5	314	+ 16.2	67 9 35.9	− 3.2
34	310 14	8.1	10.1	9.3	29.6	27	251	268	306	313	320	51.2	310 18 18.5	369	− 1 5.5	1 23 34.2	+ 0.8
35	18 40	8.3	8.8	9.0	29.1	23	995	098	. .	120	206	51.2	18 43 29.3	360	+ 18.8	69 50 9.3	− 0.4
36	16 0	14.2	13.9	14.6	4.1	21	. .	904	. .	004	. .	51.2	16 3 1.8	344	+ 15.9	67 9 38.9	− 0.2
37	19 34	15.8	18.5	18.0	8.0	25	514	570	. .	. .	. .	51.2	19 38 0.6	. .	+ 19.7	70 44 41.5	− 2.9
38	20 6	8.0	9.2	9.0	0.3	24	. .	. .	. .	941	903	51.2	20 9 41.6	338	+ 20.3	71 16 23.1	− 2.9
39	22 36	11.2	11.8	14.2	2.8	21	081	148	. .	291	240	51.2	22 38 48.4	313	+ 22.9	73 45 32.5	+ 1.1
40	359 48	11.7	10.8	12.5	0.4	25	862	910	. .	071	046	51.2	359 52 0.0	411	− 0.1	50 58 21.7	+ 1.8
41	43 40	14.0	14.7	17.2	4.8	22	392	456	. .	550	614	51.2	43 43 11.0	. .	+ 53.8	94 50 26.0	− 0.5
42	307 28	7.1	8.5	7.6	26.5	23	580	542	530	534	552	51.2	307 31 19.0	416	− 1 13.2	358 36 27.0	+ 0.5
43	49 16	10.5	11.0	12.6	1.6	23	. .	050	. .	178	. .	51.2	49 19 16.5	. .	+ 1 5.4	100 26 43.1	+ 0.9
44	333 50	10.5	10.8	10.0	29.9	25	. .	396	. .	400	. .	51.2	333 53 50.5	418	− 27.6	24 59 44.1	− 0.2
45	55 50	5.4	5.6	7.5	26.0	21	. .	578	. .	620	. .	51.3	55 50 59.9	418	+ 1 22.8	106 58 43.9	− 4.4
46	54 18	9.9	10.0	11.7	0.1	26	. .	475	. .	615	. .	51.2	54 22 7.0	. .	+ 1 18.5	105 29 46.7	− 0.1
47	324 8	13.5	12.8	12.9	1.7	29	. .	. .	. .	012	852	51.2	324 12 46.8	428	− 40.7	15 18 27.3	− 0.3
48	357 56	6.2	6.7	7.1	25.5	22	. .	. .	. .	832	874	51.2	357 59 7.2	. .	− 2.0	49 5 26.4	− 1.2

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
3	29.930	54.2	68.0
26	29.999	60.2	71.3

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
May 15	1	β Libræ	F.	.	46.2	49.0	50.4	56.7	58.8	1.0	7.0	8.6	11.2	9 58.77	+ 0.52	− 0.03	+ 0.04	15 9 59.31	+ 0.04
	2	Melpomene . .	F.	.	22.0	25.1	26.9	33.0	35.4	37.0	42.9	44.2	46.8	13 34.81	+ 0.45	. .	+ 0.04	15 13 35.30	. .
	3	Melete	F.	2	. .	. .	. .	. .	. .	. .	. .	18.0	30.3	17 53.18	+ 0.51	. .	+ 0.04	15 17 53.73	. .
	4	α Serpentis . . .	F.	2	37.9	40.5	46.1	48.2	50.1	52.3	54.2	59.9	2.5	37 50.19	+ 0.37	0.00	+ 0.03	15 37 50.59	+ 0.03
	5	ε Coronæ Borealis .	F.	3	57.5	0.4	2.1	9.0	11.2	13.6	20.5	22.1	25.1	52 11.28	+ 0.15	. .	+ 0.03	15 52 11.45	− 0.11
	6	2320 Groombridge . .	F.	3	29.4	36.5	40.2	56.8	2.4	8.1	24.5	28.6	35.6	6 2.46	− 1.06	. .	+ 0.03	16 6 1.45	+ 0.05
	7	κ Ophiuchi . . .	F.	. .	17.0	19.6	21.1	27.1	29.2	31.2	37.3	39.1	41.6	51 29.24	+ 0.34	+ 0.05	+ 0.02	16 51 29.60	0.00
	8	Saturn I, S. . .	F.	.	31.9	35.0	36.5	. .	. .	. .	53.7	55.4	58.4	56 45.15	+ 0.62	. .	+ 0.02	16 56 45.79	. .
	9	Saturn II, N. . .	F.	3	. .	. .	44.1	46.1	48.2	50.5	52.5	. .	. .	56 48.28	+ 0.62	. .	+ 0.02	16 56 48.92	. .
16	10	Polaris	N.	3	. .	25.0	11.0	. .	59.5	. .	35.0	38.5	24.0	10 59.80	−24.64	. .	− 0.21	1 10 33.95	+ 0.39
	11	α Arietis	N.	.	33.5	36.2	38.2	44.5	46.8	49.0	55.6	57.3	0.0	59 46.79	+ 0.21	− 0.19	− 0.22	1 59 46.78	− 0.02
17	12	Sun I, S. . . .	N.	2	33.0	35.8	37.5	43.9	46.2	48.3	54.8	56.5	59.2	36 46.13	+ 0.24	. .	− 0.22	3 36 46.15	. .
	13	Sun II, N. . . .	N.	2	47.7	50.5	52.1	58.5	0.6	2.8	9.4	11.0	13.8	39 0.71	+ 0.24	. .	− 0.22	3 39 0.73	. .
	14	Moon I, N. . .	N.	3.2	10.7	13.5	15.0	21.6	23.8	26.0	32.5	34.1	36.9	7 23.79	+ 0.28	. .	− 0.25	9 7 23.82	+69.84
	15	α Hydræ	N.	3	56.5	59.0	0.5	6.7	8.7	10.9	17.0	18.6	21.2	21 8.79	+ 0.51	− 0.18	− 0.25	9 21 9.05	− 0.07
	16	θ Virginis . . .	N.	3	. .	. .	7.0	9.1	11.2	13.2	15.3	. .	. .	3 11.15	+ 0.48	− 0.18	− 0.27	13 3 11.36	− 0.12
	17	Polaris, S. P. . .	N.	3	. .	. .	58.0	. .	9.0	45.5	22.0	. .	. .	10 9.85	+25.71	. .	− 0.27	1 10 35.32	+ 1.51
	18	η Bootis	N.	.	15.2	18.0	19.5	26.0	28.2	30.2	36.7	38.4	41.0	48 28.13	+ 0.25	− 0.21	− 0.27	13 48 28.11	− 0.09
	19	α Draconis . . .	N.	4	24.8	30.8	34.5	48.9	53.7	58.5	13.0	16.8	22.7	0 53.74	− 0.83	. .	− 0.28	14 0 52.63	− 0.14
	20	α Bootis	N.	4	29.7	32.3	33.9	40.4	42.6	44.8	51.2	52.9	55.6	9 42.60	+ 0.24	− 0.26	− 0.28	14 9 42.56	− 0.01
	21	β Ursæ Minoris . .	N.	2	. .	. .	57.0	4.7	12.6	20.2	28.0	. .	. .	51 12.47	− 1.77	. .	− 0.28	14 51 10.42	− 0.15
	22	48 Cephei, S. P. . .	N.	1	36.4	24.6	18.2	50.4	41.2	32.0	4.4	57.3	46.0	3 41.17	+ 3.23	. .	− 0.28	15 3 44.12	+ 0.08
	23	μ Bootis	N.	2	19.0	22.3	24.2	31.9	34.5	37.2	44.9	46.8	50.0	19 34.53	0.00	− 0.31	− 0.28	15 19 34.25	+ 0.03
	24	Anonymous . .	N.	1	59.2	2.3	. .	. .	15.2	17.1	21.5	23.0	25.9	26 12.66	+ 0.66	. .	− 0.28	15 26 13.04	. .
	25	α Serpentis . . .	N.	3	38.3	40.8	42.3	48.4	50.6	52.6	58.7	0.3	2.9	37 50.54	+ 0.37	− 0.33	− 0.28	15 37 50.63	+ 0.05
	26	ζ Ursæ Minoris .	N.	3	. .	. .	35.4	45.2	55.2	5.4	15.0	. .	. .	48 55.20	− 2.45	. .	− 0.28	15 48 52.47	− 0.35
	27	β Scorpii	N.	2	38.0	40.7	42.3	48.8	50.9	53.1	59.6	1.2	3.8	57 50.93	+ 0.62	− 0.37	− 0.29	15 57 51.26	+ 0.13
	28	τ Herculis . . .	N.	2	33.0	36.5	38.9	47.8	50.9	53.7	2.6	4.8	8.6	15 50.76	− 0.18	. .	− 0.29	16 15 50.29	+ 0.26
	29	A Draconis . . .	N.	3	. .	. .	8.4	13.9	19.7	25.4	31.0	. .	. .	28 19.66	− 1.10	. .	− 0.28	16 28 18.28	− 0.06
	30	α Camelopard., S. P.	N.	2	28.9	22.6	19.1	3.8	58.7	53.5	38.3	34.4	28.4	40 58.63	+ 1.95	. .	− 0.28	4 41 0.30	+ 0.10
	31	κ Ophiuchi . . .	N.	1	17.5	19.9	21.4	27.7	29.6	31.8	38.0	39.4	42.0	51 29.70	+ 0.34	− 0.40	− 0.28	16 51 29.76	+ 0.13
	32	Saturn I, N. . .	N.	1	. .	. .	. .	. .	. .	. .	20.6	22.6	25.1	56 12.05	+ 0.63	. .	− 0.28	16 56 12.40	. .
	33	Saturn II, S. . .	N.	.	. .	. .	9.1	11.0	13.3	15.4	17.6	. .	. .	56 13.27	+ 0.63	. .	− 0.28	16 56 13.62	. .
18	34	Sun I	F.	3	32.0	34.9	36.2	42.9	44.8	47.1	53.4	55.1	57.9	40 44.92	+ 0.21	. .	− 0.51	3 40 44.62	. .
	35	Sun II	F.	.	46.8	49.4	51.0	57.5	59.6	1.9	8.6	10.1	12.7	42 59.73	+ 0.21	. .	− 0.51	3 42 59.43	. .
	36	Mercury, C. . .	F.	.	57.0	59.6	1.3	8.0	10.3	12.7	19.4	21.4	23.9	4 10.40	+ 0.16	. .	− 0.52	5 4 10.04	+ 0.07
	37	β Orionis . . .	F.	.	1.6	3.8	5.5	11.7	13.7	15.6	21.8	23.7	25.8	8 13.69	+ 0.45	− 0.58	− 0.52	5 8 13.62	+ 0.07
	38	α Orionis . . .	F.	2	51.8	54.4	55.7	2.0	4.0	6.2	12.3	13.9	16.4	48 4.08	+ 0.33	− 0.47	− 0.52	5 48 3.89	− 0.05
19	39	Polaris	N.	3	. .	. .	7.0	31.0	. .	18.0	43.0	. .	. .	10 54.45	−17.85	. .	− 0.86	1 10 35.74	+ 0.60
	40	α Arietis	N.	3	34.4	37.3	38.7	45.4	47.5	49.8	56.4	58.1	1.0	59 47.62	+ 0.12	− 0.87	− 0.86	1 59 46.88	+ 0.02
20	41	Sun I, N. . . .	N.	2	30.9	33.7	35.3	41.9	44.0	46.3	52.7	54.4	57.1	48 44.03	+ 0.12	. .	− 0.89	3 48 43.26	. .
	42	Sun II, S. . . .	N.	3	46.1	48.6	50.4	57.0	59.0	1.1	7.8	9.5	12.2	50 59.08	+ 0.12	. .	− 0.89	3 50 58.31	. .
	43	Mercury, C. . .	N.	3	35.4	38.3	40.0	46.6	49.0	51.3	58.3	59.9	2.6	17 49.04	+ 0.10	. .	− 0.88	5 17 48.26	+ 0.08
	44	Moon I, N. . .	N.	3.1	30.8	33.5	35.0	41.3	43.3	45.3	51.5	53.4	56.1	59.43.36	+ 0.25	. .	− 0.98	11 59 42.63	+67.85
	45	β Corvi	N.	2	19.2	22.0	23.8	30.2	32.5	34.7	41.2	43.0	45.8	27 32.49	+ 0.42	− 1.01	− 0.99	12 27 31.92	+ 0.08
	46	21 Cassiopeæ, S. P. .	N.	2	45.8	36.8	30.8	8.1	0.8	53.1	30.5	25.0	15.9	37 0.76	+ 2.06	. .	− 0.99	0 37 1.83	+ 0.38
	47	32[2] Camelopard., (R.).	N.	3	. .	. .	1.7	22.0	42.3	1.2	41.4	56.6	21.7	48 21.84	− 5.20	. .	− 0.99	12 48 15.65	− 0.40
	48	θ Virginis . . .	N.	.	59.8	2.4	3.9	10.0	12.1	14.1	20.3	21.8	24.3	3 12.08	+ 0.31	− 0.96	− 0.99	13 3 11.40	− 0.06

2.3.24. Wire A used.
14. Bisections at wires II–VI.
21.26. Bisections at sets B and D.
24. Observed for Beatrix.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	47 42	12.7	12.5	13.7	3.2	27	. .	790	. .	862	. .	51.2	47 46 30.2	. .	+ 1 2.2	98 53 53.6	+ 0.4
2	40 18	8.6	9.4	10.0	29.4	26	. .	. .	. .	941	. .	51.2	40 19 38.5	. .	+ 48.0	91 26 47.7	− 3.4
3	47 42	13.2	13.7	13.6	4.1	29	. .	. .	. .	710	. .	51.2	47 44 24.9	. .	+ 1 2.2	98 51 48.3	− 5.4
4	32 0	10.2	9.9	11.0	0.5	20	. .	. .	. .	898	912	51.2	32 2 41.1	446	+ 35.5	83 9 37.8	+ 1.0
5	11 34	16.7	16.0	17.5	5.4	25	. .	352	. .	258	. .	51.3	11 37 56.1	448	+ 11.7	62 44 29.0	+ 1.1
6	330 40	14.8	14.3	13.9	3.7	28	. .	920	. .	048	. .	51.3	330 44 49.8	. .	− 31.8	21 50 39.2	− 0.4
7	29 14	10.5	11.4	13.0	0.5	27	. .	. .	. .	080	186	51.3	29 18 17.3	. .	+ 31.8	80 25 10.3	+ 1.3
8	59 42	12.8	13.0	14.4	3.7	26	970	. .	. .	. .	985	51.3	59 46 17.5	445	+ 1 36.9	110 54 15.6	− 0.8
9	59 42	12.8	13.0	14.4	3.7	26	. .	288	. .	328	. .	51.3	59 46 7.4	. .	+ 1 36.9	100 54 5.5	− 0.8
10	310 14	9.2	10.0	8.8	28.4	27	348	414	375	384	. .	52.9	310 18 21.4	436	− 1 6.6	1 23 36.0	+ 2.3
11	16 0	9.7	9.4	9.3	28.6	22	190	209	. .	375	340	52.9	16 3 3.6	408	+ 16.2	67 9 41.0	+ 2.0
12	19 38	5.4	6.0	6.0	24.9	27	415	477	. .	. .	. .	52.9	19 42 19.5	404	+ 20.1	70 49 0.8	− 2.9
13	19 6	10.0	10.0	11.4	0.2	28	. .	. .	. .	660	665	52.9	19 10 41.8	. .	+ 19.5	70 17 22.5	− 2.9
14	22 6	10 21.8	22.5	22.5	11.6	27	050	170	330	444	589	52.9	22 10 33.3	416	+ 22.9	73 17 17.4	
15	46 54	4.0	4.7	6.6	24.9	28	875	920	. .	004	080	52.9	46 58 26.1	. .	+ 1 0.2	98 5 47.5	+ 3.6
16	43 40	4.6	5.4	8.5	25.4	22	. .	. .	. .	989	022	52.9	43 43 10.3	. .	+ 54.7	94 50 26.2	+ 0.3
17	307 28	2.6	4.1	4.8	21.7	.	720	. .	734	751	. .	52.9	307 31 19.4	490	− 1 14.4	358 36 26.2	0.0
18	19 46	3.5	3.7	5.2	22.7	26	. .	187	. .	267	. .	52.9	19 49 58.3	. .	+ 19.7	70 56 39.2	− 2.1
19	333 50	5.7	6.6	6.5	24.3	25	. .	446	. .	509	. .	52.9	333 53 49.5	488	− 27.4	22 59 43.3	+ 1.1
20	18 58	4.7	5.7	7.0	24.0	23	750	815	. .	922	920	52.9	19 1 23.7	. .	+ 19.7	70 8 4.6	+ 1.8
21	324 8	8.0	9.0	9.1	27.4	28	. .	972	. .	988	. .	52.9	324 12 45.1	490	− 41.2	15 18 25.1	− 1.8
22	296 6	1.7	4.1	2.7	21.5	27	905	826	. .	970	064	52.9	296 10 21.8	. .	− 1 56.0	349 14 47.0	+ 0.9
23	1 0	6.7	6.7	8.5	25.7	23	. .	. .	455	. .	. .	52.9	1 3 19.0	. .	+ 1.1	52 9 41.3	+ 0.1
24	62 2	4.1	5.7	8.5	26.3	24	. .	925	. .	130	. .	52.9	62 3 8.1	504	+ 1 47.7	113 11 17.0	
25	31 58	5.3	5.7	9.1	26.4	28	. .	815	. .	936	. .	52.9	32 2 41.7	. .	+ 36.0	83 9 38.9	+ 2.1
26	320 38	4.1	5.5	4.9	23.4	28	555	568	. .	583	565	52.9	320 42 35.0	. .	− 47.0	11 48 9.2	− 0.5
27	58 14	1.8	2.2	6.0	23.2	29	422	350	. .	472	535	52.9	58 18 46.9	. .	+ 1 32.9	109 26 41.0	+ 1.3
28	352 12	1.9	2.5	3.2	21.6	27	005	062	. .	190	143	52.9	352 16 10.7	519	− 7.8	43 22 24.1	+ 0.2
29	329 48	4.8	5.8	6.5	24.0	22	. .	. .	680	. .	. .	52.9	329 51 5.5	. .	− 33.5	20 56 53.2	− 0.1
30	285 0	0.3	3.6	2.2	20.0	26	560	456	. .	610	780	52.9	285 4 0.5	585	− 3 30.0	336 6 51.7	− 1.4
31	29 14	0.5	1.9	4.2	20.8	27	. .	452	. .	572	. .	52.9	29 18 13.5	. .	+ 32.4	80 25 7.1	− 1.7
32	59 42	1.2	1.8	4.5	22.4	23	382	. .	. .	. .	576	52.9	59 45 16.2	530	+ 1 38.7	110 53 16.1	− 0.8
33	59 42	1.2	1.8	4.5	22.4	24	. .	721	. .	770	. .	52.9	59 45 34.2	. .	+ 1 38.7	110 53 34.1	− 0.8
34																	
35																	
36	13 42	6.4	6.9	8.7	27.6	26	112	120	. .	190	230	52.0	13 46 0.2	. .	+ 13.8	64 52 35.2	− 2.0
37	47 10	2.4	3.5	6.4	24.2	26	. .	. .	. .	822	920	52.0	47 14 6.6	412	+ 1 0.7	98 21 28.5	− 1.6
38	31 26	5.0	6.0	5.4	27.1	27	830	872	. .	000	014	52.0	31 30 25.6	408	+ 34.4	82 37 21.2	− 0.3
39	310 14	10 2.1	2.6	1.4	0.7	27	760	785	815	795	760	50.7	310 18 20.4	506	− 1 7.6	1 23 34.0	− 0.4
40	16 0	0.8	0.9	1.5	0.5	22	454	546	. .	652	648	50.7	16 3 0.1	488	+ 16.5	67 9 37.8	− 1.1
41	18 28	28.4	27.6	28.8	26.3	27	025	105	. .	. .	. .	50.7	18 32 6.2	. .	+ 18.9	69 38 46.3	− 2.7
42	19 0	29.3	29.0	29.0	27.5	25	. .	. .	. .	532	506	50.7	19 3 42.1	435	+ 19.5	70 10 22.8	− 2.8
43	13 24	2.5	2.8	4.6	3.5	27	540	620	. .	656	680	50.7	13 28 19.7	418	+ 13.5	64 34 54.4	− 2.0
44	35 6	8 26.8	26.5	28.7	27.9	28	334	451	705	898	134	50.6	35 10 0.4	499	+ 40.4	86 17 2.0	
45	61 28	29.2	0.9	3.1	2.7	27	. .	850	. .	953	. .	50.6	61 32 21.6	519	+ 1 45.9	112 40 28.7	0.0
46	293 8	0.2	2.3	2.4	2.4	26	090	075	. .	165	282	50.6	293 11 54.6	. .	− 2 13.8	344 16 2.0	+ 2.0
47	225 10	1.3	4.4	4.3	2.5	22	. .	. .	885	940	915	50.6	225 13 7.1	530	+ 58.2	5 52 15.9	− 1.1
48	43 40	3.9	5.2	8.6	6.6	22	730	815	. .	900	913	50.6	43 43 8.9	. .	+ 55.3	94 50 25.4	− 0.4

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
10	29.819	61.6	66.0
14	29.855	64.5	67.0

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
14	− 21 59.7	+ 16 3.2
44	− 34 9.7	+ 16 17.1

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us Corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
May 20	1	Polaris, S. P.	N.	2	. .	. .	7.0	42.0	17.5	56.0	28.0	. .	. .	10 18.42	+17.56	. .	− 1.00	1 10 34.98	− 0.52
	2	Polaris, S. P., (R.)	N.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
	3	η Ursæ Majoris	N.	3	6.3	10.2	12.7	22.0	25.4	28.4	38.0	40.3	44.3	42 25.29	+ 0.17	. .	− 1.00	13 42 24.46	+ 0.39
	4	η Bootis	N.	2	16.0	18.7	20.4	26.8	28.7	31.1	37.6	39.3	41.9	48 28.94	+ 0.15	− 0.93	− 1.00	13 48 28.09	− 0.10
	5	α Draconis, (R.)	N.	1.3	25.8	31.8	35.4	49.9	54.3	59.0	13.9	17.7	23.4	0 54.58	− 0.83	. .	− 1.01	14 0 52.74	+ 0.03
	6	α Bootis	N.	3	30.4	33.4	34.7	41.3	43.5	45.7	52.2	53.8	56.3	9 43.48	+ 0.14	− 1.04	− 1.01	14 9 42.61	+ 0.04
	7	Melete	N.	2	. .	. .	40.8	43.0	45.3	47.1	49.3	. .	. .	13 45.09	+ 0.30	. .	− 1.02	15 13 44.37	. .
	8	α Coronæ Borealis	N.	3	57.4	0.3	1.9	8.8	11.2	13.5	20.2	22.0	24.8	29 11.12	+ 0.08	− 1.07	− 1.02	15 29 10.18	+ 0.05
	9	α Serpentis, (R.)	N.	4	39.2	41.7	43.3	. .	. .	. .	59.7	1.2	3.8	37 51.49	+ 0.13	. .	− 1.02	15 37 50.60	0.00
	10	ζ Ursæ Minoris	N.	3	55.8	8.9	16.0	45.8	56.0	6.1	36.0	43.4	55.8	48 55.98	− 1.85	. .	− 1.03	15 48 53.10	+ 0.29
	11	Saturn I, N.	N.	.	6.8	9.5	11.2	. .	. .	. .	28.5	30.2	32.9	55 19.85	+ 0.40	. .	− 1.04	16 55 19.19	. .
	12	Saturn II, S.	N.	2	. .	. .	16.8	19.0	21.1	23.3	25.5	. .	. .	55 21.14	+ 0.40	. .	− 1.04	16 55 20.50	. .
21	13	Sun I, N.	Ha.	.	31.3	34.0	35.4	42.2	44.4	46.5	53.0	54.7	57.4	52 44.32	+ 0.12	. .	. .	. .	. .
	14	Sun II, S.	Ha.	.	46.5	49.2	50.9	57.5	59.4	1.8	8.3	9.7	12.7	54 59.56	+ 0.12	. .	. .	. .	. .
22	15	β Corvi	F.	3	20.0	22.6	24.3	31.0	33.1	35.4	42.0	43.6	46.5	27 33.17	+ 0.37	− 1.66	− 1.67	12 27 31.87	+ 0.05
	16	α Canum Venat.	F.	.	40.7	44.0	45.8	53.8	56.4	59.0	6.9	8.9	12.0	49 56.39	− 0.03	− 1.52	− 1.68	12 49 54.68	− 0.15
	17	θ Virginis	F.	.	0.3	3.0	4.5	10.9	12.7	14.8	20.9	22.3	25.1	3 12.72	+ 0.28	− 1.58	− 1.68	13 3 11.32	− 0.13
	18	Polaris, S. P.	F.	.	. .	. .	12.0	48.0	23.5	57.5	33.0	. .	. .	10 23.12	+16.54	. .	− 1.68	1 10 37.98	+ 0.98
	19	α Virginis	F.	.	7.9	10.6	12.1	18.3	20.4	22.5	28.5	30.2	32.8	18 20.37	+ 0.32	− 1.60	− 1.68	13 18 19.01	− 0.07
	20	ζ Virginis	F.	3	51.6	54.0	55.5	2.0	4.0	6.0	11.8	13.7	16.2	28 3.87	+ 0.26	− 1.63	− 1.69	13 28 2.44	− 0.06
	21	η Ursæ Majoris, (R.)	F.	.	6.9	11.0	13.2	22.4	25.9	29.2	38.9	41.0	45.1	42 25.96	− 0.32	. .	− 1.69	13 42 23.95	− 0.10
	22	Moon I, N.	F.	3	42.7	45.3	47.0	53.3	55.4	57.5	3.8	5.3	8.1	51 55.38	+ 0.30	. .	− 1.69	13 51 53.99	+68.04
	23	α Bootis, (R.)	F.	.	31.3	34.0	35.6	40.0	42.2	. .	46.5	48.8	. .	9 44.33	+ 0.04	. .	− 1.70	14 9 42.67	+ 0.11
	24	ε Bootis	F.	.	5.3	8.3	10.0	16.8	19.1	21.6	28.3	30.1	33.0	39 19.17	+ 0.08	− 1.78	− 1.70	14 39 17.55	+ 0.07
	25	α² Libræ	F.	.	28.3	31.1	32.7	39.2	41.3	43.3	49.9	51.3	53.9	43 41.22	+ 0.34	− 1.77	− 1.71	14 43 39.85	+ 0.04
	26	β Ursæ Minoris	F.	.	. .	. .	57.9	5.9	13.2	21.2	28.8	. .	. .	51 13.37	− 1.12	. .	− 1.71	14 51 10.54	+ 0.09
	27	β Libræ	F.	.	48.4	51.1	52.5	58.7	0.7	2.8	9.0	10.5	13.1	10 0.76	+ 0.31	− 1.77	− 1.71	15 9 59.36	+ 0.05
	28	α Coronæ Borealis	F.	.	58.0	1.0	2.8	9.5	11.8	14.1	21.0	22.7	25.4	29 11.81	+ 0.08	− 1.75	− 1.71	15 29 10.18	+ 0.04
	29	ε Serpentis	F.	.	8.2	10.8	12.3	18.4	20.5	22.5	28.6	30.3	32.6	44 20.47	+ 0.23	− 1.82	− 1.72	15 44 18.88	− 0.01
	30	ε Coronæ Borealis	F.	3	59.5	2.2	3.9	11.0	13.4	15.5	22.4	24.2	27.0	52 13.23	+ 0.08	. .	− 1.72	15 52 11.59	− 0.02
	31	δ Ophiuchi	F.	.	19.6	22.7	24.0	30.2	32.3	34.2	40.4	42.0	44.5	7 32.21	+ 0.27	− 1.84	− 1.73	16 7 30.75	+ 0.13
	32	Saturn I, (S. ring)	F.	3	31.5	34.2	35.8	. .	. .	. .	53.4	54.9	57.5	54 44.55	+ 0.38	. .	− 1.74	16 54 43.19	. .
	33	Saturn II, (N. ring)	F.	.	. .	. .	41.4	43.7	46.0	48.0	50.4	. .	. .	54 45.89	+ 0.38	. .	− 1.74	16 54 44.53	. .
24	34	Sun I, N.	N.	2	36.0	38.7	40.4	46.9	49.1	51.5	57.8	59.3	2.5	4 49.13	+ 0 09	. .	− 2.27	4 4 46.95	. .
	35	Sun II, S.	N.	2	51.6	54.4	55.9	2.6	4.7	6.8	13.3	15.0	18.0	7 4.70	+ 0.09	. .	− 2.27	4 7 2.52	. .
	36	η Virginis	N.	2	3.2	5.7	7.2	13.3	15.4	17.4	23.5	25.0	27.6	13 15.37	+ 0.23	− 2.37	− 2.39	12 13 13.21	− 0.03
	37	32¹ Camelopard., (R.)	N.	3	. .	. .	35.1	55.9	15.8	35.9	55.5	. .	. .	48 15.53	− 5.18	. .	− 2.40	12 48 7.95	− 7.48
	38	32² Camelopard., (R.)	N.	3	. .	. .	43.0	3.0	23.0	43.4	2.3	. .	. .	48 22.87	− 5.18	. .	− 2.40	12 48 15.29	− 0.14
	39	Polaris, S. P. (R.)	N.	2	. .	. .	. .	. .	. .	. .	45.0	45.0	59.0	10 21.97	+18.21	. .	− 2.40	1 10 37.78	− 0.63
	40	Polaris, S. P.	N.	2	. .	. .	10.5	46.0	25.0	55.5	36.0	. .	. .	10 22.92	+16.21	. .	− 2.40	1 10 36.73	+ 1.68
	41	α Virginis	N.	2	8.7	11.3	12.9	19.2	21.2	23.3	29.5	31.0	33.5	18 21.18	+ 0.29	− 2.39	− 2.40	13 18 19.07	0.00
	42	η Bootis	N.	3	17.5	20.3	21.8	28.3	30.5	32.6	39.0	40.7	43.4	48 30.46	+ 0.10	− 2.42	− 2.41	13 48 28.15	− 0.02
	43	α Draconis, (R.)	N.	2	33.2	36.6	46.4	. .	56.0	. .	5.6	15.0	18.8	0 55.94	+ 0.83	. .	− 2.42	14 0 52.35	− 0.28
	44	α Bootis, (R.)	N.	2	. .	. .	40.6	42.9	45.1	47.2	49.4	. .	. .	9 45.03	− 0.02	. .	− 2.42	14 9 42.59	+ 0.03
	45	α² Libræ	N.	2	29.2	31.9	33.5	39.8	41.9	44.0	50.6	52.0	54.6	43 41.94	+ 0.32	− 2.46	− 2.43	14 43 39.83	+ 0.01
	46	β Ursæ Minoris	N.	1	28.1	37.4	43.0	6.7	14.4	22.5	45.4	50.9	0.7	51 14.34	− 1.32	. .	− 2.43	14 51 10.59	+ 0.20
	47	β Libræ, (R.)	N.	3	49.2	51.8	53.4	59.6	1.6	3.6	9.9	11.4	14.0	10 1.61	+ 0.23	. .	− 2.43	15 9 59.41	+ 0.08
	48	γ Ursæ Minoris	N.	3	24.2	32.7	37.8	57.9	4.5	11.4	31.6	36.4	45.0	21 4.61	− 1.11	. .	− 2.43	15 21 1.07	+ 0.31

1. Reset circle and read microscopes as follows: V—0.8
VI—2.4
VII—3.4
VIII—2.5

7. Wire A used.
13. Sun moving in R. A. by jumps.
26.38.39.40.47. Bisections at sets B and D.

Number.	Circle Division.	MICROCSOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	307 28	. .	3.8	5.0	3.5	23	675	676	684	695	686	50.6	307 31 19.2	538	− 1 15.2	358 36 25.2	− 0.3
2	232 24	28.7	1.7	1.0	29.2	28	. .	. .	682	640	. .	50.6	232 28 39.1	. .	+ 1 15.2	358 36 26.9	+ 1.4
3	350 52	8.1	8.3	8.4	8.3	24	466	556	. .	665	642	50.6	350 55 38.3	. .	− 9.3	42 1 50.2	+ 2.4
4	19 46	3.4	3.1	4.9	4.0	26	. .	. .	. .	164	228	50.6	19 49 57.4	. .	+ 20.9	70 56 39.5	− 0.4
5	206 2	3.2	4.8	5.6	2.9	26	980	970	. .	091	194	50.6	206 6 10.4	. .	+ 28.4	24 59 42.4	− 0.6
6	18 58	0.3	0.5	3.4	1.9	23	905	934	. .	045	080	50.6	19 1 22.2	. .	+ 20.0	70 8 3.4	+ 1.2
7	47 8	3.1	2.9	6.3	5.3	24	. .	300	. .	344	. .	50.6	47 8 55.8	557	+ 1 2.6	98 16 19.6	− 5.4
8	11 40	6.8	6.6	8.4	7.7	26	. .	020	. .	114	. .	50.6	11 43 59.9	. .	+ 12.1	62 50 33.2	+ 2.0
9	147 54	3.7	7.6	8.7	5.9	23	. .	400	. .	490	. .	50.6	147 57 18.6	. .	− 36.4	83 9 39.0	+ 2.8
10	320 36	7.6	8.7	8.1	8.6	28	. .	. .	328	. .	. .	50.6	320 40 35.1	. .	− 47.7	11 46 8.6	− 0.2
11	59 40	2.5	3.1	4.7	4.4	26	. .	. .	. .	028	. .	50.6	59 43 54.5	568	+ 1 39.5	110 51 55.2	− 0.8
12	59 40	2.5	3.1	4.7	4.4	27	. .	. .	. .	. .	203	50.6	59 44 13.5	. .	+ 1 39.5	110 52 14.2	− 0.8
13	18 16	0.7	1.7	3.2	1.4	26	020	050	. .	. .	. .	50.6	18 19 54.2	398	+ 18.6	69 26 34.0	− 2.7
14	18 48	28.6	29.5	1.6	1.0	24	. .	. .	. .	780	800	50.6	18 51 32.5	. .	+ 19.1	69 58 12.8	− 2.7
15	61 28	9 28.6	29.4	2.5	1.0	27	. .	904	. .	040	. .	51.9	61 32 22.9	507	+ 1 45.6	112 40 29.7	− 1.6
16	359 48	1.2	29.2	2.8	0.5	26	112	250	. .	362	446	51.9	359 51 58.4	. .	− 0.1	50 58 19.5	+ 0.8
17	43 40	5.7	6.2	9.5	7.3	22	576	584	. .	594	594	51.9	43 43 7.5	515	+ 55.0	94 50 23.7	− 2.0
18	307 28	29.2	0.6	1.3	29.9	23	804	834	836	914	912	51.9	307 31 19.9	510	− 1 14.7	358 36 26.4	+ 1.3
19	49 16	4.8	5.3	8.4	6.9	23	. .	008	. .	068	. .	51.9	49 19 13.5	512	+ 1 6.8	100 26 41.5	− 0.6
20	38 44	10 0.4	0.4	2.8	1.6	28	160	188	. .	280	286	51.9	38 48 27.9	. .	+ 46.3	89 55 35.4	+ 1.6
21	191 0	2.5	4.3	6.1	2.4	27	. .	. .	. .	832	850	51.9	191 4 23.0	523	+ 11.3	40 1 46.9	− 0.4
22	45 34	7 27.5 11 27.8	26.7 27.2	0.7 0.5	0.1 29.4	25	258	468	642	794	026	51.9	45 38 45.7	527	+ 59.0	96 46 5.9	
23	160 56	9 28.7	2.6	3.6	28.7	20	. .	940	. .	020	. .	51.9	160 58 36.5	. .	− 19.9	70 8 4.6	+ 2.7
24	11 12	5.4	4.3	7.6	4.9	25	. .	082	. .	136	. .	51.9	11 15 44.6	. .	+ 11.5	62 22 17.3	0.0
25	54 18	9 28.9	28.8	2.4	0.7	26	. .	. .	. .	996	136	51.9	54 22 8.0	520	+ 1 20.2	105 29 49.4	+ 2.6
26	324 8	29.3	29.5	0.8	29.3	29	. .	. .	. .	482	502	51.9	324 12 45.6	. .	− 41.5	15 18 25.3	− 0.1
27	47 42	2.6	2.3	5.5	4.2	28	. .	054	. .	160	. .	51.9	47 46 28.3	519	+ 1 3.4	98 53 52.9	0.0
28	11 40	6.7	5.3	8.5	6.1	25	948	994	. .	112	152	51.9	11 44 0.2	. .	+ 12.0	62 50 33.4	+ 2.6
29	33 56	9 25.2	24.5	28.1	26.7	29	. .	. .	. .	020	062	51.9	34 0 34.3	520	+ 38.9	85 7 34.4	− 1.5
30	11 34	0.4	29.5	2.8	0.1	25	938	985	. .	066	095	51.9	11 37 53.8	523	+ 11.9	62 44 26.9	+ 0.4
31	42 10	3.1	2.9	6.4	4.4	26	. .	. .	. .	585	613	51.9	42 14 5.0	522	+ 52.3	93 21 18.5	+ 1.6
32	59 40	3.2	2.4	5.5	5.4	23	524	. .	. .	. .	624	51.9	59 43 19.2	532	+ 1 38.6	110 51 19.0	− 0.8
33	59 40	3.2	2.4	5.5	5.4	22	. .	150	. .	180	. .	51.9	59 42 57.9	. .	+ 1 38.6	110 50 57.7	− 0.8
34	17 42	9 27.8	27.2	29.5	29.6	24	822	848	. .	. .	. .	50.2	17 45 32.3	. .	+ 17.7	68 52 11.2	− 2.6
35	18 14	5.1	5.0	8.0	7.0	22	. .	. .	. .	770	864	50.2	18 17 6.0	336	+ 18.3	69 23 47.5	− 2.7
36	38 46	7.1	7.6	9.0	8.4	23	. .	235	. .	335	. .	50.1	38 49 17.2	430	+ 45.4	89 56 23.8	− 0.7
37	225 10	8.4	10.5	10.3	8.9	23	. .	840	. .	898	. .	50.1	225 13 26.8	. .	+ 57.1	5 51 57.3	−19.1
38	225 10	8.4	10.5	10.3	8.9	22	. .	714	. .	754	. .	50.1	215 13 9.9	451	+ 57.1	5 52 14.2	− 2.2
39	232 24	5.3	8.0	7.1	5.3	28	. .	. .	812	760	692	50.1	232 28 41.4	. .	+ 1 13.8	358 36 26.0	+ 1.3
40	307 28	2.7	2.9	3.1	3.4	23	. .	580	637	680	. .	50.1	307 31 17.4	457	− 1 13.8	358 36 24.8	+ 0.1
41	49 16	3.6	4.2	5.9	5.5	23	211	251	. .	336	368	50.1	49 19 14.0	. .	+ 1 6.1	100 26 41.3	− 0.7
42	19 46	6.7	6.5	7.6	6.9	25	. .	. .	970	. .	. .	50.1	19 49 57.1	475	+ 20.6	70 56 38.9	− 0.4
43	206 2	8.0	10.1	10.1	7.4	26	. .	770	775	928	. .	50.0	206 6 11.6	. .	+ 28.0	24 59 41.6	− 0.4
44	160 56	2.5	6.8	6.8	2.5	20	830	852	. .	900	920	50.0	160 58 36.7	480	− 19.7	70 8 4.2	+ 2.6
45	54 18	4.4	5.3	7.1	7.0	26	630	625	. .	724	769	50.0	54 22 6.9	. .	+ 1 19.5	105 27 47.6	+ 0.8
46	324 8	4.3	5.1	4.6	4.9	29	124	091	. .	180	138	50.0	324 12 43.5	481	− 41.2	15 18 23.5	− 1.3
47	132 10	26.9	0.7	0.7	28.1	24	650.	. .	. .	. .	755	50.0	132 13 29.9	. .	− 1 2.9	98 53 54.2	+ 1.4
48	326 32	8.5	9.6	7.7	8.1	26	395	520	. .	584	550	50.0	326 36 8.6	. .	− 37.7	17 42 52.1	+ 0.5

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
22	− 42 25.6	+ 16 16.0

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES.										CORRECTIONS.			Apparent R. Ascension.	Miscellan'us Corrections.
					I.	II.	III.	IV.	V.	VI.	VII.	VIII	XI.	Mean wire.	Inst.	Clock appar'nt.	Clock adopted.		
1869.														m. s.	s.	s.	s.	h. m. s.	s.
May 24	1	α Coronæ Borealis	N.	2	58.9	1.6	3.4	10.3	12.7	14.8	21.6	23.5	26.4	29 12.38	+ 0.03	− 2.46	− 2.44	15 29 10.17	+ 0.02
	2	α Serpentis, (R.)	N.	2	40.7	43.3	45.0	49.0	51.0	53.0	. .	. .	. .	37 53.05	+ 0.12	. .	− 2.44	15 37 50.73	+ 0.10
	3	Moon I, N.	N.	3	46.8	49.5	51.2	57.6	59.8	1.9	8.3	10.0	12.9	46 59.78	+ 0.34	. .	− 2.44	15 46 57.68	+69.22
	4		N.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	5	ζ Ophiuchi	N.	3	48.4	50.9	52.6	58.8	0.8	2.0	9.0	10.8	13.3	30 0.73	+ 0.29	− 2.43	− 2.45	16 30 58.57	− 0.07
	6	Saturn I, N.	N.	2	55.8	58.6	0.2	. .	. .	. .	17.7	19.2	22.0	54 8.92	+ 0.36	. .	− 2.45	16 54 6.83	. .
	7	Saturn II, S.	N.	2	. .	. .	5.9	7.7	10.0	12.4	14.5	. .	. .	54 10.09	+ 0.36	. .	− 2.46	16 54 7.99	. .
25	8	Polaris, S. P.	F.	.	. .	. .	11.0	48.0	23.5	59.5	36.0	. .	. .	10 23.92	+18.28	. .	− 2.77	1 10 39.43	+ 0.31
	9	α Virginis	F.	3	9.3	11.7	13.4	19.5	21.5	23.6	29.9	31.4	34.0	18 21.59	+ 0.28	− 2.80	− 2.77	13 18 19.10	+ 0.04
	10	α Bootis, (R.)	F.	2	32.4	35.3	36.8	43.2	45.4	47.5	54.5	55.8	58.6	9 45.50	+ 0.02	. .	− 2.78	14 9 42.74	+ 0.18
	11	θ Bootis	F.	3	. .	. .	42.1	45.5	49.0	52.2	55.6	. .	. .	20 48.87	+ 0.32	. .	− 2.78	14 20 46.41	+ 0.77
	12	5 Ursæ Minoris	F.	.	. .	. .	37.0	48.5	57.6	5.7	15.1	. .	. .	27 56.75	− 1.61	. .	− 2.78	14 27 52.36	− 1.56
	13	ε Bootis, (R.)	F.	.	6.6	9.5	11.1	18.3	20.5	22.7	29.6	31.4	34.2	39 20.43	− 0.05	. .	− 2.79	14 39 17.59	+ 0.12
	14	β Libræ	F.	3	49.5	52.0	53.6	59.8	2.0	3.9	10.2	11.5	14.3	10 1.87	+ 0.27	− 2.82	− 2.79	15 9 59.35	+ 0.02
	15	Vesta	F.	4	45.0	47.6	49.2	55.3	57.4	59.5	5.5	7.0	9.7	18 57.36	+ 0.26	. .	− 2.79	15 18 54.83	. .
	16	α Corona Borealis	F.	3	59.0	2.0	3.8	10.6	12.8	15.3	22.1	23.7	26.6	29 12.88	+ 0.02	− 2.75	− 2.79	15 29 10.11	− 0.04
	17	α Serpentis	F.	3	41.0	43.6	45.2	51.3	53.2	55.4	1.5	3.2	5.7	37 53.34	+ 0.17	− 2.88	− 2.80	15 37 50.71	+ 0.08
	18	ε Serpentis	F.	.	9.2	11.7	13.0	19.4	21.3	23.6	29.6	31.2	34.0	44 21.44	+ 0.18	− 2.71	− 2.80	15 44 18.82	− 0.10
	19	ζ Ursæ Minoris	F.	3	. .	. .	. .	. .	. .	. .	36.5	44.3	56.3	48 56.76	− 1.86	. .	− 2.80	15 48 52.10	− 0.65
	20	β¹ Scorpii	F.	3	40.9	43.5	45.0	51.7	53.9	56.0	2.3	4.0	6.9	57 53.80	+ 0.33	− 2.87	− 2.80	15 57 51.33	+ 0.12
	21	δ Ophiuchi	F.	3	20.9	23.5	25.0	31.2	33.2	35.3	41.4	42.9	45.4	7 33.20	+ 0.24	− 2.77	− 2.81	16 7 30.63	− 0.02
	22	τ Herculis	F.	3	35.3	39.0	41.3	50.2	53.2	56.1	5.1	7.4	11.8	15 53.18	− 0.22	. .	− 2.81	16 15 50.15	+ 0.05
	23	Moon II, N.	F.	.	1.3	4.0	5.8	12.3	14.7	16.8	23.5	25.0	27.9	48 14.59	+ 0.34	. .	− 2.82	16 48 12.11	−69.61
	24	Saturn I, S.	F.	3	37.8	40.4	42.0	. .	. .	. .	59.4	1.0	3.7	53 50.73	+ 0.34	. .	− 2.82	16 53 48.25	. .
	25	Saturn II, N.	F.	3	. .	. .	47.8	49.9	52.0	54.2	56.3	. .	. .	53 52.03	+ 0.34	. .	− 2.82	16 53 49.55	. .
	26	Flora	F.	.	43.0	45.7	51.3	53.2	55.8	58.3	0.2	6.3	8.8	23 55.84	+ 0.32	. .	− 2.82	17 23 53.34	. .
	27	μ Herculis	F.	3	10.7	13.6	15.2	22.0	24.4	26.6	33.5	35.5	38.3	41 24.42	+ 0.01	− 2.79	− 2.83	17 41 21.60	− 0.04
26	28	Sun I, N.	Ha.	.	41.4	44.0	45.8	52.2	54.3	56.6	3.1	4.9	7.4	12 54.41	+ 0.08	. .	− 2.94	4 12 51.55	. .
	29	Sun II, S.	Ha.	.	. .	. .	5.9	8.2	10.3	12.4	14.9	. .	. .	15 10.33	+ 0.08	. .	− 2.94	4 15 7.47	. .
	30	Polaris, S. P.	Ha.	.	. .	. .	9.0	46.0	24.0	58.0	35.5	. .	. .	10 22.82	+21.01	. .	− 3.00	1 10 40.83	+ 0.88
	31	Polaris, S. P., (R.)	Ha.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
	32	α Draconis	Ha.	.	27.1	33.3	37.1	51.6	56.3	1.1	15.9	19.3	25.4	0 56.34	− 0.73	. .	− 3.01	14 0 52.60	+ 0.02
	33	α Bootis	Ha.	.	32.5	35.2	36.9	43.3	45.4	47.5	54.0	55.8	58.3	9 45.43	+ 0.10	− 2.96	− 3.01	14 9 42.52	− 0.04
	34	5 Ursæ Minoris	Ha.	.	7.1	17.7	23.7	50.0	58.4	7.2	32.9	39.4	50.0	27 58.49	− 1.69	. .	− 3.01	14 27 53.79	+ 0.29
	35	ε Bootis	Ha.	.	6.7	9.5	11.4	18.1	20.4	22.6	29.7	31.5	34.3	39 20.47	+ 0.03	− 3.04	− 3.01	14 39 17.49	+ 0.02
	36	β Bootis	Ha.	.	49.5	52.8	54.8	2.9	5.6	8.2	16.4	18.4	21.7	57 5.59	− 0.12	. .	− 3.02	14 57 2.45	+ 0.12
	37	β Libræ	Ha.	.	49.7	52.0	53.7	0.0	2.2	4.0	10.2	12.0	14.2	10 2.00	+ 0.30	− 2.98	− 3.02	15 9 59.28	− 0.05
	38	μ¹ Bootis	Ha.	.	21.7	25.0	26.9	34.8	37.5	40.0	47.7	49.7	52.9	19 37.36	− 0.08	− 3.04	− 3.02	15 19 34.26	+ 0.02
	39	α Coronæ Borealis	Ha.	.	59.4	2.3	4.0	10.9	13.1	15.4	22.4	24.0	26.8	29 13.14	+ 0.04	− 3.03	− 3.02	15 29 10.16	+ 0.01
	40	α Serpentis	Ha.	.	41.2	43.8	45.2	51.4	53.4	55.5	1.6	3.2	5.8	37 53.46	+ 0.20	− 3.03	− 3.02	15 37 50.64	+ 0.01
	41	ε Serpentis	Ha.	.	9.4	12.0	13.6	19.6	21.7	23.8	29.9	31.4	34.0	44 21.71	+ 0.21	− 3.00	− 3.02	15 44 18.90	− 0.03
	42	Saturn, ring I, S.	Ha.	.	18.3	21.0	22.7	. .	. .	. .	40.2	41.7	44.7	53 31.43	+ 0.36	. .	− 3.03	16 53 28.76	. .
	43	Saturn, ring II, N.	Ha.	.	. .	. .	30.0	32.4	34.5	36.8	38.9	. .	. .	53 34.51	+ 0.36	. .	− 3.03	16 53 31.84	. .
	44	α Herculis	Ha.	.	32.6	35.2	36.7	42.9	45.0	47.2	53.4	55.2	57.7	8 45.10	+ 0.13	− 3.07	− 3.03	17 8 42.20	+ 0.04
	45	Moon, N.	Ha.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . .	. .
31	46	Sun I, S.	N.	2	. .	. .	12.1	13.7	16.0	18.4	20.3	. .	. .	33 16.09	+ 0.20	. .	. .	. . . .	. .
	47	Sun II, N.	N.	3	19.3	21.9	23.7	30.3	32.4	34.7	41.3	42.9	45.6	35 32.46	+ 0.20	. .	. .	. . . .	. .
	48	Polaris	N.	3	. .	. .	. .	29.0	. .	17.0	43.0	. .	. .	11 17.33	−29.05	. .	. .	. . . .	. .

3.11.19. Bisections at sets B and D.
10. Bisections at wires II and VII.
23. Bisections at wires II–VI.
26. Wire A used.
28. Bisections at wires II and III.
28. Perhaps whole revolutions of telescope micrometers are 5 revs. wrong.
31. Bisections at $30^m 40^s$, $31^m 50^s$, and $33^m 55^s$, clock time.

Number.	Circle Division.	MICROSCOPE MICROMS. V.	VI.	VII.	VIII.	TELESCOPE MICROMETER. Rev.	1.	2.	3.	4.	5.	Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
	° ′	r. ″	″	″	″							″	° ′ ″		′ ″	° ′ ″	″
1	11 40	9 10.8	9.3	10.6	10.5	27	700	742	. .	865	918	50.0	11 43 58.8	. .	+ 11.9	62 50 31.9	+ 1.6
2	147 54	6.2	9.7	9.9	7.6	23	. .	315	. .	. .	. .	50.0	147 57 18.5	496	− 35.9	83 9 38.6	+ 2.9
3	} 54 26	{ 8 13.1	11.8	15.0	15.3	26	. .	740	925	020	. .	} 50.0	54 29 18.4	{ . .	+ 1 20.0	105 36 59.6	
4		12 13.2	14.5	15.1	15.0	. .	. .	. .	. .	. .	. .						
5	49 6	6.6	6.6	8.9	7.5	27	970	975	. .	125	108	50.0	49 10 29.2	507	+ 1 6.4	100 17 56.8	+ 1.0
6	59 38	10 17.3	17.9	19.4	19.2	25	845	. .	. .	. .	986	50.0	59 42 7.5	500	+ 1 37.9	110 50 6.7	− 0.8
7	59 38	10 17.3	17.9	19.4	19.2	27	. .	061	. .	148	. .	50.0	59 42 25.8	. .	+ 1 37.9	110 50 24.9	− 0.8
8	307 28	5.5	7.0	6.5	6.5	23	365	326	380	287	434	50.7	307 31 17.1	398	− 1 12.9	358 36 25.4	+ 0.8
9	49 18	10 20.8	20.2	20.3	20.8	22	215	290	. .	339	388	50.7	49 21 15.3	402	+ 1 5.3	100 28 41.8	− 0.2
10	160 56	5.0	7.7	7.5	5.0	20	. .	606	. .	. .	752	50.7	160 58 36.2	412	− 19.4	70 8 4.4	+ 3.0
11	346 22	10 14.5	13.4	13.0	14.3	26	. .	. .	. .	925	892	50.7	346 26 18.8	. .	− 13.6	37 32 26.4	− 3.0
12	322 34	10 12.0	13.0	12.3	13.9	23	735	738	. .	768	784	50.7	322 37 32.0	417	− 43.0	13 43 10.2	+ 1.8
13																	
14	47 42	10.3	9.7	10.5	11.1	27	793	839	. .	900	963	50.7	47 46 30.3	423	+ 1 2.1	98 53 53.6	+ 0.8
15	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . . .	423			
16	11 40	16.8	15.3	16.0	16.1	25	318	386	. .	556	566	50.7	11 43 59.3	. .	+ 11.7	62 50 32.2	+ 2.1
17	31 58	9 26.0	25.2	26.3	26.5	29	. .	434	. .	570	. .	50.7	32 2 40.9	. .	+ 35.3	83 9 37.4	+ 1.8
18	33 56	3.1	2.5	3.5	3.9	28	520	530	. .	640	688	50.7	34 0 34.3	. .	+ 38.0	85 7 33.5	+ 0.6
19	320 38	10 12.6	13.4	11.6	12.1	27	. .	. .	. .	. .	967	50.7	320 42 33.6	423	− 46.1	11 48 8.7	+ 1.4
20	58 14	10.2	9.5	11.3	12.2	28	940	953	. .	068	140	50.7	58 18 48.2	. .	+ 1 31.1	109 26 40.5	+ 0.6
21	42 10	13.2	13.0	13.9	13.1	25	930	004	. .	098	110	50.7	42 14 5.1	. .	+ 51.2	93 21 17.5	+ 0.8
22	352 12	10 17.6	16.6	17.0	16.5	25	868	986	. .	174	190	50.7	352 16 9.6	427	− 7.7	43 22 23.1	+ 1.6
23	57 28	4.7	5.0	5.3	6.2	26	162	252	410	528	627	50.7	57 32 2.6	425	+ 1 28.4	108 39 52.2	
24	59 38	11.2	11.0	11.6	12.0	25	886	. .	. .	. .	008	50.7	59 42 1.6	. .	+ 1 36.1	110 49 58.9	− 0.8
25	59 38	11.2	11.0	11.6	12.0	24	. .	539	. .	617	. .	50.7	59 41 40.9	423	+ 1 36.1	110 49 38.2	− 0.8
26	56 12	10 18.4	17.7	19.8	20.7	30	818	988	. .	008	008	50.7	56 14 52.1	. .	+ 1 24.2	117 22 37.5	− 5.1
27	11 2	10.5	9.0	8.9	8.9	24	. .	052	. .	198	. .	50.7	11 5 32.1	430	+ 11.1	62 12 4.4	+ 0.5
28	17 22	9 28.7	25.8	25.8	24.8	20	618	605	. .	. .	. .	48.3	17 24 23.3	. .	+ 17.1	68 31 1.6	− 2.6
29	17 52	9 28.0	26.8	26.4	26.4	26	. .	. .	. .	900	916	48.3	17 55 59.0	268	+ 17.6	69 2 37.8	− 2.6
30	307 28	6.0	8.5	7.4	6.5	23	345	245	375	335	400	48.3	307 31 15.2	330	− 1 11.7	358 36 24.7	+ 0.3
31	232 24	3.5	6.9	5.0	2.6	27	. .	. .	620	935	007	48.3	232 28 45.4	. .	+ 1 11.7	358 36 24.1	− 0.3
32	333 50	8 7.9	7.5	6.2	6.0	29	. .	225	. .	290	. .	48.3	333 53 46.3	365	− 27.3	24 59 40.2	− 1.4
33	18 58	10 9.5	11.0	9.8	9.0	23	. .	528	. .	678	. .	48.3	19 1 22.2	. .	+ 19.2	70 8 2.6	+ 1.3
34	322 34	9.5	11.0	9.0	8.0	23	. .	903	. .	989	. .	48.3	322 37 29.1	360	− 42.4	13 43 7.9	− 0.3
35	11 12	10 15.7	15.0	15.6	14.4	24	. .	600	. .	685	. .	48.3	11 15 43.5	. .	+ 11.1	62 22 15.8	− 0.7
36	357 56	11.5	11.8	10.0	9.6	22	. .	340	. .	. .	440	48.3	357 59 4.7	. .	− 2.0	49 5 23.9	− 0.9
37	47 42	17.0	16.5	16.1	17.0	27	. .	700	. .	720	. .	48.3	47 46 31.6	. .	+ 1 1.4	98 53 54.2	+ 1.4
38	1 0	10.8	10.8	10.1	9.0	23	. .	190	. .	290	. .	48.3	1 3 17.1	. .	+ 1.0	52 9 39.3	+ 0.5
39	11 40	12.0	11.0	10.2	10.0	25	. .	930	. .	015	. .	48.3	11 43 59.4	. .	+ 11.6	62 50 32.2	+ 2.3
40	32 0	11.9	11.5	11.5	11.2	20	. .	730	. .	870	. .	48.3	32 2 41.0	. .	+ 34.9	83 9 37.1	+ 1.6
41	33 58	14.7	14.2	14.1	14.6	20	. .	210	. .	270	. .	48.3	34 0 35.3	372	+ 37.6	85 7 34.1	+ 1.3
42	59 38	9.6	10.9	10.6	10.5	24	315	. .	. .	. .	530	48.3	59 41 34.9	. .	+ 1 35.0	110 49 31.1	− 0.8
43	59 38	9.6	10.9	10.6	10.5	22	. .	995	. .	. .	. .	48.3	59 41 13.9	. .	+ 1 35.0	110 49 10.1	− 0.8
44	24 18	12.0	12.3	11.5	11.1	20	. .	750	. .	910	. .	48.3	24 20 41.7	375	+ 25.2	75 27 28.1	− 0.6
45	59 20	8.0	9.0	8.8	8.3	24	. .	390	535	585	. .	48.3	59 23 34.5	375	+ 1 33.9	110 31 29.6	
46	17 6	9 24.6	27.2	25.4	26.6	25	268	348	. .	. .	. .	48.0	17 9 34.8	. .	+ 16.9	68 16 12.9	− 2.5
47	16 34	10 20.1	22.4	20.8	18.7	25	. .	. .	. .	447	480	48.0	16 38 0.4	282	+ 16.3	67 44 37.9	− 2.5
48	. .	. .	. .	. .	. .	..	. .	. .	. .	. .	. .	. .	. . . . .	358			

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°
30	29.878	74.5	74.5
48	30.112	76.2	73.8

For summary of the elements of reduction see page 3.

No.	MOON'S— Parallax.	Semi-diam.
	′ ″	′ ″
3	− 47 42.8	+ 16 3.3
23	− 49 3.4	+ 15 53.2
45	− 49 19.0	+ 15 41.4

DATE.	Number.	OBJECT.	Observer.	Weight.	SECONDS OF TRANSIT OVER WIRES. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	Mean wire.	CORRECTIONS. Inst.	Clock appar'nt.	Clock adopted.	Apparent R. Ascension.	Miscellan'us corrections.
1869.														m. s.	s.	s.	s.	h. m. s.	s.
June 3	1	Sun I, N. . . .	N.	2	19.5	22.2	23.9	30.7	32.6	34.9	41.7	43.2	46.0	45 32.74	+ 0.22	. .	− 3.15	4 45 29.81	. .
	2	Sun II, S. . . .	N.	2	36.5	39.1	40.7	47.2	49.6	51.8	58.4	0.0	2.8	47 49.57	+ 0.22	. .	− 3.15	4 47 46.64	. . .
	3	Polaris, S. P. . .	N.	4	. .	. .	4.0	40.5	16.0	. .	26.5	. .	. .	10 16.80	+32.84	. .	− 3.15	1 10 46.49	+ 1.02
	4	Polaris, S. P., (R.).	N.	4	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	5	α Draconis . . .	N.	3	. .	. .	46.8	51.7	56.7	1.4	6.5	. .	. .	0 56.60	− 1.09	. .	− 3.15	14 0 52.36	− 0.01
	6	α Bootis	N.	3	32.5	35.2	36.9	43.3	45.4	47.5	54.0	55.7	58.4	9 45.43	+ 0.25	− 3.15	− 3.15	14 9 42.53	+ 0.01
	7	θ Bootis, (R.) . .	N.	3	30.2	34.2	36.8	46.8	50.2	53.6	3.6	6.0	10.4	20 50.20	− 0.76	. .	− 3.15	14 20 46.29	+ 0.56
	8	β Ursæ Minoris . .	N.	4	. .	. .	. .	7.9	15.6	23.3	31.2	. .	. .	51 15.62	− 2.26	. .	− 3.15	14 51 10.21	+ 0.16
	9	α Coronæ Borealis .	N.	2	59.3	2.2	4.0	10.9	13.1	15.4	22.4	24.0	26.9	29 13.12	+ 0.14	− 3.10	− 3.15	15 29 10.09	− 0.07
	10	α Serpentis . . .	N.	3	41.0	43.6	45.3	51.4	53.5	55.6	1.6	3.1	5.8	37 53.43	+ 0.42	− 3.19	− 3˙15	15 37 50.70	+ 0.04
4	11	Sun I, S. . . .	Ha.	.	25.7	28.4	30.0	36.7	38.8	41.3	47.5	49.3	52.0	49 38.86	+ 0.24	. .	. .	. . . .	. .
	12	Sun, N. . . .	Ha.	.	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
5	13	Polaris, S. P. . .	F.	3	3.5	. .	. .	. .	. .	. .	. .	. .	. .	10 13.90	+36.78	. .	− 2.82	1 10 47.86	+ 1.27
	14	β Ursæ Minoris .	F.	.	. .	. .	59.3	7.2	14.0	22.0	30.4	. .	. .	51 14.55	− 2.28	. .	− 2.81	14 51 9.46	− 0.50
	15	Vesta	F.	.	53.8	56.4	57.9	4.0	6.0	8.3	14.4	15.9	18.4	10 6.12	+ 1.04	. .	− 2.81	15 10 4.35	. .
	16	μ¹ Bootis	F.	3	21.2	24.3	26.3	34.0	36.7	39.3	46.8	48.9	52.3	19 36.64	+ 0.29	− 2.71	− 2.81	15 19 34.12	− 0.10
	17	α Coronæ Borealis .	F.	3	58.6	1.6	3.4	10.3	12.4	14.7	21.5	23.3	26.3	29 12.46	+ 0.51	− 2.81	− 2.80	15 29 10.17	+ 0.01
	18	α Serpentis . . .	F.	.	40.4	42.8	. .	48.7	52.8	56.8	0.6	. .	. .	37 52.65	+ 0.80	− 2.78	− 2.80	15 37 50.65	− 0.02
	19	β¹ Scorpii	F.	3	40.0	42.6	48.9	51.0	. .	. .	1.9	3.5	. .	57 53.13	+ 1.20	− 2.98	− 2.80	15 57 51.53	+ 0.23
	20	τ Herculis . . .	F.	.	. .	. .	46.8	49.6	52.9	55.9	59.0	. .	. .	15 52.83	+ 0.55	. .	− 2.80	16 15 50.58	+ 0.46
	21	ζ Ophiuchi . . .	F.	3	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	. .	. . . .	. .
	22	Saturn I, S. . .	F.	.	10.7	13.5	15.0	. .	. .	. .	32.6	. .	. .	50 23.82	+ 1.20	. .	− 2.79	16 50 22.24	. .
	23	Saturn II, N. . .	F.	.	. .	. .	20.5	23.0	. .	27.5	29.6	. .	. .	50 25.12	+ 1.20	. .	− 2.79	16 50 23.54	. .
	24	Moon II . . .	N.	2	1.4	4.0	5.7	11.8	14.0	16.1	22.3	24.0	26.5	12 13.98	+ 0.83	. .	− 2.71	2 12 12.10	−62.96

4. Bisections at $18^{m}\ 40^{s}$, $19^{m}\ 20^{s}$, and $20^{m}\ 40^{s}$, clock time.
8.14. Bisections at sets B and D.
18. R. A., and bisection at wire II.
15. Wire B used.

Number.	Circle Division.	MICROSCOPE MICROMS.				TELESCOPE MICROMETER.						Zenith Point Correction.	Apparent Zenith Distance, South.	Sympiesometer.	Refraction.	Apparent N. P. Distance.	Miscellan'us Corrections.
		V.	VI.	VII.	VIII.	Rev.	1.	2.	3.	4.	5.						
	° ′	r. ″	″	″	″							″	° ′		′ ″	° ′ ″	″
1	16 12	9 2.7	1.4	3.3	0.5	23	536	591	. .	. .	. .	44.4	16 14 40.7	. .	+ 16.1	67 21 18.0	− 2.5
2	16 42	10 10.1	11.0	10.6	9.1	27	. .	. .	. .	104	142	44.4	16 46 11.9	336	+ 16.6	67 52 49.7	− 2.5
3	307 28	10 17.2	19.7	16.8	15.8	22	. .	902	. .	920	. .	44.4	307 31 15.1	. .	− 1 12.5	358 36 23.8	+ 0.5
4	232 24	10.8	14.3	10.9	8.9	28	. .	. .	830	895	935	44.4	232 28 44.2	379	+ 1 12.5	358 36 24.5	+ 1.2
5	333 50	12.6	13.8	10.5	9.8	25	. .	. .	182	. .	. .	44.4	333 53 44.2	387	− 27.4	24 59 38.0	− 1.6
6	18 58	14.1	14.5	13.6	12.1	23	. .	. .	462	. .	. .	44.4	19 1 19.8	. .	+ 19.3	70 8 0.3	+ 0.2
7	193 30	9.1	11.6	9.2	5.9	25	266	246	. .	385	402	44.4	193 33 42.9	. .	+ 13.5	37 32 24.8	+ 0.2
8	324 8	16.2	17.2	14.1	13.9	28	. .	. .	614	608	662	44.4	324 12 40.5	389	− 40.3	15 18 21.4	− 0.8
9	11 40	11.5	12.6	10.2	9.6	26	. .	. .	100	086	130	44.4	11 43 57.1	390	+ 11.6	62 50 29.9	+ 1.8
10	31 58	13.8	14.2	14.4	13.3	28	. .	630	. .	705	. .	44.4	32 2 39.8	. .	+ 35.1	83 9 36.1	+ 1.7
11	16 36	10 5.5	5.4	5.5	4.6	23	570	560	. .	. .	. .	44.6	16 39 14.4	. .	+ 16.3	67 45 51.9	− 2.5
12	16 4	9 27.4	28.0	27.5	26.2	25	. .	. .	. .	810	840	44.6	16 7 39.3	275	+ 15.8	67 14 16.3	− 2.5
13	307 28	10 13.8	16.6	14.9	11.9	23	. .	850	. .	. .	. .	44.8	307 31 14.1	452	− 1 13.8	358 36 21.5	− 1.5
14	324 8	9.7	12.2	8.9	7.7	28	800	870	. .	940	972	44.8	324 12 39.5	473	− 41.1	15 18 19.6	− 2.0
15	47 26	17.4	18.9	18.3	16.3	28	620	654	. .	828	880	44.8	47 33 14.0	477	+ 1 2.3	98 40 37.5	− 5.4
16	1 0	16.1	17.0	15.4	14.0	22	. .	930	. .	990	. .	44.8	1 3 14.8	. .	+ 1.1	52 9 37.1	+ 1.2
17	11 40	10 25.8	27.7	26.3	22.6	25	. .	010	. .	112	. .	44.8	11 43 56.8	480	+ 11.9	62 50 29.9	+ 2.3
18	32 0	19.3	21.2	20.2	18.2	20	. .	272	. .	358	. .	44.8	32 2 38.3	. .	+ 35.8	83 9 35.3	+ 1.2
19	58 14	16.7	18.7	18.7	16.9	28	. .	781	. .	802	. .	44.8	58 18 45.8	488	+ 1 32.4	109 26 39.4	− 0.6
20	352 12	11.9	14.3	13.1	10.6	26	. .	. .	. .	452	432	44.8	352 16 4.4	490	− 7.8	43 22 17.8	− 0.4
21	49 6	19.6	21.7	21.4	19.5	27	. .	. .	. .	481	521	44.8	49 10 28.0	492	+ 1 2.2	100 17 51.4	− 3.8
22																	
23	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. . . . .	496			
24																	

No.	Barom.	External Therm.	Attached Therm.
	in.	°	°

For summary of the elements of reduction see page 3.

No.	MOON'S—	
	Parallax.	Semi-diam.
	′ ″	′ ″

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT.

1869.

OBSERVATIONS

WITH THE

MERIDIAN TRANSIT INSTRUMENT.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 7	Weisse (2) 1490 .	1	. .	. .	. .	. .	. .	. .	6.5	9.4	11.2	12.7	14.3	1 10.82	− 42.24	−26.04	1 0 2.54	+ 3.67
Y.	Polaris . . .	2	. .	. .	. .	6.0	47.5	37.0	35.0	9.0	. .	. .	. .	11 38.90	+ 0.08	26.04	. . . .	4.73
	ζ Andromedæ . .	3	42.9	45.9	47.5	1.0	2.4	4.1	5.9	7.3	20.9	22.4	25.3	15 4.15	+ 0.07	26.04	1 14 38.18	3.64
	θ Ceti	4	. .	. .	. .	5.9	7.0	9.0	24.4	26.9	28.1	29.4	30.7	18 20.17	− 26.15	26.04	1 17 27.98	3.58
	Lacaille 436 . .	5	3.1	5.3	6.5	17.0	18.1	19.5	20.9	21.9	32.4	34.4	35.7	26 19.53	+ 0.23	26.04	1 25 53.72	3.48
	Lacaille 458 . .	6	4.4	6.8	8.2	19.4	20.4	21.9	23.3	24.6	35.9	37.0	39.3	29 21.93	0.26	26.04	1 28 56.15	3.42
	Weisse 598 . .	7	31.6	33.6	34.8	44.5	45.6	46.7	48.0	49.1	58.8	59.9	1.9	34 46.77	+ 0.13	26.04	1 34 20.86	3.53
	Weisse 600 . .	8	11.9	13.1	14.6	15.8	17.9	. .	18.7	21.3	22.6	23.8	25.0	34 48.47	− 0.22	26.04	1 34 22.21	3.53
	τ Ceti	9	8.7	11.0	12.1	22.0	23.1	24.5	25.7	26.7	37.6	38.7	40.0	38 24.55	+ 0.20	26.04	1 37 58.71	3.41
	Weisse 755 . .	10	27.6	29.7	30.8	40.4	41.4	42.6	43.8	44.8	54.4	55.4	57.5	43 42.58	0.15	26.04	1 43 16.69	3.45
	Weisse 843 . .	11	58.5	0.5	1.6	11.3	12.3	13.5	14.7	15.7	25.4	26.4	28.5	48 13.49	0.15	26.04	1 47 47.60	3.42
	Weisse 1043 . .	12	46.5	48.7	49.9	59.7	0.7	2.0	3.3	4.4	14.2	15.4	17.6	0 2.04	0.12	26.04	1 59 36.12	3.44
	O. Arg. S. 1376 .	13	30.6	32.7	34.0	43.8	44.9	46.4	47.6	48.7	58.7	0.0	2.1	5 46.32	+ 0.20	26.04	2 5 20.48	3.17
	O. Arg. S. 1384 .	14	. .	. .	. .	14.9	16.0	17.3	18.6	19.7	29.7	30.9	33.1	6 22.52	− 5.04	26.04	2 5 51.44	3.16
	Weisse 188 . .	15	41.5	43.5	44.6	54.5	55.4	56.8	58.0	59.1	9.0	10.1	12.1	13 56.78	+ 0.12	26.04	2 13 30.86	3.38
	Lalande 4504 . .	16	32.8	34.9	36.0	45.7	46.7	47.9	49.1	50.3	59.9	1.0	3.1	19 47.95	0.14	26.05	2 19 22.04	3.29
	*−36° 39′ . . .	17	17.8	20.5	21.9	. .	. .	. .	. .	. .	51.5	52.6	55.1	23 36.57	0.08	26.05	2 23 10.60	3.51
	30 Arietis	18	34.2	36.5	37.8	48.3	49.3	50.6	51.8	53.0	3.6	4.7	7.0	29 50.62	+ 0.10	26.05	2 29 24.67	3.40
	B. A. C. 797 . .	19	14.4	15.5	17.2	18.4	20.9	. .	26.5	29.1	30.6	31.9	33.3	29 53.78	− 0.28	26.05	2 29 27.45	3.40
	Weisse (2) 815 .	20	42.6	45.0	46.3	56.7	57.7	59.1	0.4	1.5	12.1	13.3	15.5	35 59.11	+ 0.10	26.05	2 35 33.16	3.38
	γ Ceti	21	41.7	43.7	44.8	54.5	55.5	56.7	57.8	58.9	8.6	9.7	11.6	36 56.68	0.14	26.05	2 36 30.77	3.17
	Weisse 694 . .	22	24.5	26.7	27.8	37.8	38.7	39.9	41.2	42.3	52.1	53.2	55.2	41 39.95	+ 0.12	26.05	2 41 14.02	3.26
	Weisse 702 . .	23	. .	. .	. .	15.0	16.0	18.2	33.8	36.3	37.7	38.8	40.1	42 29.49	− 26.52	26.05	2 41 36.92	3.26
	Weisse 831 . .	24	41.9	44.0	45.2	54.8	55.8	57.0	58.1	59.2	8.8	10.0	11.9	48 56.97	+ 0.15	26.05	2 48 31.07	3.08
	Weisse 881 . .	25	34.6	36.8	38.0	47.9	48.9	50.2	51.4	52.4	2.5	3.5	5.7	51 50.17	0.12	26.05	2 51 24.24	3.24
	Weisse 1069 . .	26	5.4	7.6	8.9	18.4	19.4	20.6	21.8	22.8	32.4	33.4	35.5	1 20.56	0.15	26.05	3 0 54.66	3.03
	Weisse 30 . . .	27	55.2	. .	58.1	8.0	8.9	10.3	11.5	12.5	22.3	. .	25.5	4 10.26	0.13	26.05	3 3 44.34	3.13
	Lalande 5997 . .	28	18.2	20.4	21.6	31.7	32.8	33.9	35.2	36.4	46.6	47.6	49.8	7 34.02	+ 0.20	26.05	3 7 8.17	2.68
	*−18° 7′ . . .	29	. .	. .	. .	4.5	5.5	7.7	23.7	26.5	27.6	28.8	30.2	8 19.31	− 27.17	26.05	3 7 26.09	2.68
	Weisse (2) 216 .	30	6.0	8.1	9.3	19.4	20.3	21.7	22.9	24.1	34.2	35.2	37.4	11 21.69	+ 0.11	26.05	3 10 55.75	3.21
	Lacaille 1055 . .	31	54.6	56.8	57.9	8.6	9.9	11.1	12.4	13.6	24.2	25.4	27.7	15 11.11	0.23	26.05	3 14 45.29	2.48
	Lalande 6326 . .	32	34.7	37.0	38.2	48.2	49.3	50.6	51.8	53.0	3.2	4.2	6.5	18 50.61	0.21	26.05	3 18 24.77	2.58
	*−18° 18′ . . .	33	. .	. .	. .	31.3	32.3	33.6	34.8	35.8	. .	. .	. .	23 33.56	0.20	26.05	3 23 7.71	2.56
	O. Arg. S. 2302 .	34	. .	. .	. .	47.6	48.6	49.8	51.0	52.2	. .	. .	. .	23 49.84	0.20	26.05	3 23 23.99	2.56
	Lacaille 1124 . .	35	26.9	29.3	30.6	41.3	42.4	43.7	44.8	46.0	56.8	58.0	0.2	26 43.64	0.24	26.05	3 26 17.83	2.34
	Weisse 569 . .	36	10.6	12.9	13.9	23.8	24.9	26.1	27.3	28.4	38.2	39.3	41.5	32 26.08	0.12	26.05	3 32 0.15	3.08
	Lacaille 1176 . .	37	6.7	9.4	10.6	22.5	23.7	25.2	26.5	27.8	39.6	40.9	43.5	35 25.13	0.29	26.05	3 34 59.37	1.97
	21 Tauri	38	16.2	18.4	19.6	30.3	31.4	32.7	34.0	35.1	45.6	46.8	48.9	38 32.64	0.10	26.05	3 38 6.69	3.22
	B. A. C. 1171 . .	39	52.0	54.4	55.4	6.0	7.1	8.5	9.8	10.9	21.4	22.5	24.8	41 8.44	0.10	26.05	3 40 42.49	3.20
	33 Pleiadum . . .	40	47.9	50.3	51.5	2.0	3.1	4.4	5.8	6.9	17.4	18.5	20.8	42 4.42	0.10	26.05	3 41 38.47	3.20
	*−32° 39′ . . .	41	15.3	17.9	19.3	30.8	32.0	33.3	34.6	35.8	47.5	48.7	51.2	45 33.31	0.27	26.05	3 45 7.53	1.97
	B. A. C. 1222 . .	42	1.9	4.2	5.5	16.3	17.5	18.9	20.2	21.5	32.5	33.6	35.8	49 18.90	0.25	26.06	3 48 53.09	2.10
	γ Eridani . . .	43	5.8	8.0	9.2	19.0	20.0	21.3	22.5	23.6	33.5	34.6	36.8	52 21.30	0.19	26.06	3 51 55.43	2.48
	Lalande 7492 . .	44	41.8	44.1	45.4	55.8	56.9	58.1	59.3	0.6	11.0	12.2	14.4	55 58.15	0.22	26.06	3 55 32.31	2.22
	*+14° 49′ . . .	45	. .	. .	. .	41.1	42.1	43.4	44.7	45.7	. .	. .	. .	0 43.40	0.11	26.06	4 0 17.45	3.01
	Rumker 1089 . .	46	28.0	30.2	31.4	. .	. .	. .	. .	. .	55.8	57.0	59.0	0 43.57	0.11	26.06	4 0 17.62	3.01
	Weisse 24 . . .	47	27.8	29.9	31.2	41.0	42.0	43.3	44.5	45.6	55.5	56.6	58.8	3 43.29	0.11	26.06	4 3 17.34	3.00
	*− 6° 52′ . . .	48	17.9	20.0	21.2	30.9	31.9	33.1	34.2	35.3	45.1	46.2	48.2	6 33.09	+ 0.17	26.06	4 6 7.20	2.57
	*+15° 58′ . . .	49	. .	. .	. .	13.0	14.0	15.3	16.5	17.6	27.7	28.7	30.8	9 20.45	− 5.07	26.06	4 8 49.32	3.00
	γ Tauri	50	31.2	33.4	34.5	44.5	45.5	46.8	48:0	49.1	59.0	0.2	2.4	12 46.78	+ 0.11	−26.06	4 12 20.83	+ 2.99

January 9. Image east 0.r60. Clamp east.
Image east 0.r18. Clamp west.
After this changed level correction.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1869. h.	s.	s.	s.	s.
Jan. 7, 3.0	− 26.05	− 0.007	− 0.15	+ 0.15

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 13	Lalande 7492	1	38.9	41.2	42.3	52.8	53.9	55.1	56.5	57.7	8.0	9.3	11.5	55 55.20	+ 0.23	−23.00	3 55 32.43	+ 2.29
E.	Weisse (2) 22	2	36.6	38.9	39.9	50.0	51.1	52.3	53.5	54.5	4.6	5.8	7.8	3 52.27	0.11	23.00	4 3 29.38	3.06
	Weisse (2) 121	3	39.4	41.5	42.8	53.3	54.4	55.7	57.0	58.2	8.6	9.7	12.0	7 55.69	0.09	23.00	4 7 32.78	3.18
	γ Tauri	4	28.0	30.4	31.6	41.2	42.5	43.8	44.8	45.9	56.0	57.2	59.2	12 43.69	0.11	23.00	. . . .	3.03
	Weisse (2) 344	5	4.6	6.7	7.9	18.0	19.1	20.2	21.4	22.5	32.6	33.8	34.8	17 20.15	0.11	23.00	4 16 57.26	3.03
	84 Tauri	6	48.9	51.2	52.3	2.4	3.4	4.5	5.7	7.0	16.7	17.8	19.9	24 4.53	0.11	23.00	4 23 41.64	2.98
	Weisse 572	7	51.7	53.7	54.9	4.5	5.5	6.7	7.9	8.9	18.6	19.6	21.6	28 6.69	0.15	23.00	4 27 43.84	2.67
	Weisse 725	8	14.0	16.0	17.1	26.9	27.9	29.0	30.1	31.2	41.3	42.3	44.4	34 29.11	0.13	23.00	4 34 6.24	2.81
	Weisse (2) 866	9	11.9	14.4	15.5	26.7	27.7	29.2	30.6	31.8	42.9	44.1	46.5	40 29.21	0.08	23.00	4 40 6.29	3.21
	Lalande 9106	10	. .	. .	. .	47.7	49.0	50.8	52.6	54.3	. .	. .	. .	45 50.88	0.05	23.00	4 45 27.93	3.48
	*+43° 55′	11	27.9	31.0	32.7	46.0	47.3	49.0	50.6	52.2	5.5	6.9	9.5	49 48.96	0.05	23.00	4 49 26.01	3.48
	ε Ursæ Minoris, S.P.	†12	55.0	. .	17.0	29.0	37.0	44.5	54.5	1.5	12.0	. .	36.5	59 44.52	0.08	23.00	. . . .	1.23
	Groombridge 980	13	32.0	34.5	35.8	48.2	49.5	51.0	52.5	53.8	6.2	7.5	10.0	22 51.00	+ 0.06	23.00	5 22 28.06	3.34
	δ Orionis	14	. .	. .	. .	40.0	41.2	42.5	43.6	44.7	54.1	55.2	57.4	25 47.34	− 4.82	23.00	. . . .	2.45
16	Polaris	15	. .	. .	. .	. .	. .	. .	13.0	52.0	47.0	35.5	26.5	34 34.80	−23 8.12	22.06	. . . .	13.01
Y.	ο Piscium	16	35.0	37.2	38.3	47.8	48.9	50.1	51.3	52.3	2.2	3.3	5.4	38 50.16	+ 0.14	22.06	1 38 28.24	3.64
	*+38° 58′	†17	4.0	6.8	8.1	39.0	40.3	42.3	2.0	5.2	6.5	7.8	9.1	2 42.83	− 19.48	22.04	2 2 1.31	3.72
	*+38° 33′	18	53.2	55.3	56.5	. .	. .	. .	. .	. .	28.0	29.2	32.0	7 12.37	+ 0.19	22.03	2 6 50.53	3.71
	Weisse (2) 147	19	. .	. .	. .	39.4	40.8	42.3	43.7	45.0	. .	. .	. .	7 42.24	0.19	22.03	2 7 20.40	3.71
	*+61° 13′	20	18.7	23.0	25.2	45.4	47.6	50.0	52.4	54.7	14.8	16.8	21.0	22 49.96	0.32	22.02	2 22 28.26	4.02
	14 Trianguli	21	10.2	12.9	14.2	26.0	27.3	28.8	30.2	31.5	43.2	44.6	47.2	24 28.74	0.18	22.02	2 24 6.90	3.65
	Weisse (2) 711	22	28.6	31.1	32.5	43.2	44.3	45.5	46.7	47.8	58.7	59.8	2.0	30 45.47	0.16	22.01	2 30 23.62	3.54
	*+37° 36′	23	17.2	19.9	21.3	33.6	34.7	36.2	37.7	39.0	51.2	52.5	55.1	35 36.22	0.19	22.01	2 35 14.40	3.65
	Lalande 5112	24	20.3	22.9	24.4	36.4	37.6	39.1	40.5	41.9	54.0	55.2	57.8	39 39.10	0.19	22.01	2 39 17.28	3.63
	β Fornacis	25	40.4	42.8	44.1	55.6	56.7	58.1	59.5	0.8	12.4	13.5	16.0	43 58.17	0.14	22.00	2 43 36.31	2.72
	Lacaille 900	26	53.2	55.5	56.8	8.0	9.1	10.7	12.1	13.2	24.5	25.7	28.0	46 10.62	0.13	22.00	2 45 48.75	2.74
	*+38° 17′	27	30.7	33.4	34.6	47.0	48.3	50.0	51.5	52.7	5.0	6.4	9.0	50 49.87	0.19	22.00	2 50 28.06	3.62
	*−34° 54′	28	1.8	4.3	5.6	17.5	18.6	20.0	21.4	22.6	34.4	35.7	38.3	59 20.02	0.14	21.99	2 58 58.17	2.50
	48 Cephei	29	3.8	12.8	18.0	1.5	5.8	11.6	16.9	21.6	5.1	10.1	19.6	4 11.53	0.72	21.98	3 3 50.27	4.90
	*−29° 23′	30	57.8	0.3	1.5	12.6	13.7	15.1	16.4	17.5	28.6	29.9	32.3	8 15.06	0.13	21.98	3 7 53.21	2.55
	O. Arg. S. 2173	31	31.5	33.8	34.9	45.2	46.1	47.4	48.6	49.8	59.9	1.0	3.3	11 47.41	0.13	21.98	3 11 25.56	2.85
	Lacaille 1055	32	50.4	52.5	53.9	4.6	5.5	7.0	8.3	9.4	20.0	21.2	23.3	15 6.92	0.13	21.98	3 14 45.07	2.60
	Weisse 316	33	1.0	3.2	4.4	13.9	15.0	16.2	17.5	18.6	28.2	29.3	31.4	19 16.25	+ 0.14	21.97	3 18 54.42	3.13
	Weisse 343	34	. .	. .	. .	56.4	57.3	58.6	59.8	0.8	10.5	11.6	13.6	21 3.58	− 4.88	21.97	3 20 36.73	3.14
	*+27° 43′	35	23.8	26.3	27.6	38.4	39.5	40.8	42.2	43.4	54.3	55.4	57.7	30 40.85	+ 0.16	21.96	3 30 19.05	3.38
	*+13° 23′	36	27.2	29.4	30.6	40.6	41.6	42.8	44.0	45.1	55.0	55.9	57.9	35 42.74	0.14	21.96	3 35 20.92	3.15
	23 Tauri	37	38.9	41.2	42.4	52.9	53.9	55.2	56.4	57.6	8.2	9.5	11.7	38 55.26	0.16	21.96	3 38 33.46	3.30
	24 Tauri	38	39.5	42.0	43.1	. .	54.8	56.0	57.5	. .	9.0	10.2	12.6	39 56.08	0.16	21.96	3 39 34.28	3.30
	B. A. C. 1165	39	47.7	49.9	51.1	. .	. .	. .	. .	. .	17.2	18.3	20.5	40 4.12	0.16	21.96	3 39 42.32	3.30
	η Tauri	40	. .	. .	. .	1.9	2.9	4.2	5.6	6.5	. .	. .	. .	40 4.22	0.16	21.96	3 39 42.42	3.30
	*+23° 47′ ±	41	43.7	46.2	47.5	57.9	58.8	0.1	1.5	2.6	13.3	14.5	16.7	42 0.25	0.16	21.95	3 41 38.46	3.30
	Lalande 7238	42	48.2	50.4	51.6	2.1	3.2	4.5	5.7	6.9	17.4	18.4	20.7	49 4.46	0.16	21.95	3 48 42.67	3.25
	ξ Persei	43	32.1	34.5	35.8	47.7	49.0	50.5	51.9	53.2	5.0	6.4	8.8	50 50.45	0.18	21.95	3 50 28.68	3.45
	Weisse (2) 1210	44	16.4	18.7	20.0	30.2	31.1	32.3	33.5	34.4	44.7	45.7	48.0	57 32.27	0.15	21.94	3 57 10.48	3.12
	*+14° 49′	45	. .	. .	. .	37.0	38.1	39.4	40.6	41.5	. .	. .	. .	0 39.32	0.14	21.94	4 0 17.52	3.08
	Rumker 1089	46	23.8	26.2	27.3	. .	. .	. .	. .	. .	51.8	52.8	55.1	0 39.50	0.14	21.94	4 0 17.70	3.08
	Rumker 1110	47	7.0	9.3	10.6	20.5	21.5	22.8	24.1	25.2	35.3	36.4	38.5	5 22.84	0.15	21.94	4 5 1.05	3.10
	A Eridani	48	16.7	18.8	19.8	29.7	30.7	32.0	33.1	34.1	43.9	45.0	47.2	8 31.91	0.13	21.93	4 8 10.11	2.55
	γ Tauri	49	27.0	29.3	30.4	40.4	41.4	42.6	43.8	44.9	55.0	56.1	58.2	12 42.65	0.14	21.93	4 12 20.86	3.06
	55 Persei	50	3.6	6.1	7.6	19.1	20.3	21.8	23.2	24.4	35.9	37.2	39.6	16 21.71	0.18	21.93	4 15 59.96	3.37
	Weisse (2) 420	51	32.2	34.4	35.7	46.2	47.3	48.6	49.9	51.0	1.5	2.7	5.0	20 48.59	+ 0.16	−21.92	4 20 26.83	+ 3.18

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Jan. 13, 4.8	− 23.00	0.000	+ 0.16	+ 0.15
16, 4.0	− 21.94	+ 0.048	+ 0.03	+ 0.13

12. Not a good observation.
17. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANST. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 16	Weisse 471	1	15.5	17.6	18.8	28.6	29.5	30.8	32.0	33.1	42.9	43.9	46.0	23 30.79	+ 0.13	−21.92	4 23 9.00	+ 2.46
Y.	Weisse 533	2	38.3	40.5	41.5	51.4	52.5	53.8	55.0	56.1	6.2	7.3	9.4	26 53.82	0.14	21.92	4 26 32.04	2.99
	Weisse (2) 618	3	18.1	20.2	21.3	31.3	32.4	33.7	34.8	36.0	46.0	47.1	49.3	29 33.65	0.14	21.92	4 29 11.87	3.00
	*−27° 2′	4	28.7	. .	32.4	43.1	44.2	45.6	47.0	48.3	59.0	. .	2.6	32 45.66	0.13	21.92	4 32 23.87	1.91
	*− 1° 41′	5	39.0	41.3	42.2	51.9	53.0	54.1	55.2	56.3	6.0	7.1	9.1	36 54.11	0.13	21.91	4 36 32.33	2.61
	*+10° 45′	6	. .	. .	. .	33.5	34.7	35.9	37.1	38.2	. .	. .	. .	41 35.88	0.14	21.91	4 41 14.11	2.86
	*+10° 45′	7	22.3	24.3	25.5	. .	. .	. .	. .	. .	49.6	50.8	52.8	41 37.55	+ 0.14	21.91	4 41 15.78	2.86
	*+10° 45′	8	6.2	7.5	8.9	9.9	12.1	. .	13.2	15.8	17.2	18.4	19.6	41 42.88	− 0.21	21.91	4 41 20.76	2.86
	Weisse 926	9	3.8	6.0	7.1	17.1	18.2	19.3	20.5	21.5	31.4	32.4	34.5	44 19.25	+ 0.14	21.91	4 43 57.48	2.86
	ι Aurigæ	10	32.3	34.9	36.2	47.7	48.8	50.3	51.7	52.8	4.4	5.6	8.1	48 50.25	0.18	21.90	4 48 28.53	3.29
	*+38° 36′	11	25.5	28.2	29.7	41.5	42.7	44.7	46.4	47.7	0.2	1.5	3.9	52 44.73	0.19	21.90	4 52 23.02	3.39
	*+45° 11′	12	38.2	40.9	42.6	56.4	57.8	59.3	0.9	2.6	16.0	17.5	20.3	57 59.32	0.22	21.89	4 57 37.65	3.52
	O. Arg. S. 3662	13	57.6	59.9	1.2	12.0	13.1	14.4	15.8	17.1	27.7	28.9	31.2	1 14.45	0.13	21.89	5 0 52.69	1.74
	*+30° 14′	14	29.0	31.6	32.8	44.0	45.2	46.5	47.8	49.0	0.0	1.2	3.6	8 46.43	0.17	21.89	5 8 24.71	3.18
	*+30° 14′	15	10.8	13.3	14.6	25.5	26.8	28.1	29.6	30.9	42.0	43.2	45.6	10 28.22	0.17	21.88	5 10 6.51	3.18
	*+37° 34′	16	43.5	46.1	47.3	59.7	0.9	2.5	4.0	5.2	17.5	18.7	21.4	14 2.44	0.19	21.88	5 13 40.75	3.33
	*+38° 57′	17	47.7	50.6	51.8	4.4	5.6	7.0	8.4	9.6	22.4	23.8	26.4	19 7.06	0.19	21.88	5 18 45.37	3.35
	Groombridge 980	18	30.8	33.5	34.9	47.1	48.4	49.9	51.4	52.8	4.9	6.3	9.0	22 49.91	0.19	21.87	5 22 28.23	3.33
	δ Orionis	†19	26.2	28.4	29.4	39.1	40.0	41.2	42.4	43.4	53.0	54.1	56.0	25 41.20	+ 0.13	21.87	5 25 19.46	2.46
20	γ Tauri	20	. .	. .	. .	25.4	26.5	27.7	28.9	30.0	40.0	41.1	43.1	12 32.84	− 5.05	7.06	. . . .	3.10
E.	Weisse 1220	21	38.7	40.7	41.9	51.5	52.5	53.6	54.8	55.9	5.5	6.5	8.5	49 53.65	+ 0.09	7.02	5 49 46.72	2.30
	*+19° 46′	22	35.8	37.9	39.3	49.4	50.5	51.7	53.0	54.1	4.5	5.5	7.9	51 51.78	0.12	7.02	5 51 44.88	2.88
	Weisse (2) 1795	23	4.9	7.2	8.6	29.4	30.4	31.6	32.9	34.2	45.0	46.2	48.4	55 31.71	0.13	7.02	5 55 24.82	3.02
	*+20° 7′	24	47.4	49.8	51.4	1.0	2.1	3.4	4.6	5.7	16.0	17.1	19.3	58 3.44	0.12	7.02	5 57 56.54	2.87
	Weisse 55	25	30.5	32.6	33.9	43.4	44.5	45.7	46.7	47.9	57.6	58.7	0.8	3 45.66	0.08	7.01	6 3 38.73	2.10
	Weisse 73	26	3.8	5.8	7.2	16.8	17.8	19.0	20.3	21.4	31.0	32.2	34.3	4 19.05	0.08	7.01	6 4 12.12	2.10
	*−6° 14′	27	20.8	22.9	23.9	33.4	34.4	35.6	37.0	38.1	47.6	48.6	50.6	8 35.72	+ 0.08	7.01	6 8 28.79	+ 2.18
	δ Ursæ Min., S. P.	28	. .	. .	. .	50.5	9.0	28.5	49.0	6.0	. .	. .	. .	14 28.60	− 2.46	7.01	. . . .	− 2.74
	*+24° 18′	29	44.7	47.0	48.3	58.5	59.7	1.1	2.2	3.4	14.0	15.4	17.5	19 1.07	+ 0.13	7.00	6 18 54.20	+ 2.92
	*−25° 48′	30	41.7	43.9	45.4	55.9	57.0	58.3	59.6	0.8	11.6	12.8	15.0	22 58.36	0.07	7.00	6 22 51.43	1.42
	*−25° 48′	31	39.3	41.6	43.0	. .	. .	. .	. .	. .	9.3	10.4	12.9	23 56.08	0.07	7.00	6 23 49.15	1.42
	*−25° 48′	32	. .	. .	. .	4.5	5.8	7.1	8.4	9.6	. .	. .	. .	24 7.08	0.07	7.00	6 24 0.15	1.42
	*+37° 49′	33	. .	. .	. .	30.3	31.5	33.0	34.6	36.0	. .	. .	. .	26 33.08	+ 0.16	7.00	6 26 26.24	3.23
	*+37° 49′	34	. .	. .	. .	. .	. .	. .	. .	. .	48.3	49.6	52.2	26 50.03	− 16.63	7.00	6 26 26.40	3.23
	α Canis Majoris	35	. .	. .	. .	27.9	29.0	30.4	31.6	32 7	. .	. .	. .	39 30.32	+ 0.07	6.99	. . . .	1.74
22	B. A. C. 1054	36	29.0	31.1	32.5	43.2	44.4	45.6	46.9	48.1	58.7	59.8	2.3	16 45.60	0.08	7.42	3 16 38.26	2.65
	Weisse 334	37	57.9	59.8	1.0	10.9	12.0	13.1	14.4	15.5	25.3	26.4	28.5	20 13.16	0.10	7.42	3 20 5.84	3.27
	Lacaille 1114	38	55.0	57.3	58.5	. .	10.0	11.3	12.6	. .	24.1	25.3	27.5	24 11.29	0.08	7.42	3 24 3.95	2.65
	O. Arg. S. 2343	39	38.7	40.9	42.2	52.8	53.8	55.2	56.5	57.7	8.4	9.5	11.7	26 55.22	0.08	7.42	3 26 47.88	2.55
	B. A. C. 1123	40	. .	. .	. .	41.4	42.5	44.0	45.5	46.7	. .	. .	. .	32 44.02	0.14	7.42	3 32 36.74	3.61
	16 Tauri	41	52.2	54.5	55.7	6.2	7.3	8.5	9.9	11.0	21.6	22.7	25.0	37 8.60	0.12	7.42	3 37 1.30	3.40
	20 Tauri	42	53.2	55.5	56.7	7.2	8.3	9.6	10.9	12.2	22.5	23.7	26.0	38 9.62	0.12	7.42	3 38 2.32	3.38
	Lalande 7069	43	32.3	34.3	35.4	45.3	46.3	47.3	48.5	49.5	59.4	0.5	2.7	42 47.41	0.10	7.42	3 42 40.09	3.12
	ζ Persei	44	44.0	46.7	47.9	59.2	0.4	1.6	3.0	4.3	15.5	16.8	19.2	46 1.69	0.13	7.41	. . . .	3.48
	B. A. C. 1222	45	43.2	45.6	47.0	57.7	58.9	0.2	1.6	2.8	3.6	4.9	7.2	49 0.25	0.08	7.41	3 48 52.92	2.31
	Weisse 975	46	4.7	6.8	8.0	18.0	19.1	20.3	21.4	22.5	32.5	33.5	35.7	50 20.23	0.10	7.41	3 51 12.92	3.18
	Weisse 24	47	9.0	11.2	12.3	22.5	23.4	24.5	25.5	26.8	36.8	37.9	40.1	3 24.55	0.10	7.41	4 3 17.24	3.14
	*− 6° 54′	†48	. .	. .	. .	12.4	13.3	14.2	15.4	16.7	. .	. .	. .	6 14.40	0.09	7.41	4 6 7.08	2.71
	*+20° 12′	49	27.0	29.0	30.1	40.4	41.5	42.7	44.0	45.1	55.5	56.5	58.8	9 42.78	0.11	7.41	4 9 35.48	3.21
	γ Tauri	50	12.4	14.5	15.8	25.7	26.7	28.0	29.3	30.3	40.4	41.4	43 4	12 27.99	+ 0.11	− 7.41	. . . .	+ 3.12

19. Unsteady.
48. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Jan. 20, 5.4	− 7.03	+ 0.028	+ 0.06	+ 0.09
22, 4.0	− 7.41	+ 0.018	+ 0.04	+ 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 22 E.	63 Tauri	1	46.3	48.4	49.7	59.6	0.6	1.8	3.1	4.2	14.2	15.3	17.5	16 1.88	+ 0.11	− 7.41	4 15 54.58	+ 3.11
	Weisse (2) 387 .	2	45.2	47.4	48.5	58.5	59.6	0.9	2.1	3.2	. .	. .	. .	18 55.68	+ 5.30	7.40	4 18 53.58	3.11
	Weisse (2) 391 .	3	. .	. .	. .	14.1	15.5	16.6	17.9	18.9	28.9	30.0	32.1	19 21.75	− 5.08	7.40	4 19 9.27	3.11
	Weisse 572 . .	4	36.0	38.1	39.2	48.9	49.9	51.1	52.3	53.3	2.9	3.9	6.0	27 51.05	+ 0.08	7.40	4 27 43.73	2.75
	Weisse 646 . .	5	43.7	45.9	47.0	6.5	7.5	8.8	0.0	1.1	10.7	11.8	14.0	30 8.82	0.09	7.40	4 30 1.51	2.88
26 Y.	α Arietis	6	30.8	33.1	34.3	44.6	45.8	47.1	48.4	49.5	0.0	1.1	3.3	59 47.09	0.10	0.02	1 59 47.17	3.78
	20 Arietis	7	59.2	1.6	3.0	13.4	14.5	15.9	17.2	18.4	29.1	30.2	32.5	8 15.91	+ 0.11	0.02	2 8 16.00	3.76
	Lalande 4342 . .	8	. .	. .	. .	39.3	40.5	43.1	2.2	5.2	6.9	8.4	9.9	14 56.94	− 32.48	0.02	2 14 24.44	3.87
	Weisse 305 . .	9	28.4	30.7	31.7	. .	. .	. .	. .	. .	55.8	56.8	59.0	19 43.73	+ 0.09	0.02	2 19 43.80	3.58
	Weisse 306 . .	10	. .	. .	. .	44.1	45.1	46.3	47.6	48.6	. .	. .	. .	19 46.34	0.09	0.02	2 19 46.41	3.58
	Weisse (2) 587 .	11	40.8	43.0	44.1	54.4	55.5	56.8	58.1	59.2	9.7	10.8	13.0	24 56.85	0.10	0.02	2 24 56.93	3.67
	Weisse 455 . .	12	3.4	5.6	6.7	16.3	17.2	18.5	19.7	20.8	30.4	31.4	33.5	28 18.50	0.08	0.02	2 28 18.56	3.78
	Weisse (2) 815 .	13	16.5	18.8	20.0	30.6	31.6	33.0	34.2	35.5	45.9	47.0	49.4	34 32.95	0.11	0.02	2 34 33.04	3.66
	O. Arg. S. 1834 .	14	49.8	52.0	53.3	4.1	5.3	6.5	7.8	9.0	19.6	20.6	23.2	43 6.47	0.07	0.02	2 43 6.52	3.04
	Lalande 5315 . .	15	40.6	42.9	44.0	54.5	55.6	56.8	58.0	59.3	9.7	11.2	13.3	44 56.90	0.07	0.02	2 44 56.95	3.05
	Weisse 855 . .	16	41.4	43.6	44.7	54.6	55.7	56.9	58.1	59.2	9.2	10.2	12.3	49 56.90	0.09	0.02	2 49 56.97	3.49
	*+14° 41′ . . .	17	. .	. .	. .	52.1	53.1	54.2	55.5	56.6	. .	. .	. .	51 54.30	+ 0.09	0.02	2 51 54.37	3.48
	*+14° 39′ . . .	18	. .	. .	. .	12.9	14.0	16.2	31.9	34.5	35.5	37.0	38.3	52 27.54	− 26.80	0.02	2 52 0.72	3.48
	α Ceti	19	. .	. .	. .	23.6	24.5	25.7	26.8	27.9	37.7	38.8	40.8	55 30.73	− 4.91	0.02	2 55 25.80	3.33
	Lacaille 981 . .	20	52.7	55.1	56.3	7.7	8.9	10.1	11.5	12.8	24.0	25.1	27.5	1 10.15	+ 0.07	0.02	3 1 10.20	2.77
	12 Eridani . . .	†21	12.8	15.4	16.4	27.7	28.8	30.0	31.4	32.5	43.8	45.0	47.6	6 30.13	0.07	0.02	3 6 30.18	2.74
	Weisse (2) 209 .	22	22.9	25.2	26.4	36.8	38.0	39.4	40.7	41.9	52.3	53.4	55.6	10 39.33	0.11	0.02	3 10 39.42	3.53
	τ^4 Eridani . . .	23	25.0	. .	28.3	38.9	39.9	41.2	42.5	43.7	54.0	. .	57.3	13 41.20	0.07	0.02	3 13 41.25	2.83
	65 Arietis	24	37.0	39.3	40.5	50.7	51.7	53.0	54.2	55.4	5.7	6.8	9.0	16 53.03	0.10	0.02	3 16 53.11	3.46
	*+12° 17′ . . .	25	52.3	54.6	55.7	. .	. .	. .	. .	. .	19.8	21.0	23.2	21 7.77	0.09	0.02	3 21 7.84	3.32
	7 Tauri	26	24.8	27.2	28.4	38.8	39.9	41.2	42.6	43.6	54.4	55.5	57.7	26 41.28	0.11	0.02	3 26 41.37	3.48
	*+27° 43′ . . .	†27	. .	. .	. .	16.1	17.4	18.8	20.1	21.5	. .	. .	. .	30 18.78	0.11	0.02	3 30 18.87	3.52
	Weisse (2) 721 .	28	38.3	40.6	41.8	52.0	53.1	54 4	55.6	56.7	6.9	8.1	10.2	33 54.34	+ 0.10	0.02	3 33 54.42	3.37
	16 Tauri	29	. .	. .	. .	58.9	59.8	1.3	2.5	3.5	14.2	15.3	17.6	37 6.64	− 5.34	0.02	3 37 1.28	3.44
	20 Tauri	30	45.7	47.9	49.1	59.7	0.9	2.1	3.4	4.5	15.1	16.3	18.5	38 2.11	+ 0.11	0.02	3 38 2.20	3.43
	B. A. C. 1171 . .	31	25.8	28.1	29.3	39.9	40.9	42.2	43.5	44.6	55.1	56.3	58.6	40 42.21	0.11	0.02	3 40 42.30	3.43
	31 Pleiadum . . .	32	12.3	14.4	15.6	26.2	27.2	28.6	29.9	30.9	41.5	42.7	44.9	41 28.56	0.11	0.02	3 41 28.65	3.43
	B. A. C. 1182 . .	33	17.2	19.5	20.6	. .	32.3	33.6	34.9	. .	46.6	47.7	49.9	41 33.59	0.11	0.02	3 41 33.68	3.43
	Lalande 7184 . .	34	42.9	45.3	46.5	56.9	57.9	59.3	0.6	1.7	12.2	13.3	15.5	46 59.28	0.11	0.02	3 46 59.37	3.39
	ξ Persei	35	10.0	12.5	13.8	25.8	26.9	28.5	29.9	31.1	43.0	44.2	46.8	50 28.41	0.13	0.02	3 50 28.52	3.60
	B. A. C. 1235 . .	36	24.0	49.5	2.5	58.0	9.0	24.0	38.0	50.5	45.0	57.0	22.0	56 23.59	1.43	0.02	3 56 25.00	9.71
	μ Persei	37	55.2	58.4	59.9	14.3	16.0	17.8	19.5	21.0	35.5	37.0	40.3	5 17.72	0.16	0.02	4 5 17.86	3.85
	γ Tauri	38	5.0	7.2	8.3	18.4	19.4	20.6	21.9	22.9	32.9	34.0	36.2	12 20.62	0.10	0.02	4 12 20.70	3.17
	55 Persei	39	41.6	44.0	45.4	57.0	58.2	59.7	1.1	2.4	14.0	15.2	17.6	15 59.65	0.12	0.02	4 15 59.75	3.50
	δ Tauri	40	50.2	52.4	53.6	3.6	4.5	5.8	7.0	8.1	18.0	19.2	21.4	21 5.80	0.10	0.02	4 21 5.88	3.13
	α Tauri	†41	8.9	11.1	12.2	22.3	23.3	24.6	25.9	26.9	36.8	37.9	40.1	28 24.55	0.10	− 0.02	4 28 24.63	3.12
28	O. Arg. S. 1555 .	42	2.2	4.5	5.8	. .	. .	. .	. .	. .	. .	. .	. .	20 4.17	14.64	+ 0.04	2 20 18.85	3.30
	*+37° 36′ . . .	43	55.1	57.8	59.0	11.3	12.5	14.0	15.5	16.9	29.2	30.4	33.0	35 14.06	0.13	0.04	2 35 14.23	3.87
	π Ceti	44	37.3	39.4	40.5	50.6	51.7	52.8	54.0	55.2	5.1	6.2	8.4	37 52.84	+ 0.07	0.04	2 37 52.95	3.26
	η Persei	45	. .	. .	. .	5.5	7.2	9.4	11.4	13.2	30.2	32.0	35.7	41 18.08	− 8.55	0.04	2 41 9.57	4.24
	*+38° 17′ . . .	46	8.6	11.3	12.7	25.0	26.3	27.9	29.2	30.7	. .	. .	. .	50 21.46	+ 6.47	0.04	2 50 27.97	3.85
	24 Persei	47	. .	. .	. .	11.3	12.5	15.1	33.5	36.5	38.1	39.6	41.2	51 28.48	− 31.49	0.04	2 50 57.03	3.79
	α Ceti	48	10.6	12.7	13.8	23.5	24.5	25.6	26.8	27.9	37.5	38.6	40.6	55 25.65	+ 0.08	0.04	. . . .	3.36
	Weisse 1069 . .	49	39.4	41.5	42.6	52.2	53.2	54.5	55.6	56.6	6.3	7.3	9.4	0 54.42	0.08	0.04	3 0 54.54	3.30
	Weisse 20 . . .	50	14.2	16.3	17.5	27.3	28.3	29.5	30.7	31.8	41.6	42.7	43.8	3 29.43	0.09	0.04	3 3 29.56	3.42
	Weisse 95 . . .	51	24.9	27.0	28.1	37.7	38.7	40.0	41.1	42.1	51.8	52.9	54.8	6 39.92	+ 0.08	+ 0.05	3 6 40.05	+ 3.29

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Jan. 26, 3.4	− 0.02	+ 0.002	+ 0.04	+ 0.08

21. Blurred.
27. Faint.
41. Unsteady.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 28	Weisse (2) 173 . .	1	57.2	0.0	1.4	13.8	15.0	16.7	18.1	19.5	31.9	33.2	35.8	9 16.60	+ 0.14	+ 0.05	3 9 16.79	+ 3.82
Y.	Weisse (2) 255 . .	2	27.8	30.0	31.1	41.0	42.1	43.4	44.6	45.7	55.8	56.9	58.9	12 43.39	0.10	0.05	3 12 43.54	3.43
	Weisse 233. . .	3	56.0	58.2	59.4	9.1	10.1	11.3	12.6	13.6	23.4	24.5	26.6	14 11.35	0.09	0.05	3 14 11.49	3.35
	Rumker, N. F., 875	4	46.7	48.9	50.0	59.8	0.9	2.1	3.3	4.4	14.2	15.3	17.5	23 2.10	+ 0.09	0.05	3 23 2.24	3.35
	Weisse (2) 469 . .	5	. .	. .	. .	. .	. .	. .	57.9	0.4	1.8	3.1	4.4	24 1.52	− 35.35	0.05	3 23 26.22	3.43
	Weisse (2) 493 . .	6	. .	. .	. .	12.7	13.8	14.9	16.1	17.3	27.4	28.5	30.7	24 20.18	5.14	0.05	3 24 15.09	3.43
	*+31° 17′ . .	7	. .	10.4	11.6	12.9	14.3	15.7	48.4	51.1	52.7	54.3	55.7	27 32.71	19.57	0.05	3 27 13.19	3.63
	B. A. C. 1101 . .	8	. .	26.6	27.8	29.2	30.6	31.7	4.5	7.3	8.8	10.4	11.7	27 48.86	− 19.56	0.05	3 27 29.35	3.63
	Weisse 569. . .	9	44.4	46.5	47.7	57.6	58.6	59.9	1.1	2.2	12.0	13.2	15.3	31 59.86	+ 0.09	0.05	3 32 0.00	3.32
	Weisse (2) 750 . .	10	. .	. .	. .	21.0	22.3	23.7	25.2	26.5	. .	. .	. .	35 23.74	0.13	0.05	3 35 23.92	3.73
	Weisse (2) 751. .	11	7.2	9.8	11.3	. .	. .	. .	. .	. .	41.4	42.7	45.3	35 26.28	0.13	0.05	3 35 26.46	3.73
	21 Tauri	12	50.0	52.3	53.5	4.0	5.1	6.4	7.7	8.8	. .	. .	. .	38 0.98	5.57	0.05	3 38 6.60	3.47
	22 Tauri	13	. .	. .	. .	12.4	13.5	14.8	16.1	17.3	. .	. .	. .	38 14.82	0.11	0.05	3 38 14.98	3.47
	*+24° 1′ . . .	14	6.0	8.4	9.6	20.2	21.2	22.4	23.8	25.0	. .	. .	. .	39 17.08	5.56	0.05	3 39 22.69	3.46
	*+24° 1′ . . .	15	. .	. .	. .	39.4	40.6	42.0	43.2	44.4	. .	. .	. .	39 41.92	0.11	0.05	3 39 42.08	3.46
	*+24° 1′ . . .	16	. .	. .	. .	23.4	24.5	25.8	27.0	28.1	. .	. .	. .	40 25.76	0.11	0.05	3 40 25.92	3.46
	B. A. C. 1171 . .	17	. .	. .	. .	39.8	40.9	42.2	43.4	44.7	. .	. .	. .	40 42.20	0.11	0.05	3 40 42.36	3.46
	31 Pleiadum . . .	18	12.0	14.4	15.6	26.0	27.1	28.5	29.8	31.0	41.6	42.6	45.0	41 28.51	0.11	0.05	3 41 28.67	3.46
	B. A. C. 1182 . .	19	17.0	19.3	20.5	. .	. .	. .	. .	. .	46.5	47.7	49.9	41 33.48	0.11	0.05	3 41 33.64	3.46
	37 Pleiadum . . .	20	. .	. .	. .	6.0	7.1	8.5	9.8	10.9	. .	. .	. .	42 8.46	0.11	0.05	3 42 8.62	3.45
	B. A. C. 1211 . .	21	. .	. .	. .	4.0	10.1	17.2	24.2	30.5	. .	. .	. .	48 17.20	0.71	0.05	3 48 17.96	6.78
	Weisse 975. . .	22	57.4	59.5	0.6	10.6	11.6	12.9	14.1	15.2	25.0	26.2	28.3	51 12.85	0.09	0.05	3 51 12.99	3.26
	B. A. C. 1235 . .	23	. .	. .	. .	56.0	7.5	22.0	36.0	48.0	. .	. .	. .	56 21.90	1.43	0.05	3 56 23.38	10.16
	Weisse (2) 22 . .	24	13.6	15.5	16.8	26.8	27.9	29.2	30.4	31.4	41.4	42.5	44.7	3 29.11	+ 0.10	0.05	4 3 29.26	3.23
	*−9° 9′. . . .	25	. .	. .	. .	. .	. .	. .	29.8	32.3	33.6	34.8	36.0	4 33.30	− 34.01	0.05	4 3 59.34	2.75
	Lalande 7819 . .	26	. .	. .	. .	41.2	42.3	44.4	59.8	2.4	3.6	4.9	6.1	4 55.59	− 26.27	0.05	4 4 29.37	2.75
	Weisse (2) 137 . .	27	42.0	44.8	46.4	59.9	1.2	3.0	4.5	6.0	19.5	21.0	23.7	9 2.91	+ 0.15	0.06	4 9 3.12	3.79
	Rumker 1163 . .	28	. .	. .	. .	0.6	1.7	2.9	4.2	5.3	. .	. .	. .	14 2.94	0.10	0.06	4 14 3.10	3.20
	Rumker 1167 . .	29	58.1	0.3	1.4	11.5	12.4	13.7	15.0	16.1	26.2	27.3	29.4	15 13.76	0.10	0.06	4 15 13.92	3.20
	63 Tauri	30	38.8	40.9	42.0	52.0	53.1	54.3	55.5	56.6	6.7	7.7	10.0	15 54.33	0.10	0.06	4 15 54.49	3.19
	Weisse (2) 391 . .	31	53.4	55.7	56.9	6.8	7.9	9.2	10.4	11.5	21.6	22.6	24.8	19 9.16	0.10	0.06	4 19 9.32	3.18
	Lalande 8455 . .	32	14.9	17.5	18.9	30.9	32.1	33.6	35.0	36.3	48.4	49.7	52.4	23 33.61	+ 0.13	0.06	4 23 33.80	3.57
	*+28° 27′ . . .	33	. .	. .	. .	45.7	47.0	49.4	6.7	9.4	10.8	12.2	13.6	26 1.85	− 29.48	0.06	4 25 32.43	3.39
	53 Eridani. . .	34	55.6	57.8	59.0	8.9	9.9	11.1	12.3	13.4	23.4	24.5	26.6	32 11.14	+ 0.07	0.06	4 32 11.27	2.45
	B. A. C. 1459 . .	35	57.1	0.9	2.8	19.6	21.5	23.6	25.7	27.5	44.4	46.4	49.9	37 23.58	0.20	0.06	4 37 23.84	4.04
	1 Aurigæ. . . .	36	47.3	49.8	51.4	3.3	4.4	5.9	7.5	8.9	21.0	22.3	24.8	41 6.05	0.13	0.06	4 41 6.24	3.53
	2 Aurigæ. . . .	37	33.7	36.3	37.6	49.5	50.7	52.3	53.7	55.0	7.1	8.4	11.0	43 52.30	0.13	0.06	4 43 52.49	3.69
	ι Aurigæ. . . .	38	10.3	12.8	14.2	25.6	26.8	28.3	29.7	30.8	42.4	43.6	46.0	48 28.23	0.12	0.06	. . . . .	3.41
	*+38° 36′ . . .	39	3.4	6.0	7.6	19.9	21.2	22.8	24.2	25.6	38.1	39.4	41.9	52 22.74	+ 0.14	0.06	4 52 22.94	+ 3.52
	ε Ursæ Min., S. P. .	40	. .	. .	. .	. .	. .	. .	4.0	19.5	28.9	39.2	47.7	3 27.86	− 5.19	0.06	. . . . .	− 0.34
	*+30° 14′ . . .	41	7.1	9.5	10.7	22.0	23.1	24.4	25.8	26.9	38.2	39.5	41.7	8 24.45	+ 0.12	0.06	5 8 24.63	+ 3.29
	*+30° 14′ . . .	42	48.9	51.2	52.4	3.7	4.8	6.2	7.5	8.6	19.8	21.1	23.5	10 6.15	+ 0.12	0.06	5 10 6.33	3.29
	Weisse (2) 430. .	43	56.4	57.8	59.6	1.3	3.9	. .	19.9	22.9	24.5	26.0	27.6	16 41.99	− 0.31	0.06	5 16 41.74	3.44
	Weisse (2) 431. .	44	22.7	25.4	26.7	39.0	40.2	41.8	43.2	44.6	56.7	58.0	0.7	16 41.73	+ 0.13	0.06	5 16 41.92	3.44
	*−13° 19′ . . .	45	. .	. .	. .	17.9	18.9	20.1	21.2	22.4	32.3	33.3	35.5	26 25.20	− 5.04	0.06	5 26 20.22	2.19
	*+26° 35′ . . .	46	. .	. .	. .	18.6	19.8	21.1	22.4	23.6	34.4	35.5	37.7	29 26.64	− 5.46	0.07	5 29 21.25	3.14
	*+26° 33′ . . .	47	10.8	13.2	14.3	25.1	26.2	27.6	28.8	30.0	40.9	42.0	44.3	33 27.56	+ 0.11	0.07	5 33 27.74	3.13
	*+35° 7′ . . .	48	. .	. .	. .	6.5	7.6	9.2	10.6	12.0	. .	. .	. .	39 9.18	+ 0.13	0.07	5 39 9.38	3.31
	Lalande 10871. .	49	. .	. .	. .	25.8	27.3	29.8	48.4	51.4	52.8	54.4	55.9	39 43.22	− 31.67	0.07	5 39 11.62	3.31
	Weisse 1220 . .	50	31.5	33.6	34.7	44.4	45.3	46.5	47.7	48.8	58.6	59.5	1.5	48 46.55	+ 0.08	+ 0.07	5 48 46.70	+ 2.35

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Jan. 28, 4.7	+ 0.06	+ 0.009	+ 0.04	+ 0.08

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Jan. 28	Weisse (2) 1621	1	56.2	58.6	59.7	10.2	11.1	12.5	13.8	15.0	25.4	26.5	28.7	50 12.52	+ 0.10	+ 0.07	5 50 12.69	+ 2.98
Y.	Weisse (2) 1795	2	7.7	10.1	11.4	22.1	23.2	24.6	25.9	27.0	37.8	39.0	41.3	55 24.55	0.11	0.07	5 55 24.73	3.06
	Rumker 1700	3	57.8	0.3	1.5	12.2	13.3	14.7	16.0	17.3	27.8	29.2	31.5	58 14.69	+ 0.11	0.07	5 58 14.87	3.06
	Weisse 55	4	. .	. .	. .	36.3	37.3	38.6	39.8	40.8	50.5	51.5	53.7	3 43.56	— 4.96	0.07	6 3 38.67	2.14
	Weisse 73	5	. .	. .	. .	9.5	10.6	11.8	13.0	14.0	23.9	25.0	26.9	4 16.84	— 4.96	0.07	6 4 11.95	+ 2.14
	δ Ursæ Minoris, S.P.	6	10.0	45.0	2.0	. .	. .	. .	. .	. .	. .	. .	. .	10 39.00	+ 3 41.93	0.07	. . . .	— 3.84
	μ Geminorum	7	46.5	48.8	49.8	0.3	1.3	2.6	3.8	5.1	5.4	6.6	8.9	15 2.65	0.10	0.07	. . . .	+ 2.93
30	30 Arietis	8	44.2	45.5	46.8	48.3	50.8	. .	56.5	58.9	0.1	1.9	3.1	29 23.61	+ 0.21	0.52	2 29 24.34	3.75
	B. A. C. 797	9	10.4	12.7	13.8	24.3	25.5	26.8	28.1	29.2	38.9	41.0	43.3	29 26.73	— 0.17	0.52	2 29 27.08	3.75
	γ Ceti	10	5.1	7.2	8.3	27.9	29.0	30.2	31.4	32.4	41.8	43.0	45.2	36 30.14	0.11	0.52	2 36 30.55	3.47
	24 Persei	11	38.3	40.9	42.1	53.9	55.1	56.5	58.0	59.2	10.8	12.2	14.8	50 56.53	0.21	0.53	2 50 56.85	3.83
	*+14° 41′	12	. .	. .	. .	12.5	13.6	15.8	31.0	33.2	34.5	36.0	37.2	52 26.72	26.58	0.53	2 52 0.67	3.54
	O. Arg. S. 2073	13	28.9	31.4	32.8	43.6	44.8	46.1	47.5	48.7	59.8	0.9	3.2	3 46.15	0.06	0.53	3 3 46.62	2.85
	Lacaille 996	14	. .	. .	. .	46.1	47.3	48.5	49.8	51.0	1.5	2.7	4.9	4 53.98	0.07	0.53	3 4 54.44	2.93
	*+12° 39′	15	. .	. .	. .	54.3	55.4	57.4	12.5	14.8	16.1	17.6	18.7	8 8.35	26.16	0.54	3 7 42.73	3.45
	O. Arg. S. 2173	16	8.9	11.1	12.2	22.4	23.6	24.8	25.9	27.0	37.4	38.4	40.5	11 24.75	0.08	0.54	3 11 25.21	2.96
	τ^4 Eridani	17	44.5	46.8	47.9	38.4	39.5	40.7	41.9	43.1	53.6	54.9	56.9	13 40.75	0.08	0.54	3 13 41.21	2.89
	Lacaille 1108	18	9.7	12.2	13.5	25.6	26.6	28.2	29.7	30.8	42.7	44.2	46.9	22 28.19	0.05	0.54	3 22 28.68	2.49
	Lacaille 1111	19	. .	. .	. .	4.7	6.0	7.5	9.0	10.4	22.4	23.7	26.3	23 13.75	— 6.22	0.54	3 23 8.07	2.48
	Weisse (2) 528	20	13.6	16.3	17.7	30.0	31.2	32.7	34.3	35.6	. .	. .	. .	26 26.42	+ 6.09	0.54	3 26 33.05	3.79
	*+38° 42′	21	. .	. .	. .	41.4	42.7	44.3	45.9	47.2	. .	. .	. .	31 44.30	— 0.23	0.55	3 31 44.62	3.79
	*+38° 42′	22	. .	. .	. .	56.2	57.4	58.9	0.2	1.5	. .	. .	. .	31 58.84	0.23	0.55	3 31 59.16	3.79
	*+38° 39′	23	. .	. .	. .	26.9	28.4	31.0	49.9	52.6	54.2	56.0	57.7	32 44.59	32.97	0.55	3 32 12.17	3.79
	Weisse (2) 669	24	. .	. .	. .	9.5	10.8	12.4	13.8	15.3	. .	. .	. .	32 12.36	0.23	0.55	3 32 12.68	3.79
	Rumker 952	25	. .	. .	. .	34.3	35.5	36.7	37.9	39.1	. .	. .	. .	36 36.70	0.17	0.55	3 36 37.08	3.51
	*+23° 40′ ±	26	49.2	51.5	52.7	3.2	4.3	5.7	7.0	8.1	18.5	19.6	22.0	37 5.62	0.17	0.55	3 37 6.00	3.50
	1 Pleiadum	27	. .	. .	. .	36.9	38.0	39.4	40.7	41.7	. .	. .	. .	37 39.34	0.17	0.55	3 37 39.72	3.49
	7 Pleiadum	28	. .	. .	. .	2.3	3.4	4.8	6.1	7.1	. .	. .	. .	38 4.74	0.17	0.55	3 38 5.12	3.49
	*+23° 42′	29	. .	. .	. .	49.7	50.8	52.1	53.4	54.5	. .	. .	. .	38 52.10	0.17	0.55	3 38 52.48	3.49
	*+23° 42′	30	12.8	15.0	16.2	. .	. .	. .	. .	. .	42.0	43.3	45.6	39 29.15	0.17	0.55	3 39 29.53	3.49
	18 Pleiadum	31	. .	. .	. .	29.5	30.7	31.9	33.2	34.4	. .	. .	. .	39 31.94	0.17	0.55	3 39 32.32	3.49
	24 Tauri	32	17.1	19.6	20.7	. .	. .	. .	. .	. .	46.5	47.7	50.0	39 33.60	0.17	0.55	3 39 33.98	3.49
	*+23° 43′ ±	33	. .	. .	. .	17.2	18.2	19.5	20.8	22.0	. .	. .	. .	40 19.54	0.17	0.55	3 40 19.92	3.49
	Rumker 989	34	. .	. .	. .	44.7	45.8	47.1	48.4	49.5	. .	. .	. .	40 47.10	0.17	0.55	3 40 47.48	3.49
	f Pleiadum	35	. .	. .	. .	19.7	21.0	22.3	23.5	24.6	. .	. .	. .	41 22.22	0.17	0.55	3 41 22.60	3.48
	h Pleiadum	36	7.1	9.3	10.5	. .	. .	. .	. .	. .	36.2	37.5	39.8	41 23.40	0.17	0.55	3 41 23.78	3.48
	B. A. C. 1211	37	. .	. .	. .	5.2	11.5	18.4	25.7	31.3	. .	. .	. .	48 18.42	1.30	0.55	3 48 17.67	6.97
	*−18° 56′	38	54.1	56.4	57.4	7.7	8.7	10.0	11.2	12.3	22.4	23.6	25.8	51 9.96	0.08	0.55	3 51 10.43	2.65
	O. Arg. S. 2710	39	49.9	52.2	53.4	4.5	5.7	6.8	8.2	9.4	20.5	21.6	24.0	54 6.93	0.06	0.55	3 54 7.42	2.37
	Lacaille 1326	40	43.1	45.5	46.9	58.6	59.9	1.4	2.9	4.1	15.8	17.1	19.7	57 1.36	0.06	0.55	3 57 1.85	2.16
	Lacaille 1346	41	8.5	10.9	12.1	23.4	24.6	26.0	27.5	28.7	39.8	41.2	43.5	0 26.02	0.06	0.56	4 0 26.52	2.21
	O. Arg. S. 2848	42	. .	. .	. .	27.1	28.4	29.5	31.0	32.1	42.6	43.8	46.3	3 35.10	5.58	0.56	4 3 30.08	2.40
	O. Arg. S. 2867	43	11.6	13.8	14.9	25.7	26.8	28.1	29.5	30.6	41.2	42.4	44.8	4 28.13	0.07	0.56	4 4 28.62	2.39
	Weisse 114	44	0.4	2.5	3.6	13.4	14.5	15.7	16.9	17.9	27.7	28.9	31.0	7 15.68	0.09	0.56	4 7 16.15	2.73
	o^2 Eridani	45	. .	. .	. .	26.2	27.3	29.4	44.3	46.4	47.7	49.1	50.4	9 40.10	25.91	0.56	4 9 14.75	2.78
	γ Tauri	46	4.6	6.8	7.9	17.7	18.9	20.2	21.5	22.5	32.4	33.6	35.8	12 20.17	0.15	0.56	4 12 20.58	3.22
	Weisse 286	47	2.7	4.9	6.0	15.9	16.9	18.2	19.5	20.6	30.4	31.6	33.8	15 18.23	0.14	0.56	4 15 18.65	3.19
	*−25° 42′	48	36.2	38.3	39.6	50.3	51.5	52.8	54.1	55.2	5.8	7.1	9.4	17 52.75	0.07	0.56	4 17 53.24	2.27
	B. A. C. 1374	49	. .	. .	. .	2.4	3.6	5.1	6.6	7.8	19.4	20.8	23.4	20 11.14	— 6.12	+ 0.56	4 20 5.58	+ 1.93

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	n	c
1869.	h.	s.	s.	s.	s.
Jan. 30,	4.6	+ 0.57	+ 0.023	— 0.11	— 0.11

January 30, 21h. Image east 0r.18. Clamp east.
Image west 0r.07. Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Jan. 30 Y.	O. Arg. S. 3108 .	1	24.8	27.0	28.3	38.7	39.8	41.1	42.4	43.5	53.8	54.9	57.4	22 41.06	— 0.07	+ 0.56	4 22 41.55	+ 2.30
	Lacaille 1483 .	2	. .	. .	. .	57.5	58.6	59.9	1.2	2.4	12.8	14.1	16.2	25 5.34	5.49	0.57	4 25 0.42	2.28
	*−26° 50′ .	3	44.2	46.5	47.6	58.4	59.5	0.8	2.2	3.4	14.1	15.4	17.7	31 0.89	0.07	0.57	4 31 1.39	2.13
	*−25° 54′ .	4	. .	. .	. .	2.6	3.8	6.2	22.5	25.0	26.4	27.7	29.2	35 17.92	28.50	0.57	4 34 49.99	2.13
	Lacaille 1568 .	5	. .	. .	. .	8.7	9.9	11.5	12.9	14.2	26.7	28.0	30.7	38 17.82	6.46	0.57	4 38 11.93	1.58
	O. Arg. S. 3383 .	6	11.9	14.3	15.5	26.2	27.4	28.9	30.2	31.2	42.0	43.2	45.5	41 28.76	0.07	0.57	4 41 29.26	2.06
	Lacaille 1611 .	7	. .	. .	. .	20.7	21.9	23.4	24.8	26.0	37.9	39.3	41.8	44 29.48	6.15	0.57	4 44 23.90	1.70
	Lacaille 1617 .	8	49.0	51.5	52.7	4.6	5.9	7.4	8.7	10.2	22.0	23.3	25.8	45 7.37	0.05	0.57	4 45 7.89	1.69
	o^2 Orionis. .	9	44.9	47.0	48.1	58.0	59.1	0.3	1.6	2.6	12.5	13.6	15.7	49 0.31	0.14	0.57	4 49 0.74	3.02
	Lalande 9474 .	10	17.7	20.0	21.2	31.8	32.9	34.3	35.5	36.6	47.4	48.5	50.8	54 34.25	0.07	0.57	4 54 34.75	2.01
	11 Orionis .	11	49.6	51.8	52.8	2.6	3.7	5.0	6.2	7.3	17.3	18.4	20.6	57 5.03	0.14	0.58	4 57 5.47	3.03
	O. Arg. S. 3662 .	12	35.3	37.7	38.8	49.5	50.7	52.0	53.3	54.4	5.2	6.5	8.9	0 52.03	0.07	0.58	5 0 52.54	1.91
	Weisse (2) 22 .	13	0.7	3.2	4.5	15.4	16.6	18.0	19.4	20.5	31.7	32.9	35.4	3 18.03	0.19	0.58	5 3 18.42	3.32
	B. A. C. 1641 .	14	46.5	49.0	50.4	2.2	3.4	4.9	6.2	7.6	19.3	20.6	23.1	11 4.84	0.05	0.58	5 11 5.37	1.49
	*−13° 19′ .	15	4.3	6.5	7.6	17.4	18.5	19.8	21.0	22.1	31.8	33.0	35.3	26 19.75	0.09	0.59	5 26 20.25	2.21
	*− 5° 43′ .	16	34.7	36.7	37.9	47.6	48.6	49.8	51.0	52.1	1.6	2.8	5.0	29 49.80	0.10	0.59	5 29 50.29	2.41
	*−13° 36′ .	17	. .	. .	. .	48.3	49.5	50.7	52.0	53.1	3.0	4.2	6.2	32 55.88	5.21	0.59	5 32 51.26	2.16
	*+38° 18′ .	18	. .	. .	. .	46.9	48.4	51.3	9.9	12.6	14.1	16.0	17.5	35 4.59	32.81	0.59	5 34 32.37	3.42
	Weisse (2) 1296 .	19	0.2	2.9	4.3	16.5	17.9	19.5	21.0	22.3	34.6	35.9	38.7	40 19.44	0.23	0.59	5 40 19.80	3.41
	Weisse (2) 1301 .	20	. .	. .	. .	54.5	56.0	58.6	17.4	20.1	21.6	23.5	24.9	41 12.08	32.98	0.59	5 40 39.69	3.41
	*+72° 27′ .	21	. .	. .	. .	59.9	3.1	7.2	11.0	14.5	. .	. .	. .	50 7.14	0.71	0.60	5 50 7.03	4.88
	*+72° 37′ .	22	. .	. .	. .	36.6	40.6	44.8	48.9	52.2	. .	. .	. .	50 44.62	0.72	0.60	5 50 44.50	4.89
	Weisse 1368 .	23	48.7	51.0	52.1	1.9	3.0	4.2	5.4	6.4	16.2	17.5	19.6	54 4.18	0.09	0.60	5 54 4.69	2.05
	Lalande 11471.	24	4.9	7.5	8.7	20.6	21.8	23.2	24.7	25.9	37.7	39.0	41.6	57 23.24	0.22	0.60	5 57 23.62	3.28
	*−23° 32′ .	25	. .	. .	. .	10.5	11.5	12.9	14.2	15.4	25.8	26.9	29.2	1 18.30	5.50	0.60	6 1 13.40	1.68
	*+38° 53′ .	26	46.7	49.4	50.6	3.0	4.4	6.0	7.4	8.6	21.1	22.5	25.1	7 5.89	0.23	0.61	6 7 6.27	3.34
	B. A. C. 2021 .	27	49.8	52.3	53.7	5.4	6.7	8.1	9.7	10.8	22.6	24.0	26.6	10 8.15	— 0.22	0.61	6 10 8.54	+ 3.24
	δ Ursæ Min., S. P. .	28	. .	. .	. .	39.5	56.0	16.5	36.0	54.0	. .	. .	. .	14 16.40	+ 3.70	0.61	. . . .	— 4.27
	Lalande 12237 .	29	44.8	47.0	48.1	58.9	0.1	1.4	2.7	3.8	14.4	15.7	17.9	18 1.35	— 0.18	0.61	6 18 1.78	+ 2.99
	O. Arg. S. 5176 .	30	34.1	36.5	37.7	48.4	49.6	50.9	52.2	53.4	. .	. .	. .	23 45.35	+ 5.46	0.61	6 23 51.42	1.49
	B. A. C. 2139 .	31	. .	. .	. .	29.9	31.4	32.8	34.4	35.6	48.0	49.4	52.0	27 39.19	— 6.59	0.61	6 27 33.21	3.27
	γ Geminorum .	32	53.4	55.5	56.7	6.5	7.6	8.9	10.1	11.3	21.3	22.5	24.6	30 8.95	0.15	0.61	6 30 9.41	2.76
	Lalande 12768 .	33	. .	. .	. .	12.1	13.5	14.9	16.3	17.5	28.8	30.1	32.7	33 20.74	6.11	0.61	6 33 15.24	3.11
	Lalande 12805 .	34	54.6	57.0	58.4	9.8	11.1	12.4	13.9	15.1	26.4	27.8	30.2	34 12.43	0.20	0.61	6 34 12.84	3.11
	*−14° 36′ .	35	. .	. .	. .	51.5	52.7	53.9	55.0	56.1	. .	. .	. .	37 53.84	0.09	0.62	6 37 54.37	1.87
	Weisse 1198 .	36	43.9	45.9	47.1	. .	. .	. .	. .	. .	11.6	12.7	14.9	37 59.35	0.09	0.62	6 37 59.88	1.87
	*−14° 35′ .	37	27.6	29.7	30.8	40.7	41.8	43.0	44.2	45.3	55.3	56.4	58.4	38 43.02	0.09	0.62	6 38 43.55	1.87
	Weisse 1199 .	38	48.2	50.3	51.4	1.4	2.4	3.6	4.8	5.8	15.8	16.9	19.2	40 3.62	0.09	0.62	6 40 4.15	1.87
	60 Aurigæ .	39	55.4	58.0	59.4	11.7	13.0	14.6	16.3	17.5	29.7	31.1	33.9	44 14.60	0.23	0.62	6 44 14.99	3.22
	61 Aurigæ .	40	. .	41.8	43.2	55.6	56.8	58.4	0.0	1.3	13.6	15.0	. .	44 58.41	0.23	+ 0.62	6 44 58.80	3.22
Feb. 1 E.	Lalande 7931 .	41	. .	. .	. .	. .	. .	. .	0.5	2.8	4.0	5.6	6.9	8 3.96	36.07	— 0.08	4 7 27.81	2.45
	58 Tauri .	42	55.7	57.9	59.0	8.7	9.9	11.1	12.3	13.4	23.3	24.4	26.5	13 11.11	0.12	0.07	4 13 10.92	3.22
	Lacaille 1463 .	43	22.7	25.2	26.5	37.8	39.2	40.6	41.9	43.3	54.7	56.0	58.5	22 40.58	0.13	0.07	4 22 40.38	2.03
	α Tauri .	44	. .	. .	. .	37.1	38.3	40.4	55.7	57.9	59.3	0.7	1.8	28 51.40	26.76	0.07	. . . .	3.20
	Weisse (2) 694.	45	37.9	40.5	41.7	54.2	55.6	57.0	58.5	0.0	12.1	13.3	15.9	32 56.97	0.14	0.07	4 32 56.76	3.63
	Lalande 8870 .	46	46.5	48.8	50.0	0.3	1.5	2.7	3.9	4.9	15.5	16.6	18.9	36 2.69	0.12	0.06	4 36 2.51	3.39
	Weisse (2) 866 .	47	49.3	51.5	52.7	3.7	5.0	6.3	7.8	8.9	19.8	21.0	23.6	40 6.33	0.13	0.06	4 40 6.14	3.42
	*+29° 44′ .	48	. .	. .	. .	56.5	57.7	58.9	0.4	1.5	12.7	13.7	16.3	3 4.71	5.86	0.05	5 2 58.80	3.35
	B. A. C. 1641 .	49	47.4	49.8	51.0	2.9	4.2	5.6	7.0	8.4	20.3	21.5	24.0	11 5.65	— 0.14	— 0.05	5 11 5.46	+ 1.52

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Jan. 30, 4.6	+ 0.57	+ 0.023	— 0.11	— 0.11

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Corrections. Inst.	Corrections. Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 1	*+38° 56′ N. . .	1	. .	. .	. .	24.0	25.4	26.8	28.3	29.6	. .	. .	. .	18 26.82	− 0.14	− 0.05	5 18 26.63	+ 3.51
E.	*+38° 56′ S. . .	2	. .	. .	. .	40.3	41.7	43.1	44.8	46.2	. .	. .	. .	18 43.22	0.14	0.05	5 18 43.03	3.51
	δ Orionis . . .	3	. .	. .	. .	17.3	18.4	19.6	20.8	21.8	31.4	32.5	34.5	25 24.54	5.08	0.04	. . . .	2.58
	*+26° 34′ . . .	4	4.5	6.7	8.0	18.8	20.0	21.3	22.6	24.8	34.4	35.5	38.0	29 21.33	0.13	0.04	5 29 21.16	3.19
	*+26° 32′ . . .	5	11.0	13.3	14.5	25.2	26.4	27.8	29.2	30.3	41.0	42.3	44.5	33 27.77	− 0.13	0.04	5 33 27.60	3.17
	*+38° 8′ . . .	6	13.5	15.7	17.3	29.8	31.0	32.4	34.0	35.4	. .	. .	. .	35 26.14	+ 6.18	0.04	5 35 32.28	3.44
	*+38° 8′ . . .	7	. .	. .	. .	57.0	58.1	59.3	0.5	2.0	. .	. .	. .	35 59.38	− 0.14	0.04	5 35 59.20	3.44
	*+38° 8′ . . .	8	45.0	47.5	49.0	. .	. .	. .	. .	. .	18.7	19.8	22.7	36 3.78	0.14	0.04	5 36 3.60	3.44
	Weisse (2) 1296 .	9	. .	. .	. .	17.1	18.4	20.0	21.5	22.8	. .	. .	. .	40 19.96	0.14	0.04	5 40 19.78	3.44
	Weisse (2) 1301 .	10	. .	. .	. .	37.0	38.2	39.9	41.4	42.8	. .	. .	. .	40 39.86	0.14	0.04	5 40 39.68	3.44
	*+72° 26′ . . .	11	. .	. .	. .	0.4	3.8	7.3	11.2	14.1	. .	. .	. .	50 7.36	c.36	0.03	5 50 6.97	4.95
	*+72° 36′ . . .	12	. .	. .	. .	37.2	40.6	44.3	48.0	51.8	. .	. .	. .	50 44.38	0.36	0.03	5 50 43.99	4.97
	Lacaille 2094 . .	13	43.7	46.0	47.5	59.3	0.5	2.0	3.4	4.5	16.5	17.7	20.3	55 1.95	0.14	0.03	5 55 1.78	1.19
	Rumker 1700 . .	14	58.2	0.4	1.8	12.5	13.6	14.9	16.2	17.4	28.0	29.4	31.6	58 14.91	0.13	0.03	5 58 14.75	3.09
	*−23° 32′ . . .	15	57.4	59.5	0.5	11.2	12.3	13.5	14.8	16.0	26.3	27.5	30.0	1 13.55	− 0.12	0.03	6 1 13.40	+ 1.70
	δ Ursæ Minoris, S.P.	16	. .	. .	. .	41.0	59.0	20.0	40.0	56.5	. .	. .	. .	14 19.40	+ 1.86	0.02	. . . .	− 4.73
	*+24° 18′ . . .	17	. .	. .	. .	29.6	30.6	32.7	49.8	51.7	53.0	54.6	55.9	18 44.74	− 28.19	0.02	6 18 16.53	+ 2.90
	*+37° 49′ . . .	18	7.3	9.5	10.8	. .	. .	. .	. .	. .	40.9	42.2	44.9	26 25.93	0.14	0.02	6 26 25.77	3.27
	*+37° 49′ . . .	19	. .	. .	. .	23.4	24.8	26.3	27.9	29.5	. .	. .	. .	26 26.38	− 0.14	0.02	6 26 26.22	3.27
	Weisse (2) 809 .	20	19.3	21.3	22.6	32.6	34.0	35.6	37.1	38.1	. .	. .	. .	28 30.08	+ 5.35	0.02	6 28 35.41	2.95
	Weisse (2) 826 .	21	50.7	53.0	54.4	4.7	6.0	7.5	8.8	10.1	19.8	21.5	23.4	29 7.26	− 0.12	0.01	6 29 7.13	2.95
	γ Geminorum . .	22	. .	. .	. .	7.0	8.3	9.5	10.8	11.9	21.7	22.9	25.2	30 14.66	5.31	0.01	. . . .	2.77
4	ζ Arietis	23	6.7	9.0	10.1	20.6	21.7	22.8	24.0	25.2	35.3	36.6	38.9	7 22.81	0.15	0.35	. . . .	3.64
Y.	60 Arietis	24	23.6	26.0	27.2	37.7	38.9	40.3	41.6	42.7	53.2	54.6	56.9	12 40.25	0.16	0.35	3 12 39.74	3.69
	τ^2 Arietis	25	. .	. .	. .	11.1	12.3	13.4	14.7	15.8	25.9	27.3	29.5	15 18.75	5.45	0.35	3 15 12.95	3.60
	*+36° 58′ . . .	26	. .	. .	. .	24.5	25.7	27.1	28.7	30.0	. .	. .	. .	21 27.20	0.20	0.35	3 21 26.65	3.88
	Weisse (2) 420 .	27	11.2	13.7	15.2	. .	. .	. .	. .	. .	44.6	46.0	48.8	21 29.92	0.20	0.35	3 21 29.37	3.88
	Lacaille 1121 . .	28	54.0	56.4	57.5	8.6	9.9	11.1	12.5	13.6	14.6	15.8	18.2	25 11.11	0.08	0.35	3 25 10.68	2.75
	*−18° 59′ . . .	29	2.3	4.5	5.6	16.0	16.9	18.1	19.3	20.5	30.6	31.7	34.0	30 18.14	0.09	0.35	3 30 17.70	2.90
	Weisse (2) 750 .	30	5.2	7.8	9.4	21.3	22.7	24.3	25.8	27.0	39.2	40.6	43.3	35 24.24	− 0.20	0.35	3 35 23.69	3.86
	Weisse (2) 751 .	31	40.6	42.3	43.8	45.4	48.4	. .	4.5	7.2	8.7	10.5	12.0	35 26.34	+ 0.24	0.36	3 35 26.22	3.86
	19 Tauri	32	. .	. .	. .	22.8	24.0	25.3	26.6	27.7	38.1	39.3	41.7	37 30.69	− 5.61	0.36	3 37 24.72	3.58
	*+24° 4′ . . .	33	. .	. .	. .	44.6	45.8	47.2	48.5	49.5	. .	. .	. .	37 47.12	0.16	0.36	3 37 46.60	3.58
	21 Tauri	34	. .	. .	. .	4.2	5.3	6.9	8.1	9.3	. .	. .	. .	38 6.76	0.16	0.36	3 38 6.24	3.58
	22 Tauri	35	. .	. .	. .	12.8	14.0	15.3	16.7	17.8	. .	. .	. .	38 15.32	0.16	0.36	3 38 14.80	3.58
	B. A. C. 1163 . .	36	55.1	57.5	58.6	9.1	10.3	11.5	12.8	14.0	24.4	25.9	28.0	39 11.56	0.16	0.36	3 39 11.04	3.58
	*+23° 48′ . . .	37	. .	. .	. .	48.9	50.2	52.4	8.6	10.8	12.3	13.9	15.2	40 4.04	27.72	0.36	3 39 35.96	3.57
	*+23° 48′ . . .	38	. .	. .	. .	35.9	37.3	38.5	39.8	41.0	. .	. .	. .	41 38.50	0.16	0.36	3 41 37.98	3.57
	*+23° 48′ . . .	39	. .	. .	. .	56.2	57.3	58.6	59.8	0.9	. .	. .	. .	41 58.56	0.16	0.36	3 41 58.04	3.56
	*+23° 48′ . . .	40	. .	. .	. .	4.9	6.2	7.5	8.8	9.8	. .	. .	. .	42 7.44	0.16	0.36	3 42 6.92	3.56
	*+19° 43′ . . .	41	0.9	3.1	4.3	14.3	15.4	16.7	17.9	19.1	29.2	30.4	32.7	49 16.73	0.15	0.36	3 49 16.22	3.46
	Weisse 975 . .	42	57.7	59.9	0.9	10.8	11.9	13.2	14.5	15.5	25.3	26.5	28.7	51 13.17	0.15	0.36	3 51 12.66	3.36
	B. A. C. 1247 . .	†43	1.0	19.0	28.0	53.0	2.0	13.0	24.0	32.0	57.0	6.0	25.0	58 12.73	1.67	0.36	3 58 10.70	9.55
	μ Persei	44	55.7	59.0	0.4	14.7	16.3	18.1	20.0	21.5	35.7	37.4	40.7	5 18.14	0.26	0.36	4 5 17.52	4.05
	Weisse (2) 137 .	45	42.5	45.3	46.9	0.3	1.7	3.4	5.0	6.5	19 7	21.2	24.6	9 3.37	0.24	0.36	4 9 2.77	3.93
	B. A. C. 1327 . .	46	. .	37.4	38.6	50.2	52.5	54.0	55.6	56.8	9.4	10.8	. .	11 53.92	0.08	0.36	4 11 53.48	1.95
	Rumker 1163 . .	47	. .	. .	. .	. .	. .	. .	34.2	36.5	37.8	39.2	40.5	14 37.64	34.52	0.36	4 14 2.76	3.30
	Rumker 1167 . .	48	58.6	0.7	1.9	11.8	13.0	14.2	15.5	16.6	26.5	27.7	29.7	15 14.20	0.14	0.36	4 15 13.70	3.29
	B. A. C. 1351 . .	49	39.2	41.3	42.5	52.5	53.6	54.8	56.0	57.1	7.0	8.3	10.5	15 54.80	0.14	0.36	4 15 54.30	3.29
	Weisse (2) 391 .	50	54.0	56.2	57.2	7.4	8.4	9.6	10.8	12.0	22.0	23.2	25.2	19 9.64	− 0.14	− 0.36	4 19 9.14	+ 3.28

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	n	c
1869.	h.	s.	s.	s.	s.
Feb. 1,	5.5	− 0.04	+ 0.026	0.00	− 0.11
4,	4.0	− 0.36	− 0.010	− 0.08	− 0.11

43. Observed with eye and ear.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 4	*+16° 28′ . . .	1	56.2	58.2	59.4	9.7	10.6	11.9	13.2	14.2	24.2	25.3	27.6	20 11.86	− 0.14	− 0.36	4 20 11.36	+ 3.28
Y.	*+15° 42′ ± . .	2	5.8	8.0	9.1	19.0	20.2	21.4	22.6	23.6	33.6	34.8	37.0	25 21.37	0.14	0.36	4 25 20.87	3.23
	*+ 5° 54′ . . .	3	19.1	21.2	22.3	. .	. .	. .	. .	. .	46.1	47.1	49.4	29 34.20	0.12	0.36	4 29 33.72	3.02
	c^2 Tauri	4	31.0	33.4	34.4	44.4	45.5	46.6	47.9	49.0	58.7	59.9	2.0	32 46.62	0.13	0.37	4 32 46.12	3.13
	*−23° 26′ . . .	5	35.1	37.3	38.4	48.8	50.0	51.3	52.6	53.7	4.2	5.4	7.7	36 51.32	0.09	0.37	4 36 50.86	2.28
	Weisse (2) 886. .	6	20.9	23.3	24.5	35.2	36.3	37.6	38.8	39.9	50.6	51.7	54.0	40 37.53	0.16	0.37	4 40 37.00	3.35
	Weisse (2) 904. .	7	. .	. .	. .	11.7	12.8	14.2	15.5	16.6	. .	. .	. .	41 14.16	0.16	0.37	4 41 13.63	3.35
	Lacaille 1617 . .	8	49.7	52.5	53.7	5.6	6.7	8.1	9.6	10.9	22.8	24.2	26.7	45 8.23	0.08	0.37	4 45 7.78	1.78
	ι Aurigæ. . . .	9	10.8	13.5	14.7	26.2	27.4	28.9	30.3	31.5	42.9	44.3	46.8	48 28.85	0.18	0.37	. . . .	3.52
	Weisse (2) 49 . .	10	57.3	59.6	0.9	12.0	13.3	14.5	16.0	17.1	28.3	29.7	32.0	4 14.61	0.17	0.37	5 4 14.07	3.39
	*+30° 17′ . . .	11	. .	. .	. .	38.1	39.3	40.6	42.0	43.4	. .	. .	. .	5 40.68	0.17	0.37	5 5 40.14	3.39
	Weisse (2) 111. .	12	. .	. .	. .	50.4	51.6	53.0	54.4	55.6	. .	. .	. .	5 53.00	0.17	0.37	5 5 52.46	3.39
	Weisse (2) 296. .	13	. .	. .	. .	53.9	55.0	57.5	14.0	16.3	17.5	19.2	20.4	12 9.22	28.64	0.37	5 11 40.21	3.27
	*+37° 33′ . . .	14	22.0	24.9	26.0	38.3	39.5	40.9	42.6	43.9	56.0	57.4	0.0	13 41.05	0.20	0.37	5 13 40.48	3.54
	Weisse (2) 430. .	15	23.1	25.9	27.0	. .	. .	. .	. .	. .	57.0	58.3	1.0	16 42.05	0.20	0.37	5 16 41.48	3.54
	Weisse (2) 431. .	16	. .	. .	. .	39.4	40.8	42.4	43.8	45.1	. .	. .	. .	16 42.30	0.20	0.37	5 16 41.73	3.54
	Weisse (2) 530. .	17	. .	. .	. .	45.0	46.3	47.6	49.0	50.2	1.3	2.7	5.1	19 53.40	5.94	0.37	5 19 47.09	3.35
	*−26° 41′ . . .	18	. .	. .	. .	15.3	16.4	17.6	19.0	20.2	31.1	32.3	34.6	23 23.31	28.70	0.37	5 22 54.24	1.84
	Lalande 10567 .	19	14.8	16.7	17.7	27.5	28.7	29.9	31.1	32.1	41.5	42.7	44.8	29 29.77	0.10	0.37	5 29 29.30	2.46
	*−5° 44′ . . .	20	. .	. .	. .	2.7	3.7	5.7	20.6	22.8	23.9	25.5	26.7	30 16.45	25.81	0.37	5 29 50.27	2.46
	*−13° 37′ . . .	21	36.2	38.3	39.5	49.4	50.5	51.7	52.9	53.9	3.9	4.9	7.2	32 51.67	0.10	0.38	5 32 51.19	2.22
	*+29° 42′ . . .	22	16.8	19.1	20.5	31.5	32.6	34.0	35.3	36.5	47.6	48.8	51.3	40 34.00	0.17	0.38	5 40 33.45	3.25
	Weisse (2) 1325 .	†23	. .	. .	. .	. .	. .	. .	. .	. .	11.8	13.0	15.4	41 13.40	17.46	0.38	5 40 55.56	3.25
	139 Tauri	24	36.4	38.7	39.9	50.7	51.8	53.1	54.5	55.6	6.3	7.4	9.6	49 53.09	0.16	0.38	5 49 52.55	3.13
5	Lacaille 1121 . .	25	55.0	56.9	58.3	9.0	10.3	11.7	13.0	14.3	25.1	26.4	28.8	25 11.71	0.08	0.85	3 25 10.78	2.77
E.	*−26° 5′ . . .	26	. .	. .	. .	52.5	53.7	54.8	56.2	57.4	. .	. .	. .	25 54.92	0.08	0.85	3 25 53.99	2.81
	*+13° 21′ . . .	27	6.3	8.5	9.6	19.5	20.6	21.7	22.9	24.0	33.9	35.2	37.3	35 21.77	0.12	0.86	3 35 20.79	3.42
	*+13° 24′ . . .	28	. .	. .	. .	48.4	49.7	51.2	52.4	53.4	. .	. .	. .	35 51.02	0.12	0.86	3 35 50.04	3.42
	η Tauri	29	26.6	29.0	30.1	40.5	41.8	43.0	44.4	45.5	55.9	57.2	59.5	39 43.05	0.16	0.86	3 39 42.03	3.58
	33 Pleiadum . . .	30	. .	. .	. .	36.9	37.9	39.2	40.5	41.5	. .	. .	. .	41 39.20	0.16	0.86	3 41 38.18	3.58
	Weisse (2) 972. .	31	7.2	9.8	11.1	. .	. .	. .	. .	. .	41.3	42.6	45.3	45 26.22	0.20	0.86	3 45 25.16	3.86
	*+38° 7′: . . .	32	. .	. .	. .	24.5	25.8	27.3	29.0	30.2	. .	. .	. .	45 27.36	0.20	0.86	3 45 26.30	3.86
	O. Arg. S. 2663 .	33	52.1	54.3	55.6	6.4	7.5	8.8	10.3	11.4	22.0	23.2	25.5	50 8.83	0.08	0.86	3 50 7.89	2.58
	B. A. C. 1247 . .	34	. .	. .	. .	53.0	1.1	12.5	22.8	32.0	. .	. .	. .	58 12.28	1.67	0.86	3 58 9.75	9.72
	Lacaille 1346 . .	35	. .	. .	. .	. .	26.0	27.4	28.8	29.9	41.0	42.4	44.9	0 34.34	7.11	0.86	4 0 26.37	2.36
	Lalande 7819 . .	36	15.0	17.2	18.4	28.0	29.1	30.3	31.5	32.5	42.2	43.3	45.5	4 30.27	0.10	0.86	4 4 29.31	2.87
	Weisse 81 . . .	37	. .	. .	. .	50.6	51.7	53.7	8.8	10.8	12.0	13.4	14.6	6 4.45	26.02	0.86	4 5 37.57	2.87
	B. A. C. 1327 . .	38	. .	. .	. .	51.0	52.2	53.8	55.4	56.5	. .	. .	. .	11 53.78	0.08	0.86	4 11 52.84	1.97
	Rumker 1167 . .	39	59.3	1.3	2.4	12.4	13.5	14.7	16.0	17.1	27.3	28.3	30.5	15 14.80	0.14	0.86	4 15 13.80	3.31
	63 Tauri	40	39.8	41.8	43.0	53.1	54.2	55.4	56.6	57.7	7.7	8.9	10.9	15 55.37	0.14	0.86	4 15 54.37	3.31
	Weisse (2) 344. .	41	42.6	44.6	45.7	55.8	56.9	58.1	59.3	0.3	10.4	11.5	13.7	16 58.08	0.14	0.86	4 16 57.08	3.30
	Weisse (2) 387. .	42	38.7	40.9	42.2	52.0	53.1	54.4	55.6	56.7	6.7	7.8	10.1	18 54.38	0.14	0.86	4 18 53.38	3.30
	Lacaille 1504 . .	†43	. .	. .	. .	. .	. .	. .	. .	. .	26.3	27.6	30.0	27 27.97	14.78	0.86	4 27 12.33	2.30
	Lacaille 1521 . .	44	13.1	15.4	16.5	27.3	28.4	29.6	31.0	32.1	42.6	43.8	46.3	29 29.65	0.08	0.86	4 29 28.71	2.30
	c^2 Tauri	45	32.0	33.9	35.0	44.8	45.8	47.1	48.4	49.4	59.2	0.4	2.4	32 47.13	0.13	0.86	4 32 46.14	3.14
	*−23° 27′ . . .	46	35.4	37.7	38.9	49.5	50.5	51.8	53.2	54.3	4.7	6.0	8.1	36 51.83	0.09	0.87	4 36 50.87	2.29
	*+10° 43′ . . .	47	58.3	0.4	1.5	11.2	12.4	13.6	14.7	15.7	25.7	26.7	28.8	41 13.55	0.13	0.87	4 41 12.55	3.08
	*+ 1° 18′ . . .	48	21.7	23.8	24.9	34.5	35.5	36.6	37.7	38.9	48.5	49.6	51.6	46 36.66	0.11	0.87	4 46 35.68	2.85
	*+ 1° 24′ . . .	49	34.5	36.6	37.8	47.5	48.5	49.6	50.7	51.7	1.5	2.5	4.7	50 49.60	0.11	0.87	4 50 48.62	2.83
	*+45° 35′ . . .	50	. .	23.6	25.2	38.9	40.5	42.0	43.6	45.0	58.9	0.6	. .	54 42.03	− 0.24	− 0.87	4 54 40.92	+ 3.84

23. Cloudy.
43. Hazy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 4, 4.0	− 0.36	− 0.010	− 0.08	− 0.11

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 5 E.	*+45° 4′	1	31.6	34.3	35.6	. .	. .	. .	. .	. .	. .	. .	. .	57 33.83	+ 18.55	− 0.87	4 57 51.51	+ 3.82
	*+45° 4′	2	. .	. .	. .	56.9	58.5	. .	2.0	3.5	. .	. .	. .	58 0.22	− 0.24	0.87	4 57 59.11	3.83
	Weisse 1394	3	31.6	33.8	35.0	44.8	45.8	47.0	48.2	49.3	59.2	0.3	2.5	1 47.05	0.10	0.87	5 1 46.08	2.43
	Weisse 56	4	35.7	37.9	39.0	48.5	49.5	50.7	52.0	53.1	2.5	3.6	5.8	4 50.75	0.12	0.87	5 4 49.76	2.83
	O. Arg. S. 3790	5	44.2	46.4	47.6	58.6	59.6	1.0	2.2	3.3	54.4	55.4	57.8	9 0.95	0.08	0.87	5 9 0.00	1.92
	*+26° 6′	6	. .	44.4	45.6	57.3	58.4	59.5	0.7	1.9	11.8	13.0	. .	12 59.18	0.16	0.88	5 12 58.14	3.28
	β Tauri	7	45.3	47.5	48.7	59.7	0.8	2.2	3.6	4.6	15.6	16.9	19.2	18 2.19	0.17	0.88	5 18 1.14	3.32
	Weisse (2) 530	8	30.9	33.1	34.3	45.5	46.7	48.0	49.3	50.5	1.9	3.2	5.5	19 48.08	0.17	0.88	5 19 47.03	3.36
	*+29° 42′	9	17.5	19.6	20.9	32.0	33.1	34.5	35.9	37.1	48.4	49.5	51.9	40 34.58	0.17	0.88	5 40 33.53	3.27
	Weisse (2) 1325	10	39.6	41.8	43.1	54.0	55.2	56.6	58.0	59.3	10.3	11.6	13.0	40 56.59	0.17	0.88	5 40 55.54	3.27
	Lacaille 2015	11	3.7	6.0	7.3	18.8	20.0	21.5	23.0	24.1	35.6	36.9	39.5	45 21.49	0.08	0.88	5 45 20.53	1.45
	*+7° 26′	12	. .	. .	. .	51.7	52.8	54.1	55.3	56.3	. .	. .	. .	48 54.04	0.12	0.88	5 48 53.04	2.72
	*+7° 26′	13	34.6	36.4	37.5	47.3	48.4	49.5	50.6	51.7	1.3	2.4	4.5	50 49.47	0.12	0.88	5 50 48.47	2.71
	Weisse 1378	14	9.6	11.5	12.8	22.7	23.8	24.9	26.1	27.2	37.0	38.1	40.4	54 24.92	0.10	0.88	5 54 23.94	2.11
	Lalande 11471	15	6.4	8.6	10.0	21.8	23.1	24.7	26.0	27.4	39.0	40.4	43.0	57 24.58	0.19	0.88	5 57 23.51	3.45
	Lacaille 2124	16	. .	. .	. .	27.0	28.4	29.8	31.3	32.5	. .	. .	. .	59 29.80	0.08	0.88	5 59 28.84	1.39
	Lacaille 2131	17	8.9	11.0	12.2	22.8	23.9	25.2	26.6	27.7	38.3	39.4	41.8	1 25.25	0.09	0.88	6 1 24.28	1.70
	B. A. C. 1994	18	16.0	18.0	19.1	28.8	29.8	31.0	32.2	33.2	42.8	44.0	46.2	5 31.01	0.10	0.89	6 5 30.02	2.29
	B. A. C. 2014	19	. .	33.4	34.7	46.3	47.6	49.0	50.6	51.8	3.6	5.0	. .	8 49.11	0.19	0.89	6 8 48.03	3.30
	B. A. C. 2021	20	51.5	53.8	55.0	6.9	8.2	9.6	11.0	12.3	24.2	25.5	28.1	10 9.65	− 0.19	0.89	6 10 8.57	+ 3.30
	δ Ursæ Minoris, S.P.	21	. .	. .	. .	42.0	0.0	20.0	39.5	57.0	. .	. .	. .	14 19.70	+ 3.18	0.89	. . . . .	− 5.65
	Lalande 12237	22	. .	. .	. .	0.2	1.5	2.9	4.1	5.1	. .	. .	. .	18 2.76	− 0.16	0.89	6 18 1.71	+ 3.04
	*+25° 31′	23	30.1	32.4	33.4	44.0	45.2	46.5	47.8	49.0	59.7	1.0	3.2	21 46.57	0.16	0.89	6 21 45.52	3.03
	Weisse (2) 631	24	45.7	47.9	49.0	49.6	50.8	52.1	53.5	54.5	5.4	6.6	8.8	22 52.17	0.16	0.89	6 22 51.12	3.02
	Weisse (2) 809	25	19.9	22.0	23.2	33.9	35.0	36.3	37.7	38.7	49.4	50.5	52.8	28 36.31	0.16	0.89	6 28 35.26	2.98
	Weisse (2) 826	26	. .	. .	. .	5.7	7.0	8.1	9.4	10.6	. .	. .	. .	29 8.16	0.16	0.89	6 29 7.11	2.98
	γ Geminorum	27	54.8	56.8	58.0	7.9	8.9	10.2	11.6	12.7	22.7	23.8	26.0	30 10.31	0.14	0.89	6 30 9.28	2.80
	*−14° 33′	28	40.0	42.1	43.5	53.0	54.2	55.4	56.5	57.7	7.2	8.2	10.7	37 55.32	0.10	0.89	6 37 54.33	1.92
	*−14° 34′	29	45.3	47.5	48.6	58.6	59.6	0.7	2.0	3.2	12.9	14.0	16.2	38 0.78	0.10	0.89	6 37 59.79	1.91
	Weisse 1198	30	29.0	31.1	32.2	42.2	43.3	44.4	45.7	46.8	56.7	57.7	0.0	38 44.46	0.10	0.89	6 38 43.47	1.91
	Weisse 1199	31	49.7	51.9	52.9	2.7	3.9	5.1	6.3	7.3	17.3	18.3	20.5	40 5.08	0.10	0.89	6 40 4.09	1.91
	B. A. C. 2244	32	. .	. .	. .	51.0	52.3	53.7	55.0	56.1	. .	. .	. .	44 53.62	0.08	0.89	6 44 52.65	1.40
	O. Arg. S. 5772	33	. .	. .	. .	6.0	7.2	8.5	9.8	11.0	. .	. .	. .	45 8.50	0.08	0.89	6 45 7.53	1.40
	*−28° 51′	34	57.7	59.7	1.0	12.4	13.6	14.8	15.9	17.2	28.4	29.5	31.8	49 14.73	0.08	0.89	6 49 13.76	1.31
	ε Canis Majoris	35	13.8	16.0	17.2	28.3	29.5	30.8	32.2	33.4	44.4	45.5	47.9	53 30.82	0.08	0.90	6 53 29.84	1.30
6 Y.	47 Arietis	36	20.5	22.7	23.8	34.1	35.2	36.5	37.8	38.9	49.0	50.3	52.5	50 36.48	0.13	1.11	2 50 35.24	3.73
	α Ceti	37	11.8	13.9	15.0	24.6	25.8	26.9	28.0	29.2	38.7	39.8	42.0	55 26.88	0.11	1.11	2 55 25.66	3.49
	Weisse 35	38	. .	. .	. .	2.8	4.0	5.2	6.4	7.4	17.0	18.2	20.4	4 10.18	5.14	1.11	3 4 3.93	3.52
	Weisse 101	39	0.8	3.0	4.1	14.0	15.1	16.3	17.5	18.4	28.3	29.3	31.7	7 16.23	0.12	1.11	3 7 15.00	3.55
	15 Eridani	40	19.4	21.6	22.7	33.1	34.3	35.6	37.0	38.1	48.4	49.6	51.9	12 35.61	0.10	1.11	3 12 34.40	3.01
	*+8° 52′	41	. .	. .	. .	42.8	43.8	45.9	0.7	2.8	4.3	5.6	6.8	14 56.59	− 26.01	1.11	3 14 29.47	3.47
	*+5° 27′	42	17.7	19.8	20.9	30.4	31.5	32.7	33.9	34.9	. .	. .	. .	22 27.72	+ 4.88	1.11	3 22 31.49	3.38
	*+5° 29′	43	. .	. .	. .	. .	. .	. .	11.3	13.4	14.7	16.1	17.5	23 14.60	− 33.23	1.11	3 22 40.26	3.38
	O. Arg. S. 2388	44	4.1	6.4	. .	18.0	19.4	20.5	21.8	22.9	. .	34.7	37.0	30 20.53	0.10	1.11	3 30 19.32	2.83
	Radcliffe 1041	45	22.2	25.0	26.8	41.2	42.6	44.4	46.2	47.5	2.0	3.9	7.0	34 44.44	0.21	1.11	3 34 43.12	4.18
	18 Tauri	46	5.6	7.9	9.2	19.7	20.9	22.2	23.5	24.6	35.2	36.4	38.8	37 22.18	0.14	1.11	3 37 20.93	3.62
	8 Pleiadum	47	. .	. .	. .	25.4	26.5	27.8	29.1	30.3	. .	. .	. .	38 27.82	0.14	1.12	3 38 26.56	3.61
	9 Pleiadum	48	. .	. .	. .	43.0	44.3	46.6	. .	4.9	6.0	7.8	9.1	38 57.39	27.44	1.12	3 38 28.83	3.61
	10 Pleiadum	49	. .	. .	. .	54.0	55.3	57.5	13.6	16.0	17.3	18.8	20.2	39 9.09	28.09	1.12	3 38 39.88	3.61
	24 Tauri	50	. .	. .	. .	32.6	33.8	35.2	36.4	37.5	. .	. .	. .	39 35.10	− 0.14	− 1.12	3 39 33.84	+ 3.61

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	n	c
1869.	h.	s.	s.	s.	s.
Feb. 5,	5.6	− 0.88	− 0.012	− 0.08	− 0.11

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 6 Y.	B. A. C. 1165	1	. .	. .	. .	40.8	42.0	43.2	44.5	45.7	. .	. .	. .	39 43.24	− 0.14	− 1.12	3 39 41.98	+ 3.60
	18 Pleiadum	2	. .	. .	. .	. .	. .	. .	6.0	8.3	9.6	11.2	12.4	40 9.50	36.17	1.12	3 39 32.21	3.60
	*+23° 48′	3	. .	. .	. .	18.6	19.6	20.9	22.1	23.2	. .	. .	. .	40 20.88	0.14	1.12	3 40 19.62	3.60
	41 Pleiadum	4	. .	. .	. .	46.0	47.3	48.5	49.8	51.0	. .	. .	. .	40 48.52	0.14	1.12	3 40 47.26	3.60
	27 Tauri	5	. .	. .	. .	21.2	22.4	23.7	25.0	26.2	. .	. .	. .	41 23.70	0.14	1.12	3 41 22.44	3.60
	28 Tauri	6	8.5	10.8	11.9	. .	. .	. .	. .	. .	37.8	38.9	41.2	41 24.85	0.14	1.12	3 41 23.59	3.60
	*+23° 48′ ±	7	. .	. .	. .	56.9	58.1	59.4	0.8	1.9	. .	. .	. .	41 59.42	0.14	1.12	3 41 58.16	3.59
	36 Pleiadum	8	. .	. .	. .	5.8	6.9	8.2	9.5	10.7	. .	. .	. .	42 8.22	0.14	1.12	3 42 6.96	3.59
	Weisse (2) 1082	9	20.0	22.3	23.6	33.9	35.2	36.4	37.6	38.7	49.2	50.4	52.7	50 36.36	0.14	1.12	3 50 35.10	3.54
	Weisse (2) 1278	10	46.7	48.9	50.1	0.2	1.3	2.6	3.9	5.0	15.4	16.4	18.8	0 2.66	0.13	1.12	4 0 1.41	3.47
	Weisse (2) 22	11	14.7	16.9	18.0	27.9	29.0	30.3	31.5	32.5	42.4	43.7	45.9	3 30.25	0.12	1.12	4 3 29.01	3.36
	*−28° 16′	12	. .	. .	. .	28.9	29.9	32.2	49.1	51.5	52.9	54.4	55.8	7 44.34	29.14	1.12	4 7 14.08	2.41
	O. Arg. S. 2939	13	48.4	50.6	51.8	12.3	13.4	14.7	16.0	17.1	27.4	28.6	31.0	10 14.66	− 0.10	1.12	4 10 13.44	2.54
	ε Tauri	†14	43.7	45.9	46.9	57.0	58.1	59.5	0.7	1.8	. .	. .	. .	20 54.20	+ 5.13	1.12	4 20 58.21	3.37
	84 Tauri	15	27.1	29.3	30.5	40.2	41.3	42.5	43.8	44.9	54.9	56.0	58.2	23 42.61	− 0.12	1.13	4 23 41.36	3.25
	Weisse 533	16	17.4	19.5	20.7	. .	. .	. .	. .	. .	45.2	46.5	48.7	26 33.00	0.12	1.13	4 26 31.75	3.24
	B. A. C. 1427	17	16.0	18.0	19.2	28.9	29.8	31.0	32.3	33.3	42.9	44.0	46.2	29 31.05	0.11	1.13	4 29 29.81	2.85
	Weisse (2) 694	18	38.6	41.3	42.4	54.8	56.3	57.8	59.1	0.4	12.7	14.0	16.7	32 57.65	0.17	1.13	4 32 56.35	3.77
	Weisse 806	19	38.0	39.9	40.9	50.6	51.7	53.0	54.1	55.1	4.6	5.7	8.0	37 52.87	0.11	1.13	4 37 51.63	2.95
	*+10° 42′	20	1.5	3.6	4.7	. .	15.6	16.8	18.0	. .	28.8	29.9	32.0	41 16.77	0.12	1.13	4 41 15.52	3.09
	*+10° 43′	21	. .	. .	. .	. .	. .	. .	49.5	51.6	52.8	54.2	55.5	41 52.72	33.67	1.13	4 41 17.92	3.09
	Lalande 9207	†22	55.4	57.5	58.5	8.2	9.2	10.5	11.6	12.6	22.2	23.5	25.6	47 10.44	0.11	1.13	4 47 9.20	2.87
	ε Aurigæ	23	15.7	18.3	19.9	33.0	34.3	36.0	37.7	39.2	52.5	54.0	56.9	52 36.14	0.19	1.13	4 52 34.82	3.81
	l Tauri	24	. .	51.0	52.1	2.5	3.7	4.9	6.1	7.3	17.5	18.7	. .	0 4.87	0.13	1.13	5 0 3.61	3.21
	Rumker 2553	25	. .	. .	. .	58.9	0.0	2.4	19.4	21.8	23.2	24.7	. .	3 12.91	29.72	1.13	5 2 42.06	3.43
	Weisse 145	26	. .	. .	. .	46.4	47.4	48.6	49.8	50.9	. .	. .	. .	7 48.62	0.11	1.13	5 7 47.38	2.79
	Weisse 153	27	57.6	59.6	0.7	. .	. .	. .	. .	. .	24.3	25.6	27.4	8 12.53	0.11	1.13	5 8 11.29	2.79
	Weisse 156	28	. .	. .	. .	. .	. .	. .	46.7	48.8	49.9	51.2	52.6	8 49.84	33.11	1.13	5 8 15.60	2.79
	Weisse (2) 296	29	. .	. .	. .	54.4	55.5	57.9	14.5	16.6	18.2	19.7	21.3	12 9.76	28.62	1.13	5 11 40.01	3.30
	B. A. C. 1661	30	58.9	0.9	2.0	11.7	12.7	14.0	15.2	16.2	25.8	27.0	29.0	15 13.95	0.11	1.14	5 15 12.70	2.78
	O. Arg. S. 3920	31	7.7	9.9	11.0	21.0	22.1	23.3	24.6	25.7	35.7	36.8	39.0	18 23.35	0.10	1.14	5 18 22.11	2.25
	χ Aurigæ	32	56.2	58.6	0.0	11.4	12.5	13.9	15.2	16.4	27.7	29.0	31.6	24 13.86	0.16	1.14	5 24 12.56	3.40
	ε Orionis	33	20.7	22.8	23.9	33.6	34.6	35.8	37.0	38.1	47.7	48.7	50.8	29 35.79	0.11	1.14	5 29 34.54	2.60
	Lalande 10650	34	2.2	4.7	6.2	. .	. .	. .	. .	. .	36.2	37.6	40.4	33 21.22	0.17	1.14	5 33 19.91	3.51
	Lalande 10666	†35	. .	. .	. .	47.0	48.3	49.5	51.3	52.5	4.7	6.2	8.7	33 56.02	6.49	1.14	5 33 48.39	3.51
	*+38° 17′	†36	. .	. .	. .	48.7	49.9	52.8	11.0	14.0	15.7	17.8	19.3	35 6.20	32.75	1.14	5 34 32.31	3.51
	O. Arg. S. 4264	37	46.0	48.3	49.7	0.4	1.6	2.9	4.2	5.5	16.2	17.6	20.0	39 2.95	0.10	1.14	5 39 1.71	1.73
	κ Orionis	38	19.5	21.5	22.4	32.3	33.3	34.5	35.7	36.7	46.6	47.7	49.8	41 34.55	0.11	1.14	5 41 33.30	2.32
	*+26° 27′	†39	. .	. .	. .	14.8	15.9	18.4	34.5	36.7	38.3	39.7	41.3	46 29.95	28.70	1.14	5 46 0.11	3.18
	η Leporis	40	12.7	14.9	16.0	25.8	26.8	28.1	29.3	30.4	40.3	41.5	43.7	50 28.14	0.10	1.14	5 50 26.90	2.14
	μ Orionis	41	57.1	59.2	0.3	10.0	11.1	12.4	13.6	14.6	24.4	25.5	27.7	55 12.35	0.12	1.14	5 55 11.09	2.76
	B. A. C. 1947	42	14.5	17.3	18.5	30.7	32.0	33.5	35.2	36.4	48.5	50.0	52.6	58 33.56	0.17	1.14	5 58 32.25	3.42
	Lalande 11529	43	. .	. .	. .	11.6	12.8	14.4	15.9	17.3	29.4	30.8	33.4	59 20.70	6.48	1.14	5 59 13.08	3.42
	π Columbæ	44	20.3	22.9	24.2	37.6	38.9	40.5	42.0	43.3	56.3	57.8	0.7	2 40.41	− 0.11	1.14	6 2 39.16	0.81
	*+38° 53′	†45	48.3	50.9	52.4	4.7	6.0	7.6	9.1	10.4	. .	. .	. .	7 1.18	+ 6.21	1.15	6 7 6.24	+ 3.41
	δ Ursæ Min., S. P.	46	. .	. .	. .	44.0	0.0	20.5	40.5	59.0	. .	. .	. .	14 20.80	+ 2.54	1.15	. . . . .	− 5.85
	Lalande 12173	47	26.6	29.3	30.7	43.0	44.4	45.9	47.5	48.8	0.9	2.3	5.0	16 45.85	− 0.17	1.15	6 16 44.53	+ 3.35
	Groombridge 1183	48	3.5	6.0	7.4	19.6	21.0	22.6	24.0	25.2	37.4	38.9	41.6	25 22.47	0.17	1.15	6 25 21.15	3.34
	23 Geminorum	49	13.1	15.3	16.5	26.6	27.7	28.8	30.0	31.1	41.2	42.2	44.5	28 28.82	0.13	1.15	6 28 27.54	2.61
	γ Geminorum	50	. .	. .	. .	8.2	9.3	10.6	11.8	12.9	22.9	24.1	26.2	30 15.75	− 5.32	− 1.15	6 30 9.28	+ 2.61

14. Cloudy.
22. Cloudy.
35. Cloudy.
36. Cloudy.
39. Faint; cloudy.
45. Faint; cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*.	*c*.
1869. h.	s.	s.	s.	s.
Feb. 6, 4.8	− 1.13	− 0.012	− 0.04	− 0.11

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 6 Y.	Lalande 12798 .	1	3.0	5.8	7.0	19.1	20.3	21.9	23.5	24.8	36.8	38.1	40.7	34 21.91	− 0.17	− 1.15	6 34 20.59	+ 3.27
	*+38° 42′ . .	2	4.5	7.2	8.5	20.6	22.1	23.6	25.1	26.5	38.6	40.1	42.9	38 23.61	− 0.18	1.15	6 38 22.28	3.29
	Lalande 12951 .	3	39.4	41.0	42.6	44.2	47.3	. .	4.0	6.8	8.4	10.1	11.7	38 25.55	+ 0.26	− 1.15	6 38 24.66	3.29
8 E.	*−29° 1′ . . .	4	53.7	55.9	57.0	7.2	8.2	9.4	10.7	11.7	22.0	23.1	25.4	30 9.48	− 0.09	+ 8.21	3 30 17.60	2.97
	*+13° 21′ . . .	5	57.2	59.3	0.4	10.2	11.2	12.3	13.5	14.4	24.7	25.7	27.9	35 12.44	0.13	8.21	3 35 20.52	3.47
	η Tauri	6	17.6	19.7	20.9	31.5	32.7	33.9	35.3	36.3	46.8	48.0	50.4	39 33.92	0.15	8.21	3 39 41.98	3.63
	*+23° 40′ . . .	7	. .	0.1	1.4	. .	. .	. .	. .	. .	27.3	28.4	. .	41 14.30	0.15	8.21	3 41 22.36	3.63
	*+23° 44′ . . .	8	. .	. .	. .	13.4	14.5	15.6	17.0	18.1	. .	. .	. .	41 15.72	0.15	8.21	3 41 23.78	3.63
	Weisse (2) 972 .	9	57.8	0.3	1.5	13.9	15.2	16.7	18.2	19.5	31.7	33.2	35.8	45 16.71	0.20	8.21	3 45 24.72	3.92
	*−18° 58′ . . .	10	46.4	48.5	49.7	59.9	1.0	2.3	3.5	4.6	14.6	15.8	18.0	51 2.21	0.09	8.20	3 51 10.32	2.81
	*−21° 26′ . . .	11	1.3	3.5	4.5	. .	15.7	17.1	18.7	. .	29.8	31.2	33.2	55 17.22	0.09	8.20	3 55 25.33	2.71
	*−26° 52′ . . .	12	40.1	42.4	43.6	54.5	55.5	56.8	58.2	59.3	10.2	11.4	13.5	57 56.86	0.09	8.20	3 58 4.97	2.57
	Weisse (2) 22 . .	13	5.5	7.5	8.7	18.6	19.7	21.0	22.3	23.3	33.4	34.5	36.7	3 21.02	0.13	8.20	4 3 29.09	3.39
	Weisse (2) 130 .	14	. .	. .	. .	. .	. .	. .	. .	. .	4.9	6.0	7.9	8 6.27	14.28	8.20	4 8 0.19	3.46
	Weisse (2) 203 .	15	41.8	43.9	45.1	. .	. .	. .	. .	. .	8.9	11.0	13.2	10 57.32	0.13	8.20	4 11 5.39	3.40
	*+17° 31′ . . .	16	. .	. .	. .	55.5	56.7	57.9	59.2	0.3	. .	. .	. .	10 57.92	0.13	8.20	4 11 5.99	3.40
	B. A. C. 1355 . .	17	40.5	42.7	43.9	. .	. .	. .	. .	. .	10.2	11.5	13.7	15 57.08	0.09	8.19	4 16 5.18	2.44
	O. Arg. S. 3022 .	18	. .	. .	. .	56.8	57.9	59.3	0.8	1.9	. .	. .	. .	15 59.34	0.09	8.19	4 16 7.44	2.44
	*−25° 43′ . . .	19	. .	. .	. .	43.8	44.9	46.1	47.4	48.5	. .	. .	. .	17 46.14	0.09	8.19	4 17 54.24	2.43
	ε Tauri	20	34.4	36.5	37.6	48.0	49.1	50.3	51.5	52.5	2.7	3.8	5.9	20 50.21	0.14	8.19	4 20 58.26	3.39
	Weisse (2) 538 .	†21	26.2	27.9	29.3	. .	. .	. .	. .	. .	54.4	55.6	58.1	25 41.92	0.14	8.19	4 25 49.97	3.42
	Weisse (2) 562 .	†22	28.6	30.7	32.0	42.0	43.3	44.8	46.1	47.2	57.5	58.8	0.9	26 44.72	0.15	8.19	4 26 52.76	3.42
	*+5° 53′ . . .	23	. .	. .	. .	29.6	30.8	32.0	33.2	34.3	. .	. .	. .	28 31.98	0.12	8.19	4 28 40.05	3.08
	*+5° 52′ . . .	24	10.7	12.7	13.9	. .	. .	. .	. .	. .	37.6	38.9	40.8	29 25.77	0.12	8.19	4 29 33.84	3.08
	B. A. C. 1460 . .	25	47.3	49.4	50.5	0.3	1.2	2.4	3.6	4.6	14.4	15.5	17.6	37 2.44	0.12	8.19	4 37 10.51	3.14
	*+1° 18′ . . .	26	12.6	14.9	15.9	25.5	26.5	27.6	28.8	29.9	39.3	40.3	42.6	46 27.63	0.11	8.18	4 46 35.70	2.90
	Lalande 9207 . .	27	46.2	48.2	49.4	58.8	59.8	1.0	2.2	3.5	12.8	14.0	16.1	47 1.09	0.11	8.18	4 47 9.16	2.90
	Lalande 9261 . .	28	51.3	53.3	54.4	3.9	4.9	6.1	7.3	8.3	17.8	19.0	21.1	49 6.13	0.11	8.18	4 49 14.20	2.89
	Weisse 1105 . .	29	55.6	57.9	59.0	8.5	9.5	10.7	12.0	13.1	22.5	23.7	25.9	51 10.76	0.11	8.18	4 51 18.83	2.88
	*+ 5° 59′ . . .	30	48.6	50.7	51.8	1.4	2.4	3.6	4.9	5.9	15.6	16.8	19.0	54 3.70	0.12	8.18	4 54 11.76	2.96
	*+ 5° 49′ . . .	31	. .	. .	. .	32.6	33.8	34.9	36.2	37.3	. .	. .	. .	54 34.96	0.12	8.18	4 54 43.02	2.96
	*+45° 4′ . . .	32	. .	. .	. .	47.6	49.3	50.7	52.6	54.0	. .	. .	. .	57 50.84	0.23	8.18	4 57 58.79	3.88
	*+45° 4′ . . .	33	. .	. .	. .	10.0	11.4	12.9	14.8	16.6	. .	. .	. .	58 13.12	0.23	8.18	4 58 21.07	3.88
	Weisse 1394 . .	34	22.5	24.6	25.9	35.7	36.9	38.0	39.2	40.2	49.9	51.0	53.4	1 37.94	0.10	8.18	5 1 46.02	2.48
	O. Arg. S. 3790 .	35	35.5	37.5	38.7	49.5	50.5	51.7	53.3	54.4	5.5	6.6	9.0	8 52.02	0.09	8.18	5 9 0.11	1.98
	O. Arg. S. 3812 .	†36	. .	. .	. .	22.1	23.4	24.5	25.7	27.0	. .	. .	. .	10 24.54	0.09	8.18	5 10 32.63	1.96
	β Tauri	37	36.0	38.4	39.7	50.5	51.8	53.1	54.4	55.6	6.5	7.8	10.3	17 53.10	− 0.16	8.17	5 18 1.11	3.37
	*+26° 41′ . . .	38	6.1	8.3	9.6	. .	21.4	22.7	24.2	25.4	. .	. .	. .	29 16.81	+ 5.85	8.17	5 29 30.83	3.27
	*+26° 38′ . . .	39	16.4	18.6	20.0	30.9	32.1	33.5	35.0	35.9	46.9	47.9	50.5	29 33.43	− 0.16	8.17	5 29 41.44	3.27
	*+26° 36′ . . .	40	11.5	13.6	15.0	25.7	26.8	28.1	29.5	30.8	41.3	42.9	45.1	30 28.21	0.16	8.17	5 30 36.22	3.27
	B. A. C. 1803 . .	41	34.0	36.4	37.8	49.0	50.5	51.8	53.3	54.4	5.9	7.2	9.9	34 51.84	0.09	8.17	5 34 59.92	1.58
	υ Aurigæ . . .	42	40.2	42.7	44.0	56.1	57.5	58.9	0.4	1.6	13.8	15.2	17.7	41 58.92	0.19	8.16	5 42 6.89	3.49
	*+26° 29′ . . .	43	35.6	38.0	39.1	49.7	51.0	52.4	53.6	54.7	5.6	6.8	9.1	45 52.33	0.16	8.16	5 46 0.33	3.21
	β Aurigæ . . .	44	26.7	29.6	31.0	44.7	46.3	47.9	49.7	50.9	4.7	6.2	9.2	49 47.90	0.22	8.16	5 49 55.84	3.67
	Lacaille 2090 . .	45	48.5	51.6	53.0	4.5	5.8	7.2	8.6	9.7	21.3	23.0	25.3	54 7.14	0.09	8.16	5 54 15.21	1.37
	Weisse 1487 . .	46	. .	. .	. .	26.9	27.9	29.1	30.4	31.4	. .	. .	. .	58 29.14	0.10	8.16	5 58 37.20	2.13
	Lacaille 2178 . .	47	25.6	28.2	29.5	41.4	42.5	43.8	45.3	46.4	58.3	59.5	2.0	5 43.86	0.09	8.16	6 5 51.93	1.27
	Lacaille 2180 . .	48	. .	. .	. .	41.1	42.2	43.5	44.8	46.0	. .	. .	. .	6 43.52	0.09	8.16	6 6 51.59	1.67
	O. Arg. S. 4861 .	49	23.5	26.3	27.4	38.3	39.4	40.7	42.4	43.8	54.4	55.6	57.9	9 40.88	− 0.09	8.16	6 9 48.95	+ 1.54
	δ Ursæ Minoris, S.P.	50	. .	. .	. .	34.0	50.0	11.5	32.0	50.0	. .	. .	. .	14 11.50	+ 3.01	+ 8.15	. . . .	− 6.27

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. Feb. 8, h. 5.0	s. + 8.18	s. − 0.021	s. − 0.07	s. − 0.11

21. Very faint.
22. Faint.
36. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 8 E.	O. Arg. N. 6888	1	..	..	..	47.0	48.4	50.2	52.0	53.4	..	..	..	18 50.20	− 0.23	+ 8.15	6 18 58.12	+ 3.60
	*+20° 20′	2	43.8	45.9	47.4	57.3	58.5	59.6	1.0	2.1	12.3	13.3	15.6	20 59.71	0.14	8.15	6 21 7.72	2.93
	ν Geminorum	3	47.8	49.8	51.0	..	..	..	..	..	16.1	17.4	19.8	21 3.65	0.14	8.15	6 21 11.66	2.93
	Lalande 12557	4	36.9	39.0	40.4	51.0	52.1	53.2	54.6	55.6	6.3	7.6	9.8	26 53.32	0.15	8.15	6 27 1.32	3.01
	Weisse (2) 838	5	1.7	4.0	5.1	15.5	16.7	18.0	19.3	20.4	31.0	32.2	34.4	29 18.03	0.15	8.15	6 29 26.03	3.00
	γ Geminorum	6	..	..	..	..	..	..	32.4	34.5	35.8	37.3	38.4	30 35.68	34.51	8.15	6 30 9.32	2.82
	Weisse (2) 891	7	..	..	..	53.0	54.2	56.3	11.7	13.9	15.3	16.7	18.0	31 7.39	26.81	8.15	6 30 48.73	2.81
	Weisse 1069	8	..	..	..	40.9	42.0	43.3	44.5	45.5	..	..	..	35 43.24	0.10	8.15	6 35 51.29	1.96
	*−14° 33′	9	22.7	24.5	25.9	35.7	36.8	38.0	39.2	40.3	50.7	51.7	53.6	36 38.10	0.10	8.15	6 36 46.15	1.95
	Lacaille 2434	10	36.9	39.6	40.7	52.0	53.1	54.5	55.9	57.1	8.2	9.4	10.9	39 54.39	0.09	8.15	6 40 2.45	1.30
11 Y.	ζ Arietis	11	..	..	..	11.1	12.3	13.5	14.7	15.8	26.0	27.2	29.4	7 18.75	5.47	8.92	3 7 22.20	3.76
	*+36° 58′	12	..	..	..	..	..	..	55.0	57.8	59.4	1.1	2.4	21 59.14	41.47	8.93	3 21 26.60	4.03
	Weisse (2) 420	13	..	..	..	17.8	18.9	20.4	22.0	23.4	..	..	..	21 20.50	0.22	8.93	3 21 29.21	4.03
	10 Tauri	14	47.3	49.4	50.4	0.0	1.1	2.3	3.5	4.6	4.0	5.2	7.3	30 2.28	0.11	8.93	3 30 11.10	3.33
	Rumker 945	15	30.8	33.0	34.2	44.7	45.9	47.2	48.5	49.6	0.0	1.3	3.6	35 47.16	0.17	8.94	3 35 55.93	3.71
	18 Tauri	16	55.4	57.8	59.0	9.5	10.6	11.9	13.4	14.4	24.8	26.0	28.4	37 11.93	0.17	8.94	3 37 20.70	3.71
	8 Pleiadum	17	..	..	..	15.3	16.3	17.6	19.0	20.1	..	..	..	38 17.66	0.17	8.94	3 38 26.43	3.70
	9 Pleiadum	18	..	..	..	32.8	34.0	36.5	52.5	54.8	56.0	57.7	58.8	38 47.89	28.12	8.94	3 38 28.71	3.70
	10 Pleiadum	19	..	..	..	..	..	..	3.5	5.8	7.2	8.8	9.9	39 7.04	36.21	8.94	3 38 39.77	3.70
	24 Tauri	20	..	..	..	22.7	23.8	25.0	26.3	27.5	..	..	..	39 25.06	0.17	8.94	3 39 33.83	3.69
	B. A. C. 1165	21	..	..	..	30.7	31.8	33.1	34.4	35.5	..	..	..	39 33.10	0.17	8.94	3 39 41.87	3.69
	*+23° 52′ ±	22	..	..	..	8.5	9.7	11.0	12.3	13.4	..	..	..	40 10.98	0.17	8.94	3 40 19.75	3.69
	41 Pleiadum	23	..	..	..	36.0	37.1	38.4	39.7	40.7	..	..	..	40 38.38	0.17	8.94	3 40 47.15	3.69
	33 Pleiadum	24	..	..	..	26.7	27.9	29.3	30.6	31.7	..	..	..	41 29.24	0.17	8.94	3 41 38.01	3.69
	*+23° 48′ ±	25	..	..	..	46.9	48.0	49.4	50.7	51.7	..	..	..	41 49.34	0.17	8.94	3 41 58.11	3.68
	*+23° 48′ ±	26	..	..	..	55.7	56.8	58.2	59.4	0.5	..	..	..	41 58.12	0.17	8.94	3 42 6.89	3.68
	Weisse (2) 1082	27	10.0	12.3	13.5	23.9	25.1	26.3	27.6	28.7	39.0	40.3	42.6	50 26.30	0.17	8.95	3 50 35.08	3.63
	Weisse (2) 1210	28	..	..	..	13.5	14.6	16.9	32.2	34.4	35.7	37.2	38.5	57 27.88	26.80	8.95	3 57 10.03	3.48
	*−26° 56′	29	..	..	..	..	..	..	33.6	35.9	37.2	38.8	40.1	5 37.12	37.04	8.96	4 5 9.04	2.56
	Lacaille 1387	30	..	..	..	5.7	6.9	9.5	27.0	29.8	31.0	32.7	34.2	8 22.10	30.59	8.96	4 8 0.47	2.36
	Weisse (2) 203	31	..	..	..	54.3	55.5	56.8	58.0	59.1	..	..	..	10 56.74	0.15	8.96	4 11 5.55	3.44
	*+17° 33′	32	..	..	..	9.4	10.6	12.8	28.2	30.5	31.8	33.3	34.5	11 23.89	26.97	8.96	4 11 5.88	3.44
	*+17° 39′	33	6.6	8.8	10.0	20.0	21.1	22.4	23.7	24.8	34.9	36.0	38.1	14 22.40	0.15	8.96	4 14 31.21	3.43
	*−28° 28′	34	23.8	26.1	27.4	38.3	39.5	40.9	42.2	43.4	54.4	55.6	58.0	17 40.87	0.06	8.97	4 17 49.78	2.41
	*+16° 28′	35	..	48.9	51.1	0.0	1.0	2.4	3.7	4.8	14.6	15.7	..	20 2.47	0.15	8.97	4 20 11.29	3.38
	*−26° 34′	36	49.0	51.3	52.5	3.2	4.3	5.6	7.0	8.2	19.1	20.3	22.6	23 5.74	0.07	8.97	4 23 14.64	2.42
	Weisse 554	37	..	..	..	59.4	0.4	1.6	2.9	3.9	13.5	14.5	16.7	27 6.61	5.12	8.97	4 27 10.46	3.12
	*−26° 49′	38	35.4	37.8	39.0	49.7	50.8	52.2	53.7	54.8	5.5	6.7	9.1	30 52.25	0.07	8.97	4 31 1.15	2.35
	*−27° 2′	39	..	..	..	..	..	..	48.0	50.5	51.9	53.4	54.6	32 51.68	37.07	8.97	4 32 23.58	2.33
	Lacaille 1557	40	9.2	11.6	12.9	25.6	26.8	28.3	29.7	31.0	44.0	45.3	48.1	36 28.41	0.05	8.98	4 36 37.34	1.83
	*+10° 42′ ±	41	..	..	..	..	..	..	..	..	14.0	15.1	17.2	41 15.43	13.63	8.98	4 41 10.78	3.17
	*+10° 42′ ±	42	..	..	..	2.6	3.8	4.9	6.1	7.2	..	..	..	41 4.92	− 0.13	8.98	4 41 13.77	3.17
	*+10° 42′ ±	43	29.5	30.9	32.1	33.4	35.7	..	..	..	..	..	..	40 32.32	+ 34.12	8.98	4 41 15.42	3.17
	*+10° 42′ ±	44	41.6	42.8	44.2	45.5	47.8	..	..	..	..	..	..	40 44.38	+ 34.12	8.98	4 41 27.48	3.17
	*+10° 40′ ±	45	..	..	..	30.3	31.7	33.8	51.9	54.0	55.3	56.6	58.0	41 46.45	− 26.16	8.98	4 41 29.27	3.17
	Groombridge 892	46	..	..	..	32.6	34.3	36.4	38.2	40.0	..	..	..	45 36.30	0.33	8.98	4 45 44.95	4.26
	o² Orionis	47	36.3	38.5	39.5	49.5	50.6	51.8	53.0	54.1	3.8	4.9	7.1	48 51.74	0.14	8.99	4 49 0.59	3.18
	Lacaille 1666	48	34.2	36.7	37.9	49.5	50.9	52.3	53.9	55.1	6.9	8.3	10.8	52 52.41	0.05	8.99	4 53 1.35	1.88
	*+45° 18′	49	..	..	..	27.5	29.1	30.8	32.6	34.0	..	..	..	56 30.80	0.27	8.99	4 56 39.52	3.95
	*+45° 10′	50	..	..	..	24.9	26.5	28.2	30.0	31.4	..	..	..	57 28.20	0.27	8.99	4 57 36.92	3.94
	*+45° 6′	51	..	..	..	46.9	48.5	50.1	51.9	53.3	..	..	..	57 50.14	− 0.27	+ 8.99	4 57 58.86	+ 3.94

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 11, 5.9	+ 9.03	+ 0.040	− 0.10	− 0.11

DATE.	OBJECT.	mber.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 11	Weisse (2) 49 . .	1	47.8	50.1	51.4	2.4	3.5	4.9	6.4	7.6	18.8	20.0	22.4	4 5.03	− 0.19	+ 9.00	5 4 13.84	+ 3.50
Y.	Lacaille 1754 . .	2	36.8	39.5	40.8	53.0	54.3	55.8	57.3	58.5	10.7	12.2	14.8	6 55.79	0.05	9.00	5 7 4.74	1.64
	*−36° 47′ . . .	3	. .	. .	. .	. .	. .	. .	0.9	3.6	4.9	6.7	8.0	11 4.82	41.20	9.00	5 10 32.62	1.64
	Lacaille 1780 . .	4	6.7	9.3	10.6	22.5	23.9	25.4	26.8	28.1	40.2	41.5	44.2	10 25.38	0.05	9.00	5 10 34.33	1.64
	o Columbæ . . .	5	. .	. .	. .	34.4	35.7	37.1	38.6	39.9	51.4	52.9	55.5	12 43.19	6.13	9.00	5 12 46.06	1.71
	B. A. C. 1673 . .	6	5.7	8.1	9.5	21.1	22.3	23.8	25.2	26.5	38.0	39.5	42.2	16 23.81	0.06	9.01	5 16 32.76	1.70
	*+38° 58′ . . .	†7	58.5	0.9	2.3	. .	16.0	17.3	18.5	. .	32.6	33.8	36.2	20 17.34	0.24	9.01	5 20 26.11	3.67
	*−29° 42′ . . .	8	. .	. .	. .	36.6	37.8	39.2	40.7	41.8	52.8	54.2	56.5	22 44.95	5.79	9.01	5 22 48.17	1.85
	δ Orionis . . .	9	55.3	57.5	58.6	8.2	9.2	10.3	11.6	12.6	22.1	23.3	25.4	25 10.37	0.11	9.01	5 25 19.27	2.71
	Lalande 10567 .	10	5.1	7.2	8.5	18.0	19.1	20.3	21.5	22.5	32.2	33.4	35.4	29 20.29	0.10	9.01	5 29 29.20	2.55
	125 Tauri	11	11.8	14.2	15.4	26.1	27.3	28.7	30.0	31.1	41.7	42.9	45.3	31 28.59	0.18	9.01	5 31 37.42	3.29
	Lalande 10650 .	12	. .	. .	. .	. .	. .	. .	48.7	51.4	53.2	54.8	56.4	33 52.90	42.14	9.02	5 33 19.78	3.60
	Lalande 10666 .	13	. .	36.6	37.9	39.5	41.0	42.4	17.3	19.9	21.6	23.5	24.9	34 0.46	21.17	9.02	5 33 48.31	3.59
	Lalande 10871 .	14	44.2	46.7	48.0	59.8	1.0	2.5	4.0	5.2	17.0	18.4	20.8	39 2.51	0.22	9.02	5 39 11.31	3.49
	*+23° 40′ . . .	15	19.1	21.3	22.4	32.9	34.1	35.5	36.8	37.9	48.4	49.6	51.8	41 35.44	0.17	9.02	5 41 44.29	3.20
	Lacaille 2018 . .	16	35.5	37.7	38.9	49.4	50.4	51.8	53.0	54.1	4.6	5.8	8.0	45 51.75	0.07	9.02	5 46 0.70	1.95
	*+19° 44′ . . .	17	. .	. .	. .	. .	20.7	21.7	22.8	. .	34.4	35.6	37.7	50 28.82	7.21	9.03	5 50 30.64	3.07
	*+19° 44′ . . .	18	. .	. .	. .	. .	. .	. .	55.3	57.6	58.7	0.4	1.5	50 58.70	35.19	9.03	5 50 32.54	3.07
	*+19° 46′ . . .	19	19.7	21.8	23.0	33.3	34.5	35.6	36.8	38.0	48.1	49.4	51.6	51 35.62	0.16	9.03	5 51 44.49	3.06
	*+19° 48′ . . .	20	44.5	46.7	47.8	58.0	59.3	0.6	1.7	2.9	12.9	14.3	16.5	53 0.47	0.16	9.03	5 53 9.34	3.06
	B. A. C. 1935 . .	21	36.0	38.6	39.9	52.2	53.5	55.0	56.6	57.9	10.0	11.4	14.1	55 55.02	0.23	9.03	5 56 3.82	3.50
	B. A. C. 1947 . .	22	4.4	7.0	8.3	20.6	21.7	23.4	24.9	26.2	38.3	39.8	42.5	58 23.37	0.23	9.03	5 58 32.17	3.49
	Lacaille 2126 . .	23	. .	. .	. .	26.4	27.4	29.8	46.0	48.3	49.6	51.1	52.5	0 41.39	28.10	9.03	6 0 22.32	1.82
	Lacaille 2151 . .	24	29.9	32.4	33.9	46.0	47.4	48.6	50.1	51.3	3.1	4.6	7.3	2 48.60	0.05	9.04	6 2 57.59	1.26
	Lacaille 2177 . .	25	49.6	52.0	53.2	4.0	5.3	6.5	7.8	8.9	19.8	21.2	23.4	6 6.52	0.07	9.04	6 6 15.49	1.67
	5 Monocerotis . .	26	. .	. .	. .	17.5	18.6	19.7	20.9	21.9	31.5	32.6	34.9	8 24.70	5.10	9.04	6 8 28.64	2.35
	Weisse 334 . .	27	51.3	53.3	54.5	4.5	5.6	6.8	8.0	9.1	18.8	20.0	22.1	12 6.73	0.09	9.04	6 12 15.68	2.10
	Weisse 348 . .	28	. .	. .	. .	27.4	28.4	29.6	30.9	32.0	41.8	42.9	45.1	12 34.76	5.23	9.04	6 12 38.57	2.10
	Lalande 12134 .	29	6.3	9.0	10.3	22.4	23.8	25.2	26.7	27.9	40.1	41.5	44.0	15 25.20	0.23	9.04	6 15 34.01	3.40
	O. Arg. N. 6886 .	30	31.5	39.5	43.7	23.5	27.3	31.9	37.4	41.0	20.2	25.0	33.2	20 32.20	− 0.84	9.05	6 20 40.41	5.61
	Groombridge 1183	31	26.0	27.5	29.0	30.7	33.8	. .	50.2	52.8	54.3	56.1	57.6	25 11.80	+ 0.21	9.05	6 25 21.06	3.38
	O.Arg. S. 5343, (2d *)	32	15.1	17.5	18.6	29.4	30.6	31.8	33.0	34.1	44.7	45.9	48.1	30 31.71	− 0.07	9.05	6 30 40.69	1.67
	B. A. C. 2185 . .	33	22.3	24.4	25.5	35.2	36.3	37.5	38.7	39.8	49.5	50.5	52.7	33 37.49	0.13	9.06	6 33 46.42	2.67
	51 Cephei	34	. .	. .	. .	36.5	59.0	24.0	48.5	8.0	. .	. .	. .	38 23.20	4.43	9.06	. . . . .	15.21
	Weisse (2) 1254 .	35	55.5	58.2	59.7	12.9	14.4	16.0	17.8	19.2	32.3	33.9	36.8	42 16.06	0.26	9.06	6 42 24.86	3.46
	*−14° 26′ . . .	36	9.0	11.2	12.4	22.2	23.3	24.6	26.0	27.0	36.8	37.9	40.1	47 24.59	0.09	9.07	6 47 33.57	1.94
	62 Aurigæ . . .	37	39.8	42.4	43.6	56.2	57.4	59.0	0.5	1.7	14.0	15.5	18.2	49 58.94	0.23	9.07	6 50 7.78	3.28
	Lalande 13569 .	38	49.1	51.9	53.0	5.1	6.4	8.0	9.4	10.7	22.6	24.0	26.6	55 7.89	0.22	9.07	6 55 16.74	3.22
	*−30° 32′ . . .	39	52.8	55.2	56.4	7.7	8.9	10.2	11.5	12.7	23.9	25.2	27.6	59 10.19	0.06	9.07	6 59 19.20	1.24
	Lacaille 2615 . .	40	3.6	5.9	7.0	17.6	18.8	20.1	21.4	22.5	33.0	34 3	36.6	1 20.07	0.07	9.07	7 1 29.07	1.51
	δ Geminorum . .	41	53.5	55.8	56.9	7.4	8.5	9.7	11.0	12.1	22.6	23.7	25.9	12 9.74	0.17	9.08	7 12 18.65	2.82
	*−14° 58′ . . .	42	. .	. .	. .	43.3	44.6	46.5	1.8	4.0	5.3	6.7	8.0	17 57.52	26.57	9.09	7 17 40.04	1.82
	B. A. C. 2472 . .	43	5.7	8.0	9.3	20.3	21.4	22.8	24.2	25.3	36.0	37.3	39.7	22 22.73	0.18	9.09	7 22 31.64	2.92
	*−24° 54′ . . .	44	. .	. .	. .	25.2	26.4	27.5	28.9	30.0	40.7	41.9	44.2	24 33.10	5.56	9.09	7 24 36.63	1.43
	Groombridge 1343	45	50.3	52.8	54.3	6.8	8.0	9.5	11.0	12.3	24.7	25.9	28.6	29 9.47	0.23	9.09	7 29 18.33	3.13
	Groombridge 1346	46	. .	. .	. .	45.2	46.6	48.1	49.5	50.7	3.3	4.5	7.2	29 54.39	6.60	9.09	7 29 56.88	3.13
	Groombridge 1352	47	58.2	1.0	2.2	14.6	15.9	17.5	18.8	20.2	32.6	34.0	36.7	31 17.43	0.23	9.09	7 31 26.29	3.13
	Lalande 15006 .	48	55.0	57.2	58.4	8.9	10.0	11.3	12.5	13.7	24.4	25.6	27.9	35 11.35	0.07	9.10	7 35 20.38	1.44
	Lacaille 2929 . .	49	47.4	49.6	50.8	1.6	2.6	3.9	5.1	6.2	16.9	18.1	20.5	38 3.88	0.07	9.10	7 38 12.91	1.38
	*+38° 11′ . . .	50	51.0	53.7	54.9	7.2	8.5	10.0	11.5	12.6	25.0	26.2	29.1	42 9.97	− 0.23	+ 9.10	7 42 18.84	+ 3.07

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 11, 5.9	+ 9.03	+ 0.040	− 0.10	− 0.11

7. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 11 Y.	*+38° 10'	1	33.9	36.9	38.0	50.3	51.6	53.1	54.6	55.8	8.1	9.4	12.2	42 53.08	— 0.23	+ 9.10	7 43 1.95	+ 3.07
	Weisse 1371	2	. .	30.5	31.6	41.7	42.7	43.9	45.1	46.2	56.1	57.2	. .	46 43.89	0.14	9.10	7 46 52.85	2.52
	Lacaille 3073	3	49.5	51.9	53.2	4.5	5.6	7.2	8.4	9.5	20.7	21.8	24.3	50 6.96	0.06	9.11	7 50 16.01	1.13
	B. A. C. 2651	4	44.6	46.8	48.0	59.3	0.3	1.7	3.1	4.3	15.5	16.7	19.2	51 1.77	0.06	9.11	7 51 10.82	1.13
	Weisse (2) 1520	5	. .	. .	. .	37.8	39.1	40.3	41.5	42.7	. .	. .	. .	55 40.28	0.18	9.11	7 55 49.21	2.83
	Weisse (2) 1521	6	24.1	26.4	27.6	. .	. .	. .	. .	. .	54.4	55.7	58.1	55 41.05	0.18	9.11	7 55 49.98	2.83
	*−5° 20'	7	46.6	48.6	49.7	59.5	0.5	1.6	2.8	3.8	13.5	14.6	16.8	59 1.64	0.10	9.11	7 59 10.65	2.04
	ρ Argus	8	33.9	36.0	37.1	47.8	48.8	50.1	51.4	52.5	3.1	4.2	6.6	1 50.14	0.07	+ 9.11	8 1 59.18	1.36
13	ο Persei	9	8.3	10.7	12.0	23.4	24.6	26.0	27.5	28.6	39.8	41.2	43.6	36 25.97	0.11	−19.61	3 36 6.25	3.90
	19 Tauri	10	27.9	30.2	31.3	41.8	43.0	44.3	45.6	46.8	57.3	58.5	0.9	37 44.33	0.11	19.61	3 37 24.61	3.74
	23 Tauri	11	. .	. .	. .	50.3	51.5	52.8	54.0	55.1	5.6	6.8	9.1	38 58.15	5.58	19.61	3 38 32.96	3.72
	*+23° 30'±	12	. .	. .	. .	34.6	35.9	37.1	38.4	39.6	. .	. .	. .	39 37.12	0.11	19.61	3 39 17.40	3.72
	*+23° 30'±	13	. .	. .	. .	55.1	56.2	57.6	58.8	59.9	. .	. .	. .	39 57.52	0.11	19.61	3 39 37.80	3.72
	*+23° 30'±	14	. .	. .	. .	. .	. .	. .	26.7	29.1	30.5	32.0	33.3	40 30.32	— 28.00	19.61	3 39 42.71	3.72
	*+23° 30'±	15	13.4	15.5	16.7	27.2	28.3	29.6	31.0	32.0	. .	. .	. .	41 24.21	+ 5.32	19.61	3 41 9.92	3.71
	*+23° 30'±	16	. .	. .	. .	42.6	43.8	45.0	46.4	47.4	. .	. .	. .	41 45.04	— 0.11	19.61	3 41 25.32	3.71
	*+23° 35'±	17	14.6	16.8	18.0	28.4	29.5	31.0	32.2	33.3	43.7	45.0	47.3	42 30.89	0.11	19.61	3 42 11.17	3.71
	ζ Persei	18	55.9	58.6	59.8	11.0	12.3	13.7	15.1	16.4	27.5	28.8	31.3	46 13.67	0.11	19.61	3 45 53.95	3.87
	A² Tauri	19	38.6	40.8	42.0	52.3	53.4	54.7	56.0	57.1	7.4	8.6	10.8	57 54.70	0.11	19.61	3 57 34.98	3.61
	O. Arg. S. 2828	20	1.7	4.0	5.3	16.1	17.2	18.6	19.9	21.1	31.9	33.2	35.5	2 18.59	0.14	19.60	4 1 58.85	2.61
	*−26° 56'	21	11.9	14.2	15.4	26.2	27.3	28.6	30.0	31.1	42.0	43.3	45.6	5 28.69	0.14	19.60	4 5 8.95	2.65
	*−31° 36'	22	. .	. .	. .	23.8	25.0	26.5	27.9	29.1	40.4	41.7	44.0	8 32.30	5.98	19.60	4 8 6.72	2.45
	55 Tauri	23	29.1	31.3	32.4	42.4	43.4	44.6	45.9	46.9	56.9	58.0	0.2	12 44.65	0.11	19.60	4 12 24.94	3.44
	Weisse (2) 363	24	55.2	57.5	58.6	8.7	9.8	11.1	12.4	13.4	23.5	24.7	27.0	18 11.08	0.11	19.60	4 17 51.37	3.47
	Weisse (2) 420	25	29.7	32.0	33.2	43.6	44.7	46.0	47.4	48.5	58.9	0.1	2.4	20 46.05	0.11	19.60	4 20 26.34	3.66
	Lalande 8455	26	34.3	36.9	38.3	50.2	51.5	53.0	54.5	55.8	7.7	9.0	11.7	23 52.99	0.12	19.59	4 23 33.28	3.86
	Weisse 554	27	15.2	17.3	18.3	27.9	28.9	30.2	31.4	32.4	42.0	43.1	45.2	27 30.17	0.11	19.59	4 27 10.47	3.16
	Lacaille 1537	28	51.1	53.6	54.8	7.3	8.4	0.0	11.6	12.8	25.1	26.4	29.0	32 0.01	0.16	19.59	4 31 40.26	2.00
	Lacaille 1541	29	43.8	46.1	47.4	58.3	59.5	0.8	2.2	3.3	14.3	15.5	17.8	34 0.82	0.14	19.59	4 33 41.09	2.33
	O. Arg. S. 3325	30	42.8	45.0	46.1	56.8	57.8	59.1	0.4	1.5	12.1	13.4	15.6	37 59.15	0.13	19.59	4 37 39.43	2.42
	O. Arg. S. 3382	31	32.2	34.4	35.6	46.4	47.5	48.9	50.2	51.2	2.0	3.3	5.6	41 48.85	0.14	19.59	4 41 29.12	2.31
	2 Aurigæ.	32	. .	. .	. .	8.9	10.3	11.8	13.4	14.6	26.5	27.8	30.5	44 17.98	6.30	19.59	4 43 52.09	3.78
	B. A. C. 1513	33	6.7	9.1	10.4	22.1	23.4	24.9	26.4	27.6	39.2	40.6	43.2	47 24.87	0.15	19.58	4 47 5.14	1.99
	β Camelopardi	34	. .	. .	. .	2.0	4.1	6.6	9.0	11.1	. .	. .	. .	52 6.56	0.17	19.58	4 51 46.81	4.69
	*+45° 11'	35	. .	. .	. .	. .	57.3	59.1	0.8	2.3	. .	. .	. .	56 59.88	0.92	19.58	4 56 39.38	3.99
	*+45° 4'	36	. .	. .	. .	53.3	54.7	56.6	58.2	59.6	. .	. .	. .	57 56.48	0.13	19.58	4 57 36.77	3.99
	*+45° 7'	37	. .	. .	. .	15.4	16.9	18.4	20.2	21.6	. .	. .	. .	58 18.50	0.13	19.58	4 57 58.79	3.99
	Weisse (2) 49	38	16.3	18.7	19.8	31.0	32.2	33.6	35.0	36.2	47.3	48.5	50.9	4 33.59	— 0.11	19.58	5 4 13.90	3.54
	*+30° 16'	39	53.4	55.0	56.3	57.7	. .	. .	. .	12.3	13.8	15.5	16.8	6 35.10	+ 0.32	19.57	5 6 15.85	3.53
	*+30° 18'	40	31.4	33.8	34.9	46.2	47.3	48.7	50.0	51.2	2.4	3.6	6.0	6 48.68	— 0.11	19.57	5 6 29.00	3.53
	Lacaille 1779	41	17.7	19.9	21.1	31.8	33.0	34.3	35.5	36.7	47.4	48.7	50.9	11 34.27	0.14	19.57	5 11 14.56	2.12
	*+37° 34'	42	41.0	43.6	45.0	57.2	58.4	0.0	1.5	2.8	14.8	16.3	19.0	14 59.96	0.12	19.57	5 13 40.27	3.69
	O. Arg. S. 3917	43	17.9	19.9	21.1	. .	. .	. .	4.3	6.3	7.7	. .	. .	18 42.87	— 9.65	19.57	5 18 13.65	2.36
	O. Arg. S. 3920	44	3.8	5.1	6.5	7.7	. .	. .	. .	14.8	16.2	17.7	19.0	18 41.35	+ 0.26	19.57	5 18 22.04	2.36
	*+26° 37'	45	32.7	34.9	36.0	46.8	48.0	49.3	50.7	51.9	2.6	3.8	6.1	22 49.35	— 0.11	19.57	5 22 29.67	3.38
	δ Orionis	46	24.0	26.0	27.1	36.7	37.7	38.9	40.1	41.2	50.8	51.9	54.0	25 38.95	— 0.11	19.57	5 25 19.27	2.74
	θ Orionis	47	34.0	35.3	36.5	37.8	40.2	. .	40.4	42.5	43.8	45.2	46.4	29 10.21	+ 0.24	19.56	5 28 50.89	2.61
	θ² Orionis	48	2.0	4.0	5.1	14.8	15.9	17.1	18.3	19.3	28.9	30.0	32.2	29 17.05	— 0.11	19.56	5 28 57.38	2.61
	*+31° 16'	49	15.8	18.3	19.6	. .	. .	. .	. .	. .	47.1	48.7	50.8	36 33.38	0.11	19.56	5 36 13.71	3.43
	*+31° 17'	50	. .	. .	. .	30.8	32.0	33.5	34.9	36.1	. .	. .	. .	36 33.46	— 0.11	−19.56	5 36 13.79	+ 3.43

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 13, 6.0	− 19.55	+ 0.027	+ 0.03	− 0.11

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 13	Lacaille 1967 . .	1	. .	. .	. .	43.0	44.4	47.0	4.7	7.3	8.7	10.2	11.8	38 59.64	− 31.01	−19.56	5 38 9.07	+ 1.59
Y.	υ Aurigæ . . .	2	7.7	10.3	11.6	23.7	25.0	26.5	28.0	29.2	41.4	42.8	45.4	42 26.51	0.12	19.56	5 42 6.83	3.57
	Weisse 1176 . .	3	40.1	42.2	43.4	53.4	54.4	55.6	56.8	57.8	7.9	9.0	11.2	46 55.62	0.12	19.56	5 46 35.94	2.25
	Weisse (2) 1621 .	4	16.1	18.3	19.3	29.6	30.7	32.1	33.4	34.5	44.8	46.0	48.4	50 32.11	0.11	19.55	5 50 12.45	3.15
	*+19° 48′ . . .	5	13.1	15.3	16.5	26.7	27.8	29.1	30.4	31.5	41.6	42.8	45.1	53 29.08	0.11	19.55	5 53 9.42	3.09
	μ Orionis . . .	6	. .	. .	. .	42.8	43.8	46.0	0.9	3.0	4.2	5.7	6.8	55 56.65	26.06	19.55	5 55 11.04	2.84
	Weisse 1487 . .	7	41.3	43.4	44.5	54.4	55.4	56.7	58.0	59.1	8.9	10.1	12.2	58 56.73	0.12	19.55	5 58 37.06	2.20
	Lacaille 2130 . .	8	6.1	8.5	9.8	20.8	21.9	23.4	24.7	25.9	37.0	38.3	40.6	1 23.36	0.14	19.55	6 1 3.67	1.63
	*+22° 32′ . . .	9	. .	. .	. .	. .	. .	. .	32.9	35.3	36.7	38.3	39.6	5 36.56	35.80	19.55	6 4 41.21	3.10
	*+22° 32′ . . .	10	. .	16.4	17.6	18.7	20.0	21.2	51.1	53.3	54.6	56.1	57.4	5 36.64	17.94	19.55	6 4 59.15	3.10
	B. A. C. 2023 . .	11	11.5	13.9	15.1	25.8	27.0	28.5	29.8	30.9	41.6	42.9	45.3	10 28.39	0.11	19.55	6 10 8.73	3.20
	Weisse 334 . .	12	19.8	22.0	23.1	33.0	34.1	35.3	36.5	37.5	47.5	48.6	50.7	12 35.28	0.12	19.54	6 12 15.62	2.10
	Lalande 12134 .	13	34.9	37.5	38.8	50.9	52.2	53.8	55.3	56.6	8.6	10.0	12.7	15 53.75	0.12	19.54	6 15 34.09	3.43
	Lalande 12173 .	14	. .	. .	. .	1.2	2.6	4.1	5.7	7.0	19.1	20.5	23.2	17 10.42	6.44	19.54	6 16 44.44	3.45
	O. Arg. N. 6886 .	15	58.8	6.9	11.4	50.5	54.9	59.8	4.8	8.7	47.8	52.4	1.0	20 59.73	0.16	19.54	6 20 40.03	5.74
	O. Arg. N. 7009 .	16	39.0	42.1	43.7	58.7	0.4	2.2	4.0	5.6	20.6	22.3	25.5	26 2.19	0.14	19.54	6 25 42.51	3.77
	23 Geminorum . .	17	31.5	33.7	34.8	44.9	46.0	47.3	48.6	49.6	59.7	0.7	3.0	28 47.25	0.11	19.54	6 28 27.60	2.88
	B. A. C. 2185 . .	18	50.8	53.0	54.1	3.8	5.0	6.1	7.4	8.4	18.0	19.2	21.4	34 6.11	0.11	19.54	6 33 46.46	2.69
	Lacaille 2399 . .	19	10.6	12.9	14.3	25.5	26.7	28.0	29.5	30.6	41.6	42.9	45.4	36 28.00	0.14	19.53	6 36 8.33	1.39
	51 Cephei	20	. .	. .	. .	4.0	23.5	48.0	13.0	34.0	. .	. .	. .	38 48.50	− 1.73	19.53	. . . .	15.87
	Lacaille 2448, N. .	21	57.2	58.8	0.2	1.5	4.2	. .	12.6	15.1	16.4	17.9	19.2	42 38.31	+ 0.25	19.53	6 42 19.03	1.46
	Lacaille 2448, S. .	22	22.6	25.2	26.3	37.3	38.4	39.7	41.0	42.2	3.2	4.4	6.7	42 39.73	− 0.14	19.53	6 42 20.06	1.46
	O. Arg. S. 5809 .	23	. .	26.1	27.5	38.1	39.5	40.8	42.1	43.3	53.8	55.1	. .	46 40.70	− 0.14	19.53	6 46 21.03	1.52
	O. Arg. S. 5814 .	24	12.2	13.6	14.8	16.2	18.7	. .	26.0	28.4	29.7	31.3	32.6	46 52.35	+ 0.25	19.53	6 46 33.07	1.52
	62 Aurigæ . . .	25	8.4	11.0	12.4	24.7	26.0	27.5	29.0	30.4	42.5	44.0	46.6	50 27.50	− 0.12	19.53	6 50 7.85	3.31
	ε Canis Majoris .	26	32.3	34.8	35.9	46.9	47.9	49.5	50.9	52.1	3.0	4.2	6.7	53 49.47	0.14	19.53	6 53 29.80	1.39
	22 Canis Majoris .	27	33.8	36.4	37.4	48.2	49.4	50.7	52.0	53.3	4.3	5.4	7.9	56 50.80	0.14	19.52	6 56 31.14	1.42
	O. Arg. S. 6232 .	28	45.6	47.8	49.0	59.6	0.9	2.2	3.5	4.7	15.5	16.7	19.0	2 2.23	0.14	19.52	7 1 42.57	1.46
	s Puppis	29	3.4	5.9	7.1	18.3	19.5	21.0	22.4	23.6	34.9	36.2	38.7	18 21.00	0.14	19.51	7 18 1.35	1.16
	B. A. C. 2472 . .	30	34.1	36.5	37.8	48.7	49.9	51.2	52.6	53.6	4.6	5.8	8.3	22 51.19	0.11	19.51	7 22 31.57	2.94
	B. A. C. 2484 . .	31	40.4	42.7	44.1	55.3	56.5	57.9	59.3	0.3	11.7	12.8	15.3	25 57.85	0.14	19.51	7 25 38.20	1.18
	Groombridge 1343	32	18.7	21.4	22.7	35.2	36.4	37.9	39.4	40.6	53.0	54.4	57.1	29 37.89	0.12	19.51	7 29 18.26	3.15
	Groombridge 1356	33	. .	. .	. .	13.6	14.9	16.5	18.0	19.3	31.6	33.0	35.7	30 22.82	6.49	19.51	7 29 56.82	3.15
	Groombridge 1352	34	26.6	29.1	30.7	43.0	44.3	45.9	47.5	48.7	0.9	2.5	5.2	31 45.85	0.12	19.51	7 31 26.22	3.14
	Lacaille 2916 . .	35	51.2	53.5	54.8	5.9	7.3	8.7	10.2	11.3	22.4	23.7	26.2	36 8.65	0.14	19.51	7 35 49.00	1.10
	Lacaille 2941 . .	36	. .	. .	. .	38.9	40.3	42.7	59.9	2.5	4.0	5.5	6.8	39 55.08	30.08	19.50	7 39 5.50	1.11
	Lalande 15196 .	37	35.5	38.2	39.4	51.6	52.8	54.4	56.0	57.2	9.2	10.6	13.2	42 54.37	0.12	19.50	7 42 34.75	3.07
	φ Geminorum . .	38	32.3	34.5	35.7	46.5	47.6	49.1	50.4	51.6	2.3	3.5	5.9	45 49.04	0.11	19.50	7 45 29.43	2.83
15	Weisse (2) 130 .	39	55.6	57.6	58.9	9.2	10.3	11.5	12.9	13.9	34.0	35.1	37.4	8 11.49	0.14	11.26	4 8 0.09	3.58
E.	γ Tauri	40	16.3	18.4	19.5	29.4	30.5	31.8	33.0	34.1	43.9	45.1	47.3	12 31.75	0.13	11.26	. . . .	3.47
	O. Arg. S. 2997 .	41	12.6	15.1	16.6	. .	. .	. .	. .	. .	43.3	44.4	47.3	14 29.88	0.09	11.26	4 14 18.53	2.51
	*+14° 47′ . . .	42	52.5	54.6	55.7	. .	. .	. .	. .	. .	20.4	21.4	23.5	21 8.02	0.13	11.26	4 20 56.63	3.41
	*+14° 47′ . . .	43	2.0	4.1	5.3	15.3	16.3	17.5	18.8	19.8	29.7	30.9	33.2	21 17.54	0.13	11.26	4 21 6.15	3.41
	84 Tauri	44	37.3	39.3	40.5	50.4	51.5	52.7	54.0	55.0	4.9	6.1	8.3	23 52.73	0.13	11.26	4 23 41.34	3.40
	Weisse (2) 600 .	45	33.8	36.2	37.4	48.1	49.4	50.7	52.0	53.2	4.0	5.2	7.4	28 50.67	− 0.15	11.26	4 28 39.26	3.64
	Weisse 705 . .	46	53.0	55.1	56.3	. .	. .	. .	. .	. .	. .	. .	. .	32 54.80	+ 13.25	11.26	4 32 56.79	3.19
	B. A. C. 1496 . .	47	3.2	10.6	14.4	49.6	53.5	57.5	1.9	5.8	41.0	45.1	52.4	45 57.73	− 0.61	11.26	4 45 45.86	6.38
	Weisse (2) 1138 .	48	18.5	20.6	21.9	32.4	33.5	34.6	35.9	37.1	47.4	48.5	50.6	51 34.64	0.14	11.26	4 51 23.24	3.44
	β Tauri	49	55.3	57.7	58.8	9.9	11.1	12.4	13.8	14.9	25.9	27.1	29.6	18 12.41	0.16	11.26	. . . .	3.47
	O. Arg. S. 4003 .	50	59.5	1.7	3.0	14.2	15.4	16.8	18.1	19.3	30.5	31.7	34.3	24 16.77	− 0.09	−11.26	5 24 5.42	+ 1.88

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	n	c
1869.	h.	s.	s.	s.	s.
Feb. 13,	6.0	− 19.55	+ 0.027	+ 0.03	− 0.11

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 15 E.	Lalande 10426. .	1	52.1	54.1	55.2	5.0	6.0	7.1	8.2	9.3	18.9	19.9	22.1	26 7.08	— 0.11	—11.26	5 25 55.71	+ 2.77
	B. A. C. 1775 . .	2	57.6	0.1	1.3	12.3	13.5	14.7	16.0	17.2	28.3	29.5	32.0	31 14.77	0.09	11.26	5 31 3.42	1.90
	B. A. C. 1786 . .	3	27.0	29.3	30.5	41.3	42.5	43.9	45.4	46.5	57.4	58.5	1.0	32 43.94	0.09	11.26	5 32 32.59	1.89
	B. A. C. 1787 . .	4	32.7	35.0	36.2	47.3	48.4	49.7	51 2	52.3	3.2	4.4	6.7	32 49.74	0.09	11.26	5 32 38.39	1.89
	Weisse (2) 1534 .	5	25.0	27.1	28.3	39.0	40.2	41.5	42.9	43.9	54.7	55.9	58.2	47 41.52	0.15	11.26	5 47 30.11	3.30
	36 Aurigæ. . . .	6	52.1	55.0	56.6	11.1	12.5	14.4	16.2	17.6	31.9	33.7	36.7	51 14.35	0.23	11.26	5 51 2.86	3.91
	Lacaille 2092 . .	7	19.3	21.6	22.9	34.6	35.9	37.2	38.6	40.0	51.5	52.8	55.3	54 37.25	0.09	11.26	5 54 25.90	1.32
	*—14° 46′ . . .	8	25.0	27.5	28.5	37.9	39.2	40.4	41.7	42.7	52.5	53.7	56.0	58 40.46	0.10	11.26	5 58 29.10	2.21
	*+31° 27′ . . .	9	41.3	43.7	45.0	56.3	57.4	58.7	0.2	1.6	12.5	14.0	16.6	3 58.84	0.16	11.26	6 3 47.42	3.36
	*+31° 27′ . . .	10	50.2	52.7	54.2	5.1	6.5	8.0	9.4	10.5	21.8	23.0	25.7	4 7.92	— 0.16	11.26	6 3 56.50	3.36
	*—27° 43′ . . .	†11	25.3	27.7	29.0	..	..	..	..	..	..	..	..	7 27.33	+ 14.89	11.26	6 7 30.96	1.70
	*—27° 43′ . . .	†12	..	..	..	41.3	42.5	43.7	45.1	46.3	..	..	..	7 43.78	— 0.09	11.26	6 7 32.43	1.70
	*—27° 43′ . . .	†13	..	..	..	54.0	55.1	56.3	57.7	58.9	..	..	..	7 56.40	— 0.09	11.26	6 7 45.05	+ 1.70
	δ Ursæ Min., S. P. .	14	20.0	54.5	13.5	56.0	12.0	33.0	53.0	10.5	53.5	10.5	46.0	14 32.95	+ 2.90	11.26	. . . .	— 8.22
	*+25° 31′ . . .	15	40.4	42.5	43.8	54.5	55.6	56.9	58.1	59.3	10.0	11.2	12.5	21 56.80	— 0.15	11.26	6 21 45.39	+ 3.13
	Weisse (2) 631. .	16	46.0	48.1	49.3	0.0	1.1	2.3	3.6	4.7	15.5	16.6	19.0	23 2.38	0.15	11.26	6 22 50.97	3.12
	Lalande 12557. .	17	56.2	58.4	59.6	10.1	11.3	12.5	13.9	15.0	25.6	26.9	29.2	27 12.61	0.15	11.26	6 27 1.20	3.09
	Weisse (2) 909. .	18	21.0	23.1	24.3	35.0	36.1	37.3	38.6	39.8	50.4	51.6	53.9	29 37.37	0.15	11.26	6 29 25.96	3.08
	O. Arg. S. 5450 .	19	..	..	..	19.0	20.2	21.4	22.7	23.7	..	..	..	34 21.40	0.09	11.26	6 34 10.05	1.72
	O. Arg. S. 5463 .	20	..	27.0	28.3	38.7	39.6	40.9	42.4	43.6	54.0	55.3	..	34 41.09	0.09	11.26	6 34 29.74	1.72
	*—23° 34′ . . .	21	29.6	31.5	32.7	..	..	..	..	..	58.7	0.0	2.0	34 45.75	0.09	11.26	6 34 34.40	1.72
	Lacaille 2448 (1st *)	22	..	..	..	27.7	29.0	30.3	31.7	32.8	..	..	..	42 30.30	0.09	11.26	6 42 18.95	1.49
	Lacaille 2448 (2d *)	23	..	..	..	..	..	..	..	..	44.7	46.0	48.4	42 46.37	15.17	11.26	6 42 19.94	1.49
	O. Arg. S. 5745 .	24	..	..	..	27.3	28.5	29.7	31 0	32.3	..	..	..	44 29.76	0.09	11.26	6 44 18.41	1.47
	O. Arg. S. 5887 .	25	14.8	17.0	18.4	29.2	30.4	31.7	33.0	34.2	24.9	26.3	28.4	49 31.66	0.09	11.26	6 49 20.31	1.50
	ε Canis Majoris. .	26	24.0	26.2	27.6	38.7	39.7	41.1	42.5	43.5	54.4	55.9	58.2	53 41.07	0.09	11.26	. . . .	1.42
	22 Canis Majoris. .	27	25.6	27.9	29.0	39.9	41.1	42.5	43.8	45.0	55.7	57.0	59.4	56 42.45	0.09	11.26	6 56 31.10	1.45
	Piazzi 328 . . .	28	31.9	34.0	35.1	45.0	46.1	47.3	48.4	49.5	59.4	0.5	2.7	59 47.26	0.10	11.26	6 59 35.90	+ 1.93
16 Y.	δ Ursæ Min., S. P. .	29	..	..	..	..	..	..	52.0	10.5	52.0	10.5	44.0	16 57.80	2 21.61	11.31	. . . .	— 8.54
	B. A. C. 2095 . .	30	..	..	..	53.0	58.7	5.6	12.2	17.4	..	..	..	24 5.38	1.38	11.31	6 23 52.69	+ 6.94
	*+61° 7′ . . .	31	15.6	19.9	21.9	42.0	44.1	46.6	49.2	51.1	11.1	13.6	17.8	26 46.63	0.48	11.31	6 26 34.84	4.32
	γ Geminorum . .	32	5.0	7.1	8.3	18.4	19.5	20.7	21.8	22.9	32.9	34.0	36.3	30 20.63	0.16	11.31	. . . .	2.90
	Lalande 12768. .	33	8.7	11.2	12.5	23.8	25.0	26.5	27.8	29.0	40.7	41.8	44.2	33 26.47	0.22	11.31	6 33 14.94	3.53
	Weisse 1069 . .	34	..	..	..	0.0	1.3	2.5	3.6	4.7	14.7	15.7	17.9	36 7.55	5.24	11.31	6 35 51.00	2.05
	Weisse (2) 1171 .	35	12.9	15.7	17.2	30.5	32.0	33.7	35.4	36.7	50.0	51.7	54.4	39 33.65	0.29	11.31	6 39 22.05	3.56
	Weisse (2) 1254 .	36	15.7	18.4	20.0	33.4	34.8	36.5	38.1	39.5	52.9	54.4	57.4	42 36.46	0.29	11.31	6 42 24.86	3.54
	*—28° 33′ . . .	37	51.9	54.4	55.6	..	..	..	..	..	22.5	23.7	26.1	46 9.03	0.05	11.31	6 45 57.67	1.48
	*—28° 33′ . . .	38	..	..	..	6.7	7.9	9.3	10.7	11.9	..	..	..	46 9.30	0.05	11.31	6 45 57.94	1.48
	*—28° 30′ . . .	39	..	..	..	39.3	40.4	41.8	43.1	44.4	55.3	56.5	58.9	46 47.46	5.71	11.31	6 46 30.44	1.47
	*—28° 30′ . . .	40	..	..	..	18.0	19.2	20.5	21.9	23.0	33.8	35.1	37.7	47 26.15	5.71	11.31	6 47 9.13	1.47
	*—28° 30′ ± . .	41	..	..	..	..	..	..	..	..	38.7	39.9	42.2	47 40.27	15.14	11.31	6 47 13.82	1.47
	Weisse 1579 . .	42	48.6	50.6	51.7	..	..	..	..	..	16.2	17.3	19.5	52 3.98	0.08	11.31	6 51 52.59	1.97
	Weisse 1587 . .	43	58.3	0.3	1.5	..	..	..	..	..	25.9	27.1	29.4	52 13.75	0.08	11.31	6 52 2.36	1.97
	*—14° 51′ . .	44	7.6	9.9	11.0	..	..	..	..	..	35.3	36.6	39.0	52 23.23	0.08	11.31	6 52 11.84	1.96
	*—14° 51′ . . .	45	51.7	53.7	54.9	4.9	5.9	7.3	8.4	9.4	19.3	20.5	22.8	54 7.16	0.08	11.31	6 53 55.77	1.96
	Weisse (2) 1704 .	46	31.6	34.0	35.7	48.8	50.3	51.9	53.6	55.0	8.0	9.6	12.7	57 51.93	0.29	11.31	6 57 40.33	3.44
	*—14° 42′ ± . .	47	18.6	20.5	22.0	..	..	..	..	..	46.4	47.8	49.9	2 34.20	— 0.08	11.31	7 2 22.81	1.93
	*—14° 42′ . . .	48	0.6	2.0	3.4	4.6	..	..	..	11.2	12.4	13.9	15.1	2 37.90	+ 0.31	11.31	7 2 26.90	1.93
	*—14° 42′ ± . .	49	30.2	32.4	33.4	..	..	..	..	..	57.8	59.0	1.1	2 45.65	— 0.08	11.31	7 2 34.26	1.93
	Weisse 93 . . .	50	..	..	..	33.0	34.1	35.3	36.6	37.6	47.5	48.6	50.7	4 40.42	— 5.22	—11.31	7 4 23.89	+ 1.93

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 15. 5.5	— 11.26	0.00	— 0.06	— 0.11

11.12.13. *The whole record of these stars should be increased six seconds.*

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 16 Y.	*−14° 36′ ±	1	44.1	46.3	47.4	. .	. .	. .	. .	. .	11.6	13.0	15.1	5 59.58	− 0.08	−11.31	7 5 48.19	+ 1.92
	Weisse 164	2	. .	. .	. .	32.1	33.3	35.5	50.7	52.8	54.2	55.6	56.7	6 46.36	− 26.51	11.31	7 6 8.54	1.92
	Weisse 290	3	12.4	14.6	15.8	25.7	26.7	28.0	29.3	30.4	. .	. .	. .	10 22.86	+ 5.06	11.31	7 10 16.61	1.91
	Weisse 300	4	. .	. .	. .	42.1	43.2	44.5	45.6	46.6	56.6	57.7	59.7	10 49.50	− 5.22	11.31	7 10 32.07	1.90
	Weisse 316	5	. .	. .	. .	16.8	17.8	19.0	20.3	21.4	31.3	32.5	34.6	11 24.21	− 5.22	11.31	7 11 7.68	1.90
	*−14° 38′	6	22.5	24.5	25.6	35.6	36.8	38.0	39.3	40.3	. .	. .	. .	14 32.82	+ 5.06	11.31	7 14 26.57	1.89
	*−14° 38′	7	. .	. .	. .	48.0	49.0	50.2	51.5	52.5	2.4	3.4	5.7	14 55.34	− 5.22	11.31	7 14 38.81	1.89
	*−14° 38′ ±	8	. .	. .	. .	52.9	53.9	55.1	56.2	57.3	7.1	8.4	10.6	16 0.19	5.22	11.31	7 15 43.66	1.89
	Weisse 502	9	. .	. .	. .	25.3	26.3	27.6	28.8	29.9	. .	. .	. .	17 27.58	0.08	11.31	7 17 16.19	1.88
	*+21° 44′	10	23.0	25.2	26.4	36.8	37.9	39.2	40 5	41.6	51.9	53.1	55.3	33 39.17	0.17	11.31	7 33 27.69	2.78
	O. Arg. S. 7289	11	56.4	58.6	59.7	10.8	12.0	13.3	14.6	16.0	26.6	27.8	30.2	37 13.27	0.06	11.31	7 37 1.90	1.32
	Lacaille 2952	12	15.9	18.1	19.4	29.9	31.1	32.3	33.6	34.8	45.3	46.5	48.7	40 32.33	0.06	11.31	7 40 20.96	1.47
	*−25° 27′	13	. .	. .	. .	6.9	7.9	9.2	10.6	11.6	. .	. .	. .	43 9.24	0.06	11.31	7 42 57.87	1.40
	*−25° 27′	14	. .	. .	. .	12.1	13.3	15.5	32.0	34.5	35.6	37.1	38.4	44 27.31	28.38	11.31	7 43 47.62	1.40
	Weisse (2) 1366	15	54.0	56.2	57.3	7.6	8.7	9.9	11.3	12.4	22.6	23.7	26.0	49 9.97	0.17	11.31	7 48 58.49	2.69
	Weisse 1477	16	45.4	47.4	48.5	58.6	59.6	0.7	2.0	3.1	12.7	14.0	16.1	50 0.74	0.15	11.31	7 50 49.28	2.51
	Lacaille 3093	17	33.0	35.6	36.9	58.9	0.3	1.8	3.1	4.4	16.5	17.8	20.5	54 1.71	0.04	11.31	7 53 50.36	0.82
	O. Arg. S. 7865	18	45.4	47.7	48.7	59.4	0.7	2.0	3.2	4.4	15.0	16.3	18.6	57 1.95	0.06	11.31	7 56 50.58	1.36
	Lalande 15868	19	16.3	18.9	20.5	33.5	35.0	36.5	38.2	39.4	52.2	54.0	56.8	1 36.48	0.28	11.31	8 1 24.89	3.10
	Lacaille 3168	20	. .	. .	. .	59.5	0.8	2.3	3.8	5.0	17.1	18.5	21.0	4 8.50	6.30	11.31	8 3 50.89	0.76
	Lacaille 3192	21	23.3	25.7	26.9	38.0	39.2	40.5	41.9	43.1	54.0	55.3	57.9	7 40.53	0.05	11.31	8 7 29.17	1.17
	O. Arg. S. 8295	22	32.7	35.2	36.4	47.6	48.8	50.1	51.5	52.8	3.8	5.0	7.4	10 50.12	0.05	11.31	8 10 38.76	1.08
	Lacaille 3258	23	14.2	17.0	18.4	30.5	31.7	33.1	34.7	36.0	47.8	49.1	51.9	13 33.13	0.04	11.31	8 13 21.78	0.77
	Lacaille 3272	24	. .	. .	. .	20.4	21.5	24.3	42.7	45.4	46.9	48.5	50.0	15 37.46	32.07	11.31	8 14 54.08	0.76
	o Ursæ Majoris	25	3.9	8.0	10.0	30.1	32.3	34.9	37.3	39.3	59.4	1.6	6.0	19 34.80	0.48	11.31	8 19 23.01	3.47
	B. A. C. 2844	26	30.3	33.6	35.4	51.7	53.6	55.7	57.6	59.3	15.5	17.5	21.0	22 55.56	0.38	11.31	8 22 43.87	3.25
	*−31° 51′	27	9.4	11.6	12.9	24.3	25.6	27.0	28.4	29.5	41.0	42.1	44.6	27 26.95	0.05	11.31	8 27 15.59	1.03
	*+20° 1′	28	. .	. .	. .	40.3	41.4	42.6	43.9	45.0	. .	. .	. .	29 42.64	0.17	11.31	8 29 31.16	2.56
	*+20° 1′ ±	29	. .	. .	. .	6.2	7.4	8.7	9.9	11.0	. .	. .	. .	30 8.64	0.17	11.31	8 29 57.16	2.56
	*+20° 1′	30	. .	. .	. .	19.2	20.3	21.6	22.9	24.0	. .	. .	. .	30 21.60	0.17	11.31	8 30 10.12	2.56
	B. A. C. 2906	31	30.9	33.1	34.4	. .	. .	. .	. .	. .	59.5	0.7	2.9	31 46.92	0.17	11.31	8 31 35.44	2.55
	B. A. C. 2907	32	. .	. .	. .	47.7	48.9	50.1	51.4	52.4	. .	. .	. .	31 50.10	0.17	11.31	8 31 38.62	2.55
	B. A. C. 2914	33	16.0	18.1	19.3	. .	. .	. .	. .	. .	44.3	45.5	47.9	32 31.85	0.17	11.31	8 32 20.37	2.55
	Weisse (2) 790	34	. .	. .	. .	35.3	36.3	37.6	39.0	40.1	. .	. .	. .	32 37.66	0.17	11.31	8 32 26.18	2.55
	Weisse (2) 793	35	23.2	25.2	26.4	. .	. .	. .	. .	. .	51.5	52.6	54.9	32 38.97	0.17	11.31	8 32 27.49	2.55
	*+20° 0′ ±	36	. .	. .	. .	11.9	13.3	15.5	31.0	33.3	34.6	36.1	37.3	33 26.63	27.39	11.31	8 32 47.93	2.55
	ε Cancri	37	. .	. .	. .	6.0	7.1	8.4	9.7	10.6	. .	. .	. .	33 8.36	0.17	11.31	8 32 56.88	2.55
	Weisse (2) 824	38	. .	. .	. .	50.1	51.3	53.5	9.3	11.6	12.9	14.4	15.5	34 4.82	27.39	11.31	8 33 26.12	2.54
	ε Hydræ	39	47.7	49.7	50.8	0.5	1.4	2.6	3.9	4.9	14.6	15.6	17.9	40 2.69	0.13	11.31	. . . .	2.26
	Weisse (2) 1018	40	55.3	57.4	58.7	9.1	10.3	11.5	12.7	13.9	24.5	25.7	27.9	45 11.55	0.18	11.31	8 45 0.06	2.57
	Weisse 1222	41	. .	. .	. .	15.8	16.7	18.0	19.3	20.2	30.0	31.1	33.1	48 23.02	5.11	11.31	8 48 6.60	2.20
	Weisse (2) 1252	42	20.6	22.9	24.0	34.4	35.5	36.7	38.0	39.1	49.5	50.6	52.9	51 36.75	0.17	11.31	8 51 25.27	2.53
	Weisse (2) 1322	43	42.1	44.4	45.5	55.9	56.9	58.2	59.5	0.6	11.0	12.1	14.3	54 58.23	0.17	11.31	8 54 46.75	2.52
	κ Cancri	44	36.1	38.2	39.3	49.0	50.1	51.4	52.6	53.7	3.6	4.6	6.7	0 51.39	0.14	11.31	. . . .	2.31
19 E.	11 Orionis	45	. .	. .	. .	29.9	31.1	33.3	48.5	50.8	52.0	53.5	54.6	57 44.21	26.62	12.38	. . . .	3.32
	O. Arg. S. 3670	46	. .	. .	. .	32.6	33.5	34.7	36.3	37.3	. .	. .	. .	1 34.88	0.10	12.38	5 1 22.40	2.21
	O. Arg. S. 3680	†47	. .	. .	. .	. .	. .	. .	. .	. .	15.5	16.8	20.0	2 17.43	15.24	12.38	5 1 49.81	2.20
	m Orionis	48	54.7	56.6	57.8	. .	. .	. .	. .	. .	21.4	22.7	24.7	16 9.65	0.11	12.38	5 15 57.16	2.96
	*+ 3° 25′	49	. .	. .	. .	8.5	9.5	10.7	11.8	13.0	. .	. .	. .	16 10.70	0.11	12.38	5 15 58.21	2.96
	*+38° 57′	50	. .	. .	. .	. .	. .	. .	. .	. .	54.8	56.2	58.6	20 56.53	− 17.21	−12.38	5 20 26.94	+ 3.82

CORRECTIONS, &c.

Date.		Error of clock.	Hourly rate.	n	c
1869.	h.	s.	s.	s.	s.
Feb. 16,	8.0	− 11.31	0.00	− 0.14	− 0.11

47. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 19 E.	*−17° 53′ . . .	1	49.6	52.0	53.1	3.0	4.3	5.5	6.7	7.8	18.0	19.2	21.4	28 5.51	− 0.10	−12.38	5 27 53.03	+ 2.36
	O. Arg. S. 4102 .	2	7.5	9.6	11.0	21.6	22.8	24.2	25.5	26.5	37.4	39.0	41.2	30 24.21	0.10	12.39	5 30 11.72	2.04
	Lacaille 1913 . .	3	50.2	52.4	53.7	4.5	5.6	7.0	8.5	9.6	20.4	21.5	24.0	33 7.04	0.10	12.39	5 32 54.55	2.02
	B. A. C. 1809 . .	4	34.5	37.0	38.3	49.7	51.0	52.5	54.0	55.1	6.7	8.0	10.6	36 52.49	0.10	12.39	5 36 40.00	1.75
	O. Arg. S. 4282 .	5	47.3	49.3	50.9	1.0	2.2	3.5	4.8	5.9	16.4	17.5	19.9	40 3.52	0.10	12.39	5 39 51.03	2.10
	Lacaille 1993 . .	6	36.4	38.9	40.2	52.1	53.3	54.8	56.2	57.4	9.3	10.6	13.3	42 54.77	0.11	12.39	5 42 42.27	1.62
	Lacaille 2015 . .	7	15.0	17.3	18.6	30.2	31.4	32.7	34.1	35.3	46.9	48.2	50.6	45 32.75	0.10	12.39	5 45 20.26	1.71
	O. Arg. S. 4458 .	8	30.3	32.6	33.9	44.9	46.2	47.4	48.8	50.0	0.8	2.0	4.6	50 47.41	0.10	12.39	5 50 34.92	1.82
	*+23° 16′ . . .	9	4.5	6.6	7.9	. .	. .	. .	. .	. .	33.5	34.8	37.1	53 20.73	0.12	12.39	5 53 8.22	3.26
	Lalande 11343. .	10	. .	. .	. .	20.2	21.4	22.8	24.0	25.1	. .	. .	. .	53 22.70	0.12	12.39	5 53 10.19	3.26
	*+20° 7′ . . .	11	52.6	55.0	56.2	6.3	7.4	8.5	10.0	11.1	21.2	22.4	24.6	59 8.66	0.11	12.39	5 58 56.16	3.16
	Weisse 55 . . .	12	35.6	37.7	38.9	48.5	49.7	51.0	52.1	53.1	2.6	3.7	6.1	3 50.82	0.10	12.39	6 3 38.33	2.40
	Lacaille 2177 . .	13	11.3	13.4	14.7	25.3	26.5	27.8	29.1	30.4	41.3	42.5	44.6	6 27.90	0.10	12.39	6 6 15.41	1.81
	O. Arg. S. 4851 .	14	16.5	18.8	20.1	30.9	32.0	33.4	35.0	36.1	47.3	48.4	50.5	9 33.55	− 0.10	12.39	6 9 21.06	+ 1.73
	δ Ursæ Min., S. P. .	15	. .	. .	. .	59.0	16.0	37.0	55.5	13.5	. .	. .	. .	14 36.20	+ 1.95	12.39	. . . .	− 9.40
	O. Arg. S. 5215 .	16	30.6	32.9	34.3	45.3	46.6	47.9	49.3	50.4	1.5	2.8	5.2	25 47.89	− 0.10	12.39	6 25 35.40	+ 1.57
	γ Geminorum . .	17	. .	8.2	9.4	19.4	20.4	21.6	23.0	24.1	33.9	35.1	. .	30 21.68	0.11	12.40	. . . .	2.94
	Weisse (2) 891. .	18	45.6	47.6	48.8	58.8	0.0	1.3	2.4	3.4	13.4	14.6	16.8	31 1.16	0.11	12.40	6 30 48.65	2.93
	Lacaille 2392 . .	19	20.9	23.0	24.3	35.1	36.3	37.6	39.0	40.2	51.3	52.5	55.0	35 37.75	0.10	12.40	6 35 25.25	1.60
	O. Arg. S. 5543 .	20	0.4	2.4	3.6	14.0	15.1	16.4	17.7	18.8	29.3	30.5	32.9	37 16.46	0.10	12.40	6 37 3.96	1.78
	Lacaille 2434 . .	21	57.7	59.9	1.0	12.3	13.5	14.9	16.4	17.4	28.5	29.8	32.3	40 14.88	− 0.10	12.40	6 40 2.38	1.47
	B. A. C. 2244 . .	22	48.3	50.4	51.6	2.8	3.7	5.0	6.3	7.4	. .	. .	. .	44 59.44	+ 5.50	12.40	6 44 52.54	1.59
	O. Arg. S. 5772 .	23	. .	. .	. .	17.0	18.3	19.6	21.0	22.2	. .	. .	. .	45 19.62	− 0.10	12.40	6 45 7.12	1.59
	O. Arg. S. 5864 .	24	. .	. .	. .	. .	. .	37.3	38.4	39.5	50.2	51.3	53.7	48 45.07	7.99	12.40	6 48 24.68	1.70
	*−26° 10′ . . .	25	38.2	41.5	42.5	53.4	54.5	55.6	57.0	58.1	8.7	10.0	12.6	53 55.65	0.10	12.40	6 53 43.15	1.59
	Lacaille 2577 . .	26	15.4	17.7	19.0	29.7	31.0	32.4	33.7	34.7	45.5	46.8	49.1	56 32.27	− 0.10	12.40	6 56 19.77	1.53
	Lacaille 2641 . .	27	16.0	18.2	19.5	. .	. .	. .	. .	. .	. .	. .	. .	4 17.90	+ 14.54	12.40	7 4 20.04	1.59
	O. Arg. S. 6317 .	28	. .	. .	. .	. .	. .	. .	. .	. .	47.3	48.7	51.4	4 49.13	− 14.73	12.40	7 4 22.00	1.59
	*−25° 0′ . . .	29	. .	. .	. .	33.5	34.8	36.1	37.4	38.5	. .	. .	. .	4 36.06	0.10	12.40	7 4 23.56	1.59
	27 Canis Majoris . .	30	6.7	9.0	10.4	20.9	22.2	23.5	24.9	26.1	36.7	37.8	40.0	9 23.47	0.10	12.40	7 9 10.97	1.52
	δ Geminorum . .	31	15.0	17.1	18.4	28.8	29.9	31.1	32.4	33.5	43.8	45.1	47.4	12 31.14	0.11	12.40	. . . .	2.90
20 Y.	η Tauri	32	38.1	40.4	41.6	52.0	53.2	54.6	55.9	57.0	7.4	8.7	11.0	39 54.54	0.12	12.65	3 39 41.77	3.85
	27 Tauri	33	18.7	20.9	22.1	32.6	33.8	35.1	36.4	37.5	47.8	49.1	51.6	41 35.05	0.12	12.65	3 41 22.28	3.84
	ζ Persei	34	49.0	51.4	52.8	4.0	5.2	6.6	8.0	9.2	20.5	21.8	24.3	46 6.62	0.13	12.65	3 45 53.84	4.00
	B. A. C. 1235 . .	†35	33.0	56.5	9.5	5.0	17.5	31.5	46.5	58.0	53.0	7.0	31.0	56 31.68	1.55	12.64	3 56 17.49	15.80
	Weisse (2) 22 . .	36	26.0	28.2	29.3	39.2	40.4	41.7	42.8	43.9	53.9	55.1	57.2	3 41.61	0.12	12.64	4 3 28.85	3.59
	*+46° 45′ . . .	37	21.1	24.3	26.0	41.6	43.3	45.1	47.0	48.7	4.2	6.0	9.3	12 45.15	0.18	12.64	4 12 32.33	4.39
	*+14° 49′ . . .	38	53.7	55.9	57.0	. .	. .	. .	. .	. .	21.4	22.5	24.7	21 9.20	0.11	12.64	4 20 56.45	3.50
	*+14° 48′ . . .	39	3.3	5.4	6.5	. .	. .	. .	. .	. .	30.9	32.0	34.2	21 18.72	0.11	12.64	4 21 5.97	3.50
	B. A. C. 1404 . .	40	10.1	12.5	13.7	25.0	26.1	27.5	28.9	30.1	41.2	42.6	45.0	25 27.52	0.10	12.64	4 25 14.78	2.46
	Lacaille 1504 . .	41	. .	. .	. .	. .	. .	. .	57.4	0.0	1.2	2.7	4.0	28 1.06	36.61	12.64	4 27 11.81	2.59
	Weisse 705. . .	42	54.3	56.4	57.5	7.1	8.2	9.5	10.7	11.6	21.3	22.4	24.5	33 9.41	0.11	12.64	3 32 56.66	3.28
	Weisse 721. . .	43	6.1	8.3	9.3	19.1	20.2	21.4	22.7	23.6	33.4	34.4	36.6	34 21.37	0.10	12.64	4 34 8.63	2.96
	β Cœli	44	19.6	22.1	23.4	35.5	36.8	38.4	39.8	41.1	53.1	54.5	57.3	3 38.33	0.11	12.64	4 37 25.58	2.14
	*−1° 35′ . . .	†45	34.5	35.7	36.8	37.9	47.6	48.7	5.8	8.1	9.3	10.6	11.7	41 53.34	17.54	12.63	4 41 23.17	3.05
	*+1° 15′ . . .	46	. .	. .	. .	59.0	0.1	2.0	16.8	19.0	20.1	21.6	22.7	43 12.66	25.68	12.63	4 42 34.35	3.11
	Weisse 925 . .	47	40.3	42.4	43.5	53.2	54.3	55.4	56.6	57.6	7.1	8.2	10.4	43 55.36	0.10	12.63	4 43 42.63	3.10
	B. A. C. 1510 . .	48	30.5	37.7	41.7	16.0	20.3	24.5	29.0	32.2	7.2	11.2	18.7	48 24.45	0.46	12.63	4 48 11.36	6.67
	°+60° 15′ . . .	49	24.2	28.5	30.6	. .	. .	. .	. .	. .	18.3	20.7	24.8	51 54.52	0.25	12.63	4 51 41.64	4.94
	β Camelopardi . .	50	. .	. .	. .	55.1	57.3	59.7	2.1	4.0	. .	. .	. .	51 59.64	− 0.25	−12.63	4 51 46.76	+ 4.94

35. Observations made with eye and ear.
45. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 19, 6.2	− 12.39	− 0.010	− 0.02	− 0.10

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.
Feb. 20	O. Arg. S. 3576 .	1	. .	. .	. .	16.5	17.8	20.0	37.1	39.6	40.9	42.6	44.0	55 32.31	− 29.56	−12.63	4 54 50.12	+ 2.25
Y.	*−23° 48′ . . .	2	57.0	59.1	0.3	10.7	11.8	13.0	14.4	15.5	25.9	27.4	29.4	0 13.14	0.10	12.63	5 0 0.41	2.49
	Weisse 1379 . .	3	16.6	18.7	19.8	29.6	30.7	32.0	33.3	34.2	44.1	45.2	47.3	1 31.95	0.10	12.63	5 1 19.22	2.68
	*−25° 32′ . . .	4	. .	. .	. .	6.3	7.4	8.8	10.0	11.1	21.9	23.1	25.2	5 14.22	5.62	12.63	5 4 55.97	2.30
	*−25° 22′ . . .	5	. .	. .	. .	57.2	58.5	0.9	17.4	19.5	21.1	22.7	23.9	6 12.65	28.41	12.63	5 5 31.61	2.30
	O. Arg. S. 3812 .	6	28.0	30.4	31.5	42.4	43.7	44.9	46.1	47.3	58.8	59.3	1.7	10 44.92	0.10	12.63	5 10 32.19	2.20
	O. Arg. S. 3846 .	7	44.0	46.3	47.6	58.5	59.7	1.0	2.3	3.6	14.4	15.7	18.0	13 1.01	0.10	12.63	5 12 48.28	2.18
	*−27° 22′ . . .	†8	. .	. .	. .	. .	. .	. .	7.6	11.5	12.6	13.8	15.0	14 12.10	37.20	12.63	5 13 22.27	2.18
	B. A. C. 1662 . .	9	39.0	3.0	16.0	9.5	22.0	35.3	50.0	1.0	55.0	8.0	32.0	20 35.53	1.53	12.63	5 20 21.37	14.03
	δ Orionis . . .	10	. .	. .	. .	29.5	30.6	31.8	33.0	34.1	43.7	44.8	47.0	25 36.81	5.07	12.62	5 25 19.12	2.85
	*+26° 41′ . . .	11	16.7	19.1	20.3	31.0	32.3	33.6	35.0	36.1	46.8	48.0	50.4	29 33.57	0.13	12.62	5 29 20.82	3.47
	Weisse (2) 912 .	12	43.7	46.1	47.4	58.0	59.2	0.6	1.9	3.0	13.6	15.0	17.4	31 0.54	0.13	12.62	5 30 47.79	3.46
	*+21° 16′ . . .	13	. .	. .	. .	42.6	43.8	46.0	1.8	4.1	5.4	6.9	8.1	33 57.34	27.56	12.62	5 33 17.16	3.31
	Lacaille 1964 . .	14	28.4	30.7	32.0	43.6	45.0	46.4	47.9	49.1	1.0	2.2	4.7	37 46.45	0.10	12.62	5 37 33.73	1.71
	*+9° 50′ . . .	15	50.3	52.4	53.4	3.0	4.1	5.3	6.5	7.5	17.4	18.4	20.6	42 5.35	0.11	12.62	5 41 52.62	3.00
	O. Arg. N. 6356 .	16	29.1	35.9	39.8	11.5	15.0	18.9	22.9	26.1	57.9	1.6	8.6	50 18.85	0.43	12.62	5 50 5.80	5.86
	*+26° 26′ . . .	17	. .	. .	. .	28.6	29.7	31.0	32.3	33.5	44.3	45.5	47.8	54 36.59	5.69	12.62	5 54 18.28	3.35
	Weisse 1500 . .	18	52.8	55.1	56.2	6.0	7.1	8.3	9.5	10.6	20.5	21.6	23.8	59 8.32	0.10	12.62	5 58 55.60	2.30
	22 Camelopardi . .	19	55.8	1.8	4.8	32.0	35.1	38.7	42.0	44.8	12.0	15.1	21.1	4 38.47	0.36	12.62	6 4 25.49	5.31
	O. Arg. S. 4851 .	20	16.7	19.0	20.2	31.1	32.3	33.7	35.1	36.3	47.3	48.6	51.0	9 33.75	0.10	12.62	6 9 21.03	1.75
	*−28° 57′ . . .	21	3.6	6.0	7.2	18.4	19.5	20.8	22.1	23.2	34.5	35.8	38.1	13 20.84	0.10	12.62	6 13 8.12	1.71
	O. Arg. S. 4961 .	22	0.6	2.7	4.0	15.1	16.3	17.6	19.0	20.3	31.1	32.5	34.9	14 17.65	0.10	12.62	6 14 4.93	1.70
	*−29° 33′ . . .	23	11.3	13.6	14.7	. .	. .	. .	. .	. .	42.1	43.3	45.5	15 28.42	0.10	12.62	6 15 15.70	1.67
	*−29° 33′ . . .	24	. .	. .	. .	26.4	27.4	28.9	30.3	31.4	. .	. .	. .	15 28.88	0.10	12.62	6 15 16.16	1.67
	Lacaille 2232 . .	25	. .	. .	. .	3.6	4.8	6.2	7.5	8.6	19.7	21.0	23.6	16 11.88	5.82	12.62	6 15 53.44	1.67
	Weisse (2) 533 .	26	55.0	57.3	58.6	9.1	10.3	11.6	12.9	14.0	24.5	25.8	28.1	20 11.56	0.12	12.61	6 19 58.83	3.18
	B. A. C. 2095 . .	27	. .	. .	. .	52.6	58.9	5.6	12.3	17.6	. .	. .	. .	24 5.40	0.72	12.61	6 23 52.07	7.29
	Lalande 12557 .	28	57.4	59.7	0.8	11.3	12.5	13.8	15.1	16.3	26.8	28.0	30.4	27 13.83	0.12	12.61	6 27 1.10	3.16
	Weisse (2) 838 .	29	22.0	24.4	25.5	36.1	37.3	38.5	39.8	41.0	51.5	52.8	55.0	29 38.54	0.12	12.61	6 29 25.81	3.15
	Weisse (2) 909 .	30	26.0	28.3	29.5	40.1	41.3	42.6	43.9	45.0	55.5	56.7	59.0	31 42.54	0.12	12.61	6 31 29.81	3.14
	Weisse (2) 1027 .	31	6.6	9.5	10.9	24.5	25.9	27.6	29.4	30.9	44.3	45.9	48.7	35 27.65	0.17	12.61	6 35 14.87	3.66
	56 Aurigæ . . .	32	. .	. .	. .	28.1	29.4	31.0	32.7	34.1	. .	. .	. .	37 31.06	0.17	12.61	6 37 18.28	3.63
	*+43° 44′ . . .	33	. .	. .	. .	49.0	50.6	53.6	14.0	16.9	18.6	20.5	22.0	38 8.15	35.56	12.61	6 37 19.98	3.63
	51 Cephei	34	. .	. .	. .	. .	. .	. .	58.5	42.0	8.0	39.0	1.0	50 5.70	11 28.20	12.61	. . . .	18.11
	Lalande 13569 .	35	10.6	13.2	14.6	26.5	27.7	29.2	30.8	32.0	43.9	45.2	47.9	55 29.24	0.15	12.61	6 55 16.48	3.33
	Lalande 13601 .	36	. .	. .	. .	29.4	30.8	33.4	51.5	54.1	55.6	57.5	58.9	56 46.40	31.65	12.61	6 56 2.14	3.30
	B. A. C. 2326 . .	37	. .	. .	. .	21.9	30.1	39.1	48.6	56.7	. .	. .	. .	3 39.28	1.02	12.60	7 3 25.66	7.85
	*+42° 8′ . . .	38	36.0	38.7	40.1	53.2	54.5	56.0	57.7	59.0	12.0	13.5	16.3	6 56.09	0.17	12.60	7 6 43.32	3.43
	Lalande 14120 .	39	30.6	33.1	34.5	46.7	47.8	49.4	50.8	52.1	4.2	5.6	8.1	10 49.35	0.15	12.60	7 10 36.60	3.27
	Weisse (2) 389 .	40	14.4	17.1	18.6	31.6	32.9	34.6	36.1	37.5	50.4	51.9	54.7	14 34.53	− 0.17	12.60	7 14 21.76	3.37
	*−35° 40′ . . .	41	1.9	3.4	4.9	6.5	9.5	. .	23.4	26.0	27.5	29.2	30.5	17.46.28	+ 0.32	12.60	7 17 34.00	1.05
	Lacaille 2767 . .	42	28.5	31.0	32.3	44.4	45.4	46.9	48.3	49.6	1.5	2.8	5.3	17 46.91	− 0.11	12.60	7 17 34.20	1.05
	Weisse (2) 594 .	43	56.0	58.6	0.2	12.8	14.1	15.7	17.3	18.6	31.2	32.8	35.6	22 15.72	0.16	12.60	7 22 2.96	3.30
	Weisse (2) 678 .	44	34.2	37.0	38.4	51.2	52.6	54.2	55.8	57.1	9.9	11.5	14.3	24 54.20	0.17	12.60	7 24 41.43	3.31
	Weisse (2) 789 .	45	44.0	45.8	47.3	48.9	52.1	. .	11.8	14.8	16.1	18.3	19.8	28 31.89	− 0.17	12.60	7 28 19.12	3.29
	Weisse (2) 791 .	46	13.1	15.9	17.2	30.1	31.5	33.2	34.9	36.1	48.8	50.3	53.0	28 33.10	+ 0.29	12.60	7 28 20.79	3.28
	α Canis Minoris .	47	25.1	27.3	28.3	37.9	39.0	40.1	41.2	42.3	52.0	53.1	55.1	32 40.13	− 0.11	12.60	7 32 27.42	2.40
	*−34° 32′ . . .	48	. .	. .	. .	37.0	38.3	39.6	41.0	42.3	54.1	55.3	58.0	34 45.70	6.13	12.60	7 34 26.97	1.05
	*−34° 31′ . . .	49	. .	. .	. .	19.4	20.7	22.1	23.5	24.6	36.4	37.8	40.3	35 28.10	6.13	12.60	7 35 9.37	1.05
	*−14° 19′ . . .	50	21.4	23.4	24.6	34.5	35.7	36.9	38.1	39.2	49.0	50.1	52.3	41 36.84	− 0.10	−12.60	7 41 24.14	+ 1.85

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 20, 5.8	− 12.62	+ 0.013	− 0.03	− 0.10

8. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 20	*−14° 27′	1	. .	. .	. .	. .	. .	. .	9.2	11.5	12.7	14.2	15.4	42 12.60	− 34.14	−12.60	7 41 25.86	+ 1.85
Y.	*+ 0° 26′	2	. .	. .	. .	35.5	36.7	38.7	53.4	55.5	56.8	58.2	59.4	44 49.28	25.67	12.60	7 44 11.01	2.27
	Weisse (2) 1366	3	55.3	57.5	58.6	8.8	9.9	11.2	12.5	13.5	23.9	25.0	27.1	49 11.21	0.12	12.59	7 48 58.50	2.72
	Weisse 1477	4	. .	. .	. .	59.6	0.8	2.0	3.1	4.2	14.0	15.2	17.2	51 7.01	5.21	12.59	7 50 49.21	2.53
	Lacaille 3093	5	44.5	47.0	48.2	0.4	1.7	3.1	4.7	5.9	17.9	19.4	21.9	54 3.15	0.11	12.59	7 53 50.45	0.87
	O. Arg. S. 7865	6	46.8	49.0	50.1	0.9	2.1	3.4	4.7	5.8	16.5	17.6	19.9	57 3.35	0.10	12.59	7 56 50.66	1.39
	*−25° 40′	7	11.5	13.8	15.0	25.6	26.8	28.1	29.4	30.5	41.1	42.4	44.8	58 28.09	0.10	12.59	7 58 15.40	1.39
	Lalande 15882	8	34.7	37.3	38.5	50.4	51.7	53.1	54.6	55.9	7.6	9.0	11.6	1 53.13	0.15	12.59	8 1 40.39	2.99
	Lacaille 3192	9	24.7	27.2	28.3	39.5	40.6	42.0	43.3	44.5	55.5	56.7	59.1	7 41.95	0.10	12.59	8 7 29.26	1.20
	O. Arg. S. 8295	10	34.1	36.4	37.7	49.0	50.1	51.4	52.8	53.9	5.3	6.5	8.9	10 51.46	0.10	12.59	8 10 38.77	1.15
	Lacaille 3258	11	. .	18.4	19.8	32.0	33.2	34.6	36.2	37.5	49.4	50.8	. .	13 34.66	0.11	12.59	8 13 21.96	0.81
	Lalande 16413	12	36.8	39.2	40.5	52.3	53.6	55.0	56.6	57.8	9.6	10.9	13.5	16 55.07	0.15	12.59	8 16 42.33	2.92
	*−27° 19′	13	3.6	6.0	7.1	18.1	19.3	20.4	21.8	22.9	33.9	35.2	37.4	19 20.52	0.10	12.59	8 19 7.83	1.28
	*−34° 33′	14	25.1	27.9	29.1	40.9	42.2	43.6	45.1	46.3	57.9	59.3	1.8	22 43.56	0.10	12.59	8 22 30.87	0.93
	Lacaille 3356	15	10.0	12.4	13.6	25.0	26.1	27.5	28.9	30.1	41.4	42.9	45.2	25 27.55	0.10	12.59	8 25 14.86	1.07
	B. A. C. 2899	16	13.8	15.8	17.0	27.3	28.4	29.7	30.9	31.9	42.3	43.5	45.6	30 29.65	0.12	12.59	8 30 16.94	2.56
	*+19° 44′	17	12.1	14.1	15.3	25.5	26.6	27.9	29.1	30.2	40.5	41.6	43.8	32 27.88	0.12	12.58	8 32 15.18	2.56
	*+19° 48′	18	. .	. .	. .	0.9	2.0	3.2	4.6	5.7	15.8	17.0	19.2	33 8.55	5.40	12.58	8 32 50.57	2.56
	*+19° 48′ ±	19	. .	. .	. .	27.0	28.1	29.4	30.7	31.7	. .	. .	. .	33 29.38	0.12	12.58	8 33 16.68	2.55
	*+19° 43′	20	45.9	48.1	49.3	59.7	0.7	1.9	3.2	4.3	14.3	15.5	17.8	34 1.88	0.12	12.58	8 33 49.18	2.55
	ε Hydræ	21	48.8	50.9	52.0	1.6	2.7	3.9	5.1	6.1	15.8	16.9	19.1	40 3.90	− 0.11	12.58	8 40 51.21	2.26
24	γ Geminorum	22	2.8	4.9	6.1	16.0	17.2	18.4	19.5	20.6	30.7	32.0	34.1	30 18.39	+ 0.08	9.38	. . . .	3.00
E.	Weisse (2) 891	23	42.3	44.4	45.5	55.5	56.5	57.7	59.0	0.2	10.3	11.4	13.4	30 57.84	0.08	9.38	6 30 48.54	3.00
	Lalande 12849	24	. .	. .	. .	30.1	31.4	32.7	34.1	35.4	. .	. .	. .	35 32.74	0.10	9.38	6 35 23.46	3.48
	Weisse (2) 1044	25	15.1	17.6	19.0	. .	. .	. .	. .	. .	48.4	49.6	52.1	35 33.63	0.10	9.38	6 35 24.35	3.48
	Weisse (2) 1171	26	. .	. .	. .	28.3	29.7	31.3	33.0	34.3	. .	. .	. .	39 31.32	+ 0.12	9.38	6 39 22.06	3.70
	O. Arg. N. 7274	27	. .	. .	. .	6.3	8.0	11.5	36.5	40.4	42.4	44.5	46.5	42 29.51	− 42.26	9.38	6 41 37.87	3.98
	Lacaille 2496	28	. .	. .	. .	54.5	55.5	56.8	58.0	59.1	. .	. .	. .	47 56.78	+ 0.07	9.38	6 47 47.47	1.77
	*−24° 47′	29	6.8	8.9	10.4	20.9	22.0	23.3	24.5	25.6	36.3	37.5	39.6	51 23.25	0.07	9.38	6 51 13.94	1.74
	Lacaille 2558	30	34.4	36.5	37.7	48.6	49.7	51.0	52.2	53.5	4.5	5.6	8.2	54 51.08	0.07	9.38	6 54 41.77	1.60
	Weisse (2) 1704	31	29.2	31.8	33.4	46.5	47.7	49.4	51.2	52.5	5.8	7.2	10.0	57 49.52	+ 0.12	9.38	6 57 40.26	3.57
	Weisse (2) 1728	32	. .	. .	. .	46.0	47.5	50.1	11.4	14.5	16.4	17.9	19.4	59 5.40	− 35.44	9.38	6 58 20.58	3.51
	*−26° 4′	†33	2.8	5.4	6.7	. .	. .	. .	. .	. .	32.7	34.2	36.9	2 19.78	+ 0.07	9.38	7 2 10.47	1.63
	Lacaille 2641	34	. .	. .	. .	26.7	28.0	29.1	30.5	31.7	. .	. .	. .	4 29.20	+ 0.07	9.38	7 4 19.89	1.66
	Weisse 274.	35	46.0	48.1	49.4	. .	. .	. .	. .	. .	13.7	14.9	17.0	10 1.52	+ 0.07	9.38	7 9 52.21	2.02
	Weisse 283.	36	0.7	2.6	4.0	. .	. .	. .	. .	. .	28.5	29.6	31.8	10 16.20	0.07	9.38	7 10 6.89	2.02
	*−14° 37′	37	20.3	22.5	23.5	33.5	34.5	35.8	37.0	38.2	. .	. .	. .	14 30.66	+ 5.21	9.39	7 14 26.48	1.99
	*−14° 37′	38	. .	. .	. .	45.6	46.6	47.9	49.1	50.3	0.3	1.4	3.4	14 53.08	− 5.07	9.39	7 14 38.62	1.99
	Weisse 500.	49	9.2	11.3	12.6	. .	. .	. .	. .	. .	37.0	38.1	40.2	17 24.73	+ 0.07	9.39	7 17 15.41	1.98
	Weisse 502.	40	. .	. .	. .	23.3	24.4	25.7	27.1	28.1	. .	. .	. .	17 25.72	0.07	9.39	7 17 16.40	1.98
	Lalande 14619.	41	18.6	20.7	21.9	31.9	33.0	34.1	35.6	36.5	46.5	47.6	49.9	23 34.21	+ 0.07	9.39	7 23 24.89	1.95
	*−24° 53′	42	. .	. .	. .	. .	. .	. .	19.0	21.6	23.0	24.5	25.8	25 22.78	− 37.03	9.39	7 24 36.36	1.58
	Weisse 871.	43	49.4	51.4	52.6	2.5	3.5	4.7	6.1	7.4	. .	. .	. .	28 59.70	+ 5.21	9.39	7 28 55.52	1.93
	O. Arg. S. 7053	44	. .	. .	. .	27.4	28.8	30.1	31.3	32.4	. .	. .	. .	29 30.00	0.07	9.39	7 29 20.68	1.53
	O. Arg. S. 7065	45	. .	. .	. .	50.3	51.4	52.7	54.0	55.4	. .	. .	. .	29 52.76	+ 0.07	9.39	7 29 43.44	1.53
	*−14° 42′	46	. .	. .	. .	38.6	39.6	41.8	57.5	59.9	1.4	2.5	3.9	32 53.15	− 26.82	9.39	7 32 16.94	1.92
	Lacaille 2952	47	13.7	16.0	17.4	27.8	28.9	30.1	31.4	32.6	43.0	44.3	46.6	40 30.16	+ 0.07	9.39	7 40 20.84	1.56
	O. Arg. S. 7442	48	14.5	16.5	17.9	28.5	29.6	30.8	32.1	33.4	44.0	45.2	47.1	42 30.87	0.07	9.39	7 42 21.55	1.56
	O. Arg. S. 7636	59	58.5	1.0	2.1	12.9	14.1	15.5	16.8	17.9	29.0	30.1	32.4	49 15.48	0.07	9.39	7 49 6.16	1.38
	*−27° 37′	50	30.3	32.5	34.0	44.9	46.1	47.4	48.6	49.7	0.6	1.8	4.1	52 47.27	+ 0.07	− 9.39	7 52 47.27	+ 1.37

February 22. Image west 0r.08. Clamp west.
Image east 0r.15. Clamp east.

33. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 24, 8.1	− 9.39	− 0.006	+ 0.02	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 24 E.	λ Ursæ Minoris, S.P.	1	54.0	55.0	56.0	. .	. .	50.5	54.0	44.5	14.5	12.5	2.5	1 13.08	− 6 27.75	− 9.39	. . . .	− 18.66
	O. Arg. S. 7882 .	2	. .	. .	. .	59.3	0.5	2.6	19.4	22.0	23.5	24.7	26.1	58 14.76	− 28.45	9.39	7 57 36.92	+ 1.50
	O. Arg. S. 8338 .	3	2.2	4.3	5.5	. .	. .	. .	. .	. .	32.0	33.1	35.2	12 18.72	+ 0.07	9.39	8 12 9.40	1.43
	O. Arg. S. 8343 .	4	. .	. .	. .	19.8	21.0	22.1	23.4	24.5	. .	. .	. .	12 22.16	0.07	9.39	8 12 12.84	1.43
	O. Arg. S. 8345 .	5	14.4	16.5	17.8	. .	. .	. .	. .	. .	43.9	45.2	47.2	12 30.83	0.07	9.39	8 12 21.51	1.43
	O. Arg. S. 8484 .	6	6.0	8.3	9.7	20.6	21.9	23.4	24.7	25.9	37.0	38.3	40.6	18 23.31	0.07	9.39	8 18 13.99	1.19
	*−34° 35′ . . .	7	21.8	24.2	25.7	37.4	38.6	40.0	41.5	42.7	54.5	55.6	58.2	22 40.02	0.07	9.39	8 22 30.70	0.97
	*−31° 10′ . . .	8	. .	. .	. .	53.7	55.0	56.4	57.9	59.2	. .	. .	. .	26 56.44	0.07	9.39	8 26 47.12	1.13
	*+20° 3′ . . .	9	59.3	1.5	2.7	12.9	13.9	15.1	16.4	17.5	27.9	29.0	31.1	30 15.21	0.08	9.39	8 30 5.90	2.59
	*+20° 3′ . . .	10	5.1	7.5	8.6	. .	. .	. .	. .	. .	. .	. .	. .	32 7.07	14.20	9.39	8 32 11.88	2.58
	B. A. C. 2914 .	11	. .	. .	. .	27.5	28.5	29.7	30.9	32.1	. .	. .	. .	32 29.74	0.08	9.39	8 32 20.43	2.58
	Weisse (2) 790 .	12	. .	. .	. .	33.2	34.3	35.5	36.8	37.9	. .	. .	. .	32 35.54	0.08	9.39	8 32 26.23	2.58
	Lalande 17182 .	13	4.8	7.5	8.8	21.0	22.2	23.9	25.4	26.5	38.8	40.1	42.7	37 23.79	0.10	9.39	8 37 14.50	2.90
	ε Hydræ	14	45.5	47.5	48.7	58.4	59.4	0.5	1.6	2.6	12.4	13.5	15.6	40 0.52	0.07	9.39	. . . .	2.28
	*+27° 41′ . . .	15	50.8	53.2	54.5	5.2	6.3	7.7	9.1	10.3	21.1	22.3	24.5	43 7.73	0.09	9.39	8 42 58.43	2.69
	Weisse 1282 . .	16	55.6	57.6	58.9	8.8	9.9	10.9	12.0	13.1	23.0	23.9	26.0	50 10.88	0.07	9.39	8 50 1.56	1.75
	*−13° 10′ . . .	17	35.4	37.5	38.6	48.5	49.5	50.7	52.0	53.1	3.0	4.0	6.1	50 50.76	0.07	9.39	8 50 41.44	1.76
	B. A. C. 3076 .	18	31.4	33.5	34.7	44.4	45.4	46.4	47.5	48.5	58.4	59.5	1.6	54 46.47	0.07	9.39	8 54 37.15	2.24
	B. A. C. 3078 .	19	49.3	51.4	52.5	2.0	3.1	4.3	5.5	6.5	16.3	17.5	19.5	55 4.35	0.07	9.39	8 54 55.03	2.24
	κ Cancri	20	34.0	36.1	37.2	47.0	48.0	49.1	50.3	51.5	1.4	2.4	4.6	0 49.24	0.07	9.40	. . . .	2.32
27 Y.	γ Tauri	21	14.3	16.5	17.8	27.6	28.6	29.9	31.1	32.3	42.2	43.3	45.6	12 29.93	0.09	9.85	4 12 20.17	3.67
	δ Tauri	22	59.4	1.6	2.7	12.8	13.8	15.0	16.2	17.4	27.5	28.6	30.6	21 15.05	0.09	9.85	4 21 5.29	3.64
	ω Eridani . . .	23	22.0	24.3	25.3	34.9	36.0	37.1	38.3	39.5	49.0	50.1	52.3	46 37.16	0.06	9.85	4 46 27.37	3.06
	O. Arg. S. 3488 .	24	7.6	10.0	11.2	22.2	23.1	24.4	25.7	26.9	37.7	39.0	41.4	49 24.47	0.05	9.85	4 49 14.67	2.53
	Weisse (2) 1249 .	25	45.0	47.3	48.6	59.7	1.0	2.5	3.8	5.0	16.1	17.4	19.7	56 2.37	+ 0.11	9.84	4 55 52.64	3.84
	B. A. C. 1562 .	26	. .	. .	. .	9.8	11.0	13.3	30.3	33.0	34.4	35.7	37.4	58 25.61	− 28.91	9.84	4 57 46.86	3.72
	*+29° 39′ . . .	27	10.9	13.4	14.8	. .	. .	. .	. .	. .	42.0	43.1	45.4	1 28.27	+ 0.11	9.84	5 1 18.54	3.80
	Weisse (2) 1414 .	28	15.8	18.3	19.5	30.5	31.7	33.0	34.4	35.6	46.6	47.9	50.2	1 33.05	0.11	9.84	5 1 23.32	3.80
	*+29° 46′ ± . .	29	10.4	12.7	14.0	25.0	26.2	27.6	29.0	30.1	41.5	42.6	45.0	3 27.65	0.11	9.84	5 3 17.92	3.80
	O. Arg. N. 5930 .	30	21.5	27.7	30.9	59.7	2.4	6.1	9.6	12.5	41.1	44.2	50.6	24 6.03	0.35	9.84	5 23 56.54	6.15
	O. Arg. N. 6082 .	31	10.0	16.2	19.5	47.8	50.4	54.4	57.6	1.0	29.6	32.5	38.6	32 54.33	0.35	9.84	5 32 44.84	6.08
	*+71° 38′ . . .	32	42.3	49.1	52.9	. .	. .	. .	. .	. .	8.0	11.7	18.1	43 0.35	0.37	9.83	5 42 50.89	6.21
	*+71° 41′ . . .	33	. .	. .	. .	25.5	29.1	33.0	36.6	40.2	. .	. .	. .	43 32.88	+ 0.37	9.83	5 43 23.42	6.22
	*+20° 10′ . . .	34	. .	. .	. .	8.4	9.4	10.7	11.9	13.1	23.4	24.5	26.8	51 16.02	− 5.21	9.83	5 51 0.98	3.32
	*+20° 4′ . . .	35	2.9	4.0	5.6	6.9	9.1	. .	12.8	15.5	16.7	18.1	19.5	51 41.11	− 0.28	9.83	5 51 31.00	3.32
	*+20° 3′ . . .	36	17.6	19.6	20.9	. .	. .	. .	. .	. .	46.1	47.3	49.5	52 33.50	+ 0.09	9.83	5 52 23.76	3.32
	*+20° 3′ ± . .	37	. .	. .	. .	. .	. .	. .	58.1	0.9	2.1	3.5	4.8	53 1.88	− 35.74	9.83	5 52 16.31	3.31
	Lalande 11529 .	38	3.4	6.0	7.7	19.6	20.9	22.6	24.0	25.4	37.5	38.8	41.5	59 22.49	+ 0.12	9.83	5 59 12.78	3.78
	π^1 Columbæ . . .	39	28.1	30.9	32.3	45.5	46.8	48.5	49.9	51.3	4.3	5.8	8.5	2 48.35	− 0.05	9.83	6 2 38.47	1.34
	Lalande 11959 .	40	32.8	35.6	37.0	49.2	50.5	52.2	53.7	55.0	7.3	8.6	11.1	10 52.09	+ 0.12	9.83	6 10 42.38	3.73
	μ Geminorum . .	41	55.8	58.2	59.5	10.0	11.0	12.2	13.5	14.6	25.1	26.4	28.4	15 12.25	0.09	9.83	6 15 2.51	3.28
	8 Monocerotis . .	42	44.7	46.7	48.0	. .	. .	. .	. .	. .	11.6	12.6	14.8	16 59.73	0.07	9.83	6 16 49.97	2.82
	B. A. C. 2060 . .	43	. .	. .	. .	58.0	59.0	0.1	1.3	2.4	. .	. .	. .	17 0.16	0.07	9.83	6 16 50.40	2.82
	48 Aurigæ . . .	44	1.6	4.0	5.2	16.4	17.4	19.0	20.4	21.5	32.7	34.0	36.4	20 18.96	+ 0.11	9.83	6 20 9.24	+ 3.45
	δ Ursæ Minoris, S.P.	45	. .	. .	. .	. .	. .	. .	2.5	38.0	58.0	22.0	41.0	23 56.30	− 9 18.26	9.83		− 11.88
	Lacaille 2342 . .	46	47.8	50.1	51.5	2.1	3.3	4.7	6.0	7.1	17.6	18.8	21.2	30 4.56	+ 0.05	9.82	6 29 54.79	+ 1 87
	O.Arg.S. 5343, (1st *)	47	. .	. .	. .	. .	. .	. .	20.8	23.7	25.1	26.5	27.9	31 24.80	− 36.78	9.82	6 30 38.20	1 93
	O.Arg.S. 5343, (2d *)	48	. .	. .	. .	47.7	48.8	50.1	51.3	52.5	3.0	4.2	6.5	30 55.51	− 5.39	9.82	6 30 40.30	1.93
	Lacaille 2399 . .	49	0.2	2.7	4.0	15.0	16.2	17.7	19.1	20.3	31.6	32.8	35.3	36 17.72	+ 0.05	9.82	6 36 7.95	1.64
	*+23° 36′ . . .	50	46.8	49.4	50.8	1.0	2.1	3.6	4.8	5.9	16.5	17.6	19.8	41 3.48	0.10	9.82	6 40 53.76	3.17
	θ Geminorum . .	51	1.2	3.8	5.1	16.8	17.9	19.4	20.9	22.1	33.7	35.0	37.6	44 19.41	+ 0.12	− 9.82	6 44 9.71	+ 3.43

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Feb. 27, 6.8	− 9.82	+ 0.013	+ 0.05	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Feb. 27 Y.	*−14° 26′ . . .	1	27.4	29.6	30.7	40.7	41.7	43.0	44.1	45.3	5.1	6.3	8.5	47 42.95	+ 0.06	− 9.82	6 47 33.19	+ 2.16
	Weisse 1579 . .	2	46.6	48.9	50.1	. .	. .	. .	. .	. .	14.4	15.5	17.7	52 2.20	0.06	9.82	6 51 52.44	2.13
	Weisse 1587 . .	3	56.6	58.7	59.9	. .	. .	. .	. .	. .	24.2	25.3	27.3	52 12.00	0.06	9.82	6 52 2.24	2.13
	*−14° 50′ . . .	4	49.9	52.0	53.1	3.1	4.2	5.5	6.7	7.7	17.7	18.7	20.9	54 5.41	0.06	9.82	6 53 55.65	2.11
	Weisse (2) 1728 .	5	. .	. .	. .	27.2	28.8	30.6	32.1	33.5	. .	. .	. .	58 30.44	0.14	9.82	6 58 20.76	3.61
	O. Arg. S. 6364 .	6	58.7	1.2	2.4	12.7	13.9	15.2	16.4	17.5	28.0	29.5	30.5	6 15.09	0.06	9.82	7 6 5.33	1.75
	*+38° 37′ . . .	7	57.0	59.8	1.2	13.6	14.7	16.3	17.7	19.1	31.5	32.7	35.4	9 16.27	0.13	9.82	7 9 6.58	3.42
	Weisse (2) 347 .	8	42.6	45.4	46.8	59.5	0.9	2.6	4.1	5.4	18.4	19.8	22.6	13 2.55	0.13	9.81	7 12 52.87	3.48
	Weisse (2) 389 .	9	11.2	14.0	15.6	28.6	29.8	31.4	33.0	34.4	47.5	48.7	51.4	14 31.42	0.13	9.81	7 14 21.74	3.48
	O. Arg. S. 6728 .	10	57.4	59.6	0.8	11.4	12.5	13.8	15.0	16.2	26.7	27.9	30.3	18 13.78	0.06	9.81	7 18 4.03	1.66
	Weisse (2) 594 .	11	52.8	55.6	57.0	9.8	11.0	12.6	14.3	15.6	28.3	29.6	32.3	22 12.63	0.13	9.81	7 22 2.95	3.40
	Weisse (2) 678 .	12	31.0	34.0	35.4	48.1	49.5	51.1	52.6	54.1	6.8	8.4	11.1	24 51.10	0.13	9.81	7 24 41.42	3.41
	O. Arg. S. 7026 .	13	39.5	41.9	43.1	53.9	55.2	56.5	57.9	59.1	9.9	11.0	13.6	27 56.51	0.05	9.81	7 27 46.75	1.49
	o Geminorum . .	14	28.7	31.3	32.6	44.4	45.5	47.0	48.5	49.7	1.5	2.7	5.4	30 47.03	0.12	9.81	7 30 37.34	3.21
	m Puppis	15	. .	47.3	48.3	59.1	0.2	1.5	2.8	3.9	14.6	15.8	. .	32 1.50	0.05	9.81	7 31 51.74	1.59
	Lacaille 2916 . .	16	40.4	43.0	44.6	55.7	56.9	58.2	59.6	0.9	12.3	13.4	16.0	35 58.27	0.05	9.81	7 35 48.51	1.30
	4 Puppis	17	50.0	52.1	53.4	3.2	4.3	5.4	6.6	7.6	17.7	18.8	20.9	40 5.45	0.06	9.81	7 39 55.70	1.94
	*+38° 8′ . . .	18	52.4	55.1	56.6	8.8	10.1	11.4	12.9	14.1	26.6	27.9	30.5	43 11.49	0.12	9.81	7 43 1.80	3.22
	φ Geminorum . .	19	22.1	24.5	25.7	36.6	37.7	39.0	40.4	41.6	52.4	53.6	55.9	45 39.05	0.10	9.81	7 45 29.34	2.96
	53 Camelopardi . .	20	. .	. .	. .	36.6	38.6	40.9	43.5	45.6	. .	. .	. .	50 41.04	0.24	9.81	7 50 31.47	3.88
	*+60° 44′ . . .	21	56.3	0.7	3.0	22.6	24.7	26.9	29.5	31.6	51.4	53.6	57.9	51 27.11	0.24	9.81	7 51 17.54	3.88
	*+20° 8′ . . .	22	43.8	45.9	47.3	57.6	58.6	59.8	1.1	2.3	12.5	13.6	15.8	56 59.85	0.09	9.81	7 56 50.13	2.75
	Lalande 15868 .	23	14.1	16.9	18.5	31.3	32.6	34.4	35.7	37.4	50.4	51.7	54.5	1 34.32	+ 0.14	9.80	8 1 24.66	3.21
	Lacaille 3168 . .	24	. .	. .	. .	57.9	59.0	0.6	2.0	3.3	15.4	16.8	19.3	4 6.79	− 6.21	9.80	8 3 50.78	0.90
	O. Arg. S. 8225 .	25	34.0	36.5	37.6	48.3	49.3	50.6	51.8	53.0	3.5	4.7	7.0	7 50.57	+ 0.06	9.80	8 7 40.83	1.52
	O. Arg. S. 8295 .	26	30.8	33.3	34.4	45.6	46.9	48.4	49.6	50.9	2.0	3.4	5.7	10 48.27	0.05	9.80	8 10 38.52	1.23
	O. Arg. S. 8383 .	27	0.6	3.2	4.3	14.8	16.0	17.3	18.6	19.7	30.5	31.7	33.9	14 17.33	0.05	9.80	8 14 7.58	1.45
	B. A. C. 2811 . .	28	11.8	14.0	15.4	25.9	27.2	28.6	29.8	31.0	41.7	42.8	45.2	17 28.49	0.05	9.80	8 17 18.74	1.41
	B. A. C. 2838 . .	29	7.9	10.8	12.1	25.3	26.5	28.3	29.8	31.0	43.9	45.5	48.2	21 28.12	0.05	9.80	8 21 18.37	0.59
	O. Arg. S. 8610 .	30	50.6	52.9	54.0	5.2	6.5	7.9	9.3	10.5	21.6	22.9	25.1	24 7.86	+ 0.05	9.80	8 23 58.11	1.23
	O. Arg. S. 8620 .	31	. .	. .	. .	39.1	40.3	41.8	42.9	44.3	55.4	56.6	59.0	24 47.42	− 5.68	9.80	8 24 31.94	1.23
	*+23° 54′ . . .	32	26.0	28.4	29.5	39.9	41.0	42.6	43.8	44.9	55.5	56.6	58.9	28 42.46	+ 0.10	9.80	8 28 32.76	2.69
	*+20° 28′ ± . .	33	. .	. .	. .	13.6	14.8	16.0	17.3	18.4	. .	. .	. .	31 16.02	0.09	9.80	8 31 6.31	2.61
	*+20° 28′ ± . .	34	. .	. .	. .	39.4	40.4	41.7	43.0	44.2	. .	. .	. .	31 41.74	0.09	9.80	8 31 32.03	2.61
	*+20° 33′ . . .	35	4.8	7.0	8.1	18.5	19.5	20.8	22.0	23.1	. .	. .	. .	32 15.48	5.40	9.80	8 32 11.08	2.61
	*+20° 33′ ± . .	36	. .	. .	. .	35.0	36.0	37.4	38.6	39.6	. .	. .	. .	32 37.32	0.09	9.80	8 32 27.61	2.61
	39 Cancri	37	. .	. .	. .	42.4	43.4	44.6	45.9	46.9	. .	. .	. .	32 44.64	0.09	9.80	8 32 34.93	2.61
	*+20° 27′ . . .	38	. .	. .	. .	51.4	52.4	53.6	55.0	56.0	. .	. .	. .	32 53.68	0.09	9.80	8 32 43.97	2.61
	*+20° 24′ . . .	39	. .	. .	. .	33.2	34.4	35.6	36.8	38.0	. .	. .	. .	33 35.60	0.09	9.80	8 33 25.89	2.60
	Weisse (2) 829 .	40	. .	. .	. .	50.2	51.2	52.5	53.7	55.0	. .	. .	. .	33 52.52	0.09	9.80	8 33 42.81	2.60
	B. A. C. 2931 . .	41	. .	. .	. .	26.6	27.8	29.2	30.3	31.4	. .	. .	. .	34 29.06	+ 0.09	9.80	8 34 19.35	2.60
	Weisse(2)1012,(1st*)	42	36.0	37.1	38.6	40.0	42.3	. .	43.4	45.8	47.1	48.4	49.6	40 12.83	− 0.27	9.80	8 40 2.76	2.40
	Weisse(2)1012,(2d*)	43	57.1	59.4	0.6	10.3	11.4	12.6	13.8	14.8	24.6	25.7	27.9	40 12.56	+ 0.08	9.80	8 40 2.84	2.40
	52 Cancri	44	45.6	47.8	49.0	58.9	0.0	1.4	2.5	3.6	3.7	4.8	6.9	44 1.29	0.09	9.80	8 43 51.58	2.49
	Weisse 1282 . .	45	55.9	58.0	59.2	9.0	10.1	11.4	12.5	13.7	23.6	24.6	26.7	50 11.34	+ 0.06	9.79	8 50 1.61	1.78
	*−13° 12′ . . .	46	. .	. .	. .	48.9	49.9	51.1	52.4	53.5	3.3	4.3	6.5	50 56.24	− 5.05	9.79	8 50 41.40	1.78
	κ Cancri	47	34.3	36.5	37.6	47.5	48.5	49.6	50.8	51.9	1.7	2.8	4.9	0 49.65	+ 0.08	9.79	9 0 39.94	2.33
	20 Hydræ	48	6.7	8.9	9.9	19.8	20.8	22.0	23.2	24.3	34.0	35.1	37.1	3 21.98	0.06	9.79	9 3 12.25	1.90
	Lacaille 3704 . .	49	38.7	41.0	42.2	53.0	54.1	55.4	56.6	57.8	8.7	9.9	12.0	4 55.40	0.06	9.79	9 4 45.67	1.42
	B. A. C. 3156 . .	50	22.4	25.0	26.7	39.7	40.9	42.7	44.1	45.6	59.0	0.2	2.9	9 42.65	+ 0.05	− 9.79	9 9 32.91	+ 0.49

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h. Feb. 27, 6.8	s. − 9.82	s. + 0.013	s. + 0.05	s. + 0.07

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Feb. 27 Y.	*−38° 53′ . . .	1	35.8	38.5	39.7	52.4	53.5	55.2	56.5	57.8	50.3	51.7	54.4	13 55.07	+ 0.05	− 9.79	9 13 45.33	+ 0.73
Mar. 1 E.	Weisse (2) 287 . .	2	..	..	..	31.3	..	33.9	35.1	36.4	47.8	48.8	51.1	11 40.63	− 6.71	+ 3.47	5 11 37.39	3.81
	*−25° 23′ . . .	3	..	..	..	19.1	20.3	22.5	39.5	42.2	43.5	44.9	46.4	14 34.80	28.71	3.47	5 14 9.56	2.43
	β Tauri	4	..	..	..	54.7	55.9	57.2	58.6	59.9	10.7	11.9	14.1	18 2.88	− 5.58	3.47	. . . .	3.74
	B. A. C. 1711 . .	5	..	..	..	5.0	6.1	7.4	8.6	9.7	..	..	..	21 7.36	+ 0.07	3.47	5 21 10.90	3.51
	120 Tauri	6	31.9	33.9	35.1	45.4	46.4	47.6	48.8	49.9	0.0	1.1	3.4	25 47.59	+ 0.07	3.47	5 25 51.13	3.44
	*+21° 2′ . . .	7	..	..	..	44.9	46.0	48.1	4.7	7.2	8.5	9.9	11.2	28 0.06	− 27.80	3.47	5 27 35.73	3.49
	*+26° 35′ . . .	8	..	..	..	42.7	43.8	45.2	46.6	47.7	..	..	..	31 45.20	+ 0.08	3.47	5 31 48.75	3.62
	*+21° 15′ . . .	9	57.4	59.5	0.8	11.2	12.2	13.5	14.8	16.0	26.3	27.4	29.6	33 13.52	0.07	3.47	5 33 17.06	3.47
	*−13° 35′ . . .	10	41.8	43.8	45.0	54.9	55.9	57.0	58.1	59.3	9.3	10.3	12.5	41 57.08	0.07	3.46	5 42 0.61	2.58
	*+20° 9′ . . .	11	41.2	43.5	44.7	55.0	56.1	57.3	58.5	59.7	10.0	11.1	13.4	50 57.32	0.07	3.46	5 51 0.85	3.36
	*+36° 20′ . . .	12	..	..	..	39.0	40.3	41.8	43.3	44.6	..	..	..	52 41.80	+ 0.09	3.46	5 52 45.35	3.80
	*+36° 20′ . . .	13	..	..	..	57.1	58.4	1.0	20.0	22.6	24.4	25.9	27.5	53 14.61	− 32.19	3.46	5 52 45.88	3.80
	B. A. C. 1935 . .	14	..	..	..	15.0	16.5	19.0	38.3	41.6	43.0	44.7	46.1	56 33.02	32.90	3.46	5 56 3.58	3.83
	Weisse 1487 . .	15	..	..	..	..	..	..	4.1	6.5	7.9	9.1	10.4	59 7.60	34.63	3.46	5 58 36.43	2.46
	Lacaille 2151 . .	†16	..	..	..	..	..	..	31.1	34.1	35.6	37.0	38.6	3 35.28	− 41.66	3.46	6 2 57.08	1.66
	Lacaille 2183 . .	17	..	..	..	24.4	25.5	27.0	28.4	29.7	..	..	..	6 27.00	+ 0.08	3.46	6 6 30.54	1.74
	*−28° 10′ . . .	18	31.5	33.9	35.3	45.9	47.1	48.4	49.9	51.1	2.0	3.1	5.6	9 48.53	0.08	3.46	6 9 52.07	1.94
	Lacaille 2208 . .	19	..	..	..	42.6	43.6	44.9	46.3	47.4	..	..	..	11 44.96	+ 0.07	3.46	6 11 48.49	+ 2.08
	δ Ursæ Minoris, S.P.	20	..	..	..	..	..	26.5	47.0	4.5	..	..	..	14 46.00	− 20.29	3.46	. . . .	− 12.78
	γ Geminorum . .	21	..	..	..	3.4	4.3	5.5	6.7	7.7	..	..	..	30 5.52	+ 0.07	3.45	. . . .	+ 3.09
	Weisse (2) 1027 .	22	50.2	53.0	54.7	8.0	9.5	11.1	12.9	14.4	27.7	29.2	32.2	35 11.17	+ 0.10	3.45	6 35 14.72	3.85
	56 Aurigæ . . .	23	..	..	..	11.8	13.0	14.7	16.4	17.7	30.9	32.6	35.3	37 21.55	− 6.78	3.45	6 37 18.22	3.80
	*+43° 44′ . . .	24	..	..	..	..	..	..	58.1	1.4	3.3	4.9	6.6	38 2.86	− 46.47	3.45	6 37 19.84	3.80
	B. A. C. 2244 . .	25	31.9	34.1	35.3	..	..	..	..	..	2.0	3.3	5.5	44 48.68	+ 0.08	3.45	6 44 52.21	1.76
	O. Arg. S. 5772 .	26	46.6	48.9	50.2	..	..	..	..	..	16.7	18.0	20.1	45 3.42	+ 0.08	3.45	6 45 6.95	1.76
	2 Canis Majoris .	27	..	..	..	0.9	1.8	3.1	4.4	5.6	15.0	16.2	18.4	48 8.18	− 5.02	3.45	6 48 6.61	2.26
	*−30° 44′ . . .	28	12.5	14.8	16.0	27.3	28.5	29.8	31.2	32.3	43.5	44.8	47.2	52 29.81	+ 0.08	3.45	6 52 33.34	1.58
	Lacaille 2562 . .	29	..	..	..	31.9	33.0	34.4	35.7	36.9	..	..	..	54 34.38	0.08	3.45	6 54 37.91	1.62
	*+61° 0′ . . .	30	19.5	23.6	25.8	45.9	47.9	50.6	52.9	55.1	15.0	17.2	21.4	57 50.45	0.14	3.45	6 57 54.04	4.44
	*+61° 0′ ± . .	31	26.5	30.6	33.1	..	..	..	..	..	22.1	24.0	28.2	57 57.42	0.14	3.45	6 58 1.01	4.44
	*−14° 41′ . . .	32	..	..	..	56.4	57.4	58.6	59.9	0.9	..	..	..	2 58.64	0.07	3.45	7 3 2.16	2.11
	*−14° 33′ . . .	33	..	..	..	45.0	46.1	47.5	48.9	50.0	..	..	..	3 47.50	0.07	3.45	7 3 51.02	2.11
	Weisse 164 . .	34	49.2	51.4	52.5	2.4	3.4	4.8	6.0	7.1	17.0	18.1	20.1	6 4.73	0.07	3.45	7 6 8.25	2.10
	*−14° 39′. . .	35	44.0	46.1	47.3	57.4	58.4	59.6	0.9	2.0	11.7	12.9	15.0	6 59.57	0.07	3.45	7 7 3.09	2.09
	Weisse 300 . .	36	13.7	15.7	17.0	26.9	27.9	29.2	30.5	31.5	..	..	..	10 24.05	+ 5.21	3.45	7 10 32.71	2.08
	*−14° 38′ . . .	37	..	..	..	..	..	..	..	..	58.0	59.2	1.4	10 59.53	− 13.64	3.45	7 10 49.34	2.07
	*−14° 37′ . . .	38	29.3	31.3	32.4	42.5	43.5	44.7	45.9	47.0	57.0	58.1	0.3	11 44.73	+ 0.07	3.44	7 11 48.24	2.07
	Lacaille 2767 . .	39	..	..	..	27.6	28.7	30.3	31.7	33.0	..	..	..	17 30.26	+ 0.09	3.44	7 17 33.79	1.21
	*−14° 59′ . . .	40	..	..	..	3.9	4.9	7.0	22.7	25.2	26.4	27.7	29.4	20 18.40	− 26.86	3.44	7 19 54.98	2.03
	*−14° 42′ . . .	41	..	..	..	40.7	41.7	43.7	59.4	1.9	3.1	4.4	5.7	20 55.08	− 26.82	3.44	7 20 31.70	2.03
	Weisse (2) 727 . .	†42	..	..	..	32.5	33.5	34.8	36.0	37.2	..	..	..	25 34.80	+ 0.07	3.44	7 25 38.31	2.82
	g Puppis	43	..	..	..	59.7	1.0	2.2	3.6	4.7	..	..	..	29 2.24	0.08	3.44	7 29 5.76	1.60
	O. Arg. S. 7065 .	44	23.1	25.3	26.6	37.4	38.5	39.7	41.0	42.1	..	..	..	29 34.21	5.62	3.44	7 29 43.27	1.60
	Lacaille 2864 . .	45	49.0	51.4	52.6	3.4	4.5	5.7	7.0	8.1	19.0	20.1	22.5	30 5.75	0.08	3.44	7 30 9.27	1.60
	Lacaille 2908 . .	46	..	..	..	10.4	11.5	13.0	14.3	15.4	..	..	..	35 12.92	+ 0.08	3.44	7 35 16.44	1.41
	O. Arg. S. 7237 .	47	..	..	..	29.3	30.4	32.8	50.4	53.2	54.6	56.0	57.4	35 45.51	− 29.87	3.44	7 35 19.08	1.41
	*+0° 30′ . . .	48	14.8	16.8	18.0	27.6	28.5	29.7	31.0	32.2	41.4	42.5	44.9	44 29.76	+ 0.07	3.44	7 44 33.27	2.36
	*+0° 31′ . . .	49	..	..	..	50.0	51.3	52.6	53.8	54.9	..	..	..	45 52.52	+ 0.07	3.44	7 45 56.03	2.35
	Lacaille 3061 . .	50	..	..	..	..	39.3	40.6	42.0	43.1	54.1	55.5	58.0	49 47.51	− 6.93	+ 3.44	7 49 44.02	+ 1.30

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 1, 6.8	+ 3.45	+ 0.013	0.00	+ 0.07

16. Faint.
42. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Mar. 1 E.	*+12° 3′	1	. .	. .	. .	. .	. .	. .	23.6	25.9	27.3	28.7	30.0	51 27.10	− 34.34	+ 3.44	7 50 56.20	+ 2.61
	Weisse 1504	2	. .	. .	. .	37.7	38.7	39.8	41.0	42.1	. .	. .	. .	51 39.86	+ 0.07	3.44	7 51 43.37	2.61
	B. A. C. 2689	3	. .	. .	. .	12.0	13.3	14.9	16.5	17.6	29.9	31.1	33.6	57 21.11	− 6.11	3.44	7 57 18.44	0.99
	O. Arg. S. 7951	4	3.6	6.0	7.1	18.6	19.8	20.9	22.4	23.5	34.6	36.0	38.3	0 20.98	+ 0.08	3.43	8 0 24.49	1.33
	*+24° 26′	5	51.5	53.8	54.9	5.6	6.7	8.0	9.3	10.4	20.7	22.0	24.3	14 7.93	0.07	3.43	8 14 11.43	2.78
	Weisse (2) 382	6	42.4	45.0	46.6	59.2	0.4	2.2	3.6	5.0	17.6	19.1	21.8	18 2.08	0.09	3.43	8 18 5.60	3.09
	*+40° 28′	7	. .	. .	. .	57.8	58.8	0.5	2.0	3.2	. .	. .	. .	20 0.46	0.09	3.43	8 20 3.98	3.09
	*+23° 56′	8	13.0	14.9	16.1	26.8	28.1	29.3	30.5	31.7	42.0	43.4	45.8	29 29.24	0.07	3.43	8 29 32.74	2.70
	*+23° 44′	9	55.9	57.9	59.1	9.7	10.8	12.0	13.3	14.4	24.8	26.0	28.3	30 12.02	0.07	3.43	8 30 15.52	2.70
	Weisse 885	10	. .	. .	. .	23.4	24.5	25.7	27.0	28.0	. .	. .	. .	33 25.72	0.07	3.43	8 33 29.22	1.80
	Dorpat 1270, (1st *)	11	. .	. .	. .	38.6	39.5	40.7	41.8	42.9	. .	. .	. .	38 40.70	+ 0.07	3.43	8 38 44.20	2.12
	Dorpat 1270, (2d *)	12	. .	. .	. .	. .	. .	. .	. .	. .	53.0	54.0	56.1	38 54.37	− 13.20	3.43	8 38 44.60	2.12
	ε Hydræ	13	32.5	34.6	35.8	45.5	46.4	47.6	48.8	49.9	59.5	0.7	2.6	39 47.63	+ 0.07	+ 3.43	. . . .	2.32
12	B. A. C. 2023	14	12.6	14.8	16.0	26.9	28.0	29.4	30.7	31.9	42.7	43.9	46.1	10 29.36	0.10	−21.08	6 10 8.38	3.66
	μ Geminorum	15	7.0	9.1	10.4	20.9	21.9	23.2	24.5	25.8	36.1	37.2	39.5	15 23.24	0.09	21.08	. . . .	3.51
	Lalande 13873	16	36.4	39.0	40.4	52.4	53.6	55.0	56.5	57.7	9.9	11.1	13.8	3 55.07	+ 0.11	21.08	7 3 34.10	3.60
	*+42° 9′	17	. .	. .	. .	. .	. .	. .	29.6	32.5	34.2	36.2	37.9	7 34.08	− 45.26	21.08	7 6 27.74	3.80
	Weisse 283	18	. .	. .	. .	25.3	26.4	28.5	44.3	46.8	48.0	49.3	50.5	10 39.89	− 26.77	21.08	7 9 52.04	2.27
	*+25° 17′	19	3.7	6.0	7.4	18.0	19.1	20.4	21.7	22.9	33.6	34.9	37.0	13 20.43	+ 0.10	21.08	7 12 59.45	3.26
	*+25° 14′	20	12.8	15.2	16.5	27.0	28.2	29.6	30.8	32.0	42.7	43.8	46.1	13 29.52	0.10	21.08	7 13 8.54	3.26
	*−14° 57′	21	45.0	47.1	48.4	58.5	59.5	0.7	1.9	2.9	12.8	14.0	16.0	18 0.62	0.07	21.08	7 17 39.61	2.21
	*−14° 59′	22	32.4	34.5	35.6	45.5	46.5	47.8	49.0	50.1	0.0	1.1	3.3	19 47.80	+ 0.07	21.08	7 19 26.79	2.20
	Lalande 14619	23	. .	. .	. .	43.4	44.6	45.8	47.0	48.2	58.0	59.1	1.2	23 50.91	− 5.08	21.08	7 23 24.75	2.29
	Weisse (2) 840	24	33.0	35.2	36.4	46.8	47.9	49.2	50.5	51.5	2.0	3.1	5.3	29 49.17	+ 0.09	21.08	7 29 28.18	3.08
	*+21° 45′	25	32.3	34.5	35.8	46.1	47.4	48.6	49.8	50.9	1.3	2.4	4.6	33 48.52	0.09	21.08	7 33 27.53	3.06
	*−14° 19′	26	29.3	31.4	32.5	42.4	43.5	44.7	46.0	47.1	57.0	58.2	0.2	41 44.75	0.07	21.08	7 41 23.74	2.12
	Lalande 15323	27	30.1	32.3	33.6	44.0	45.0	46.1	47.4	48.6	58.8	0.1	2.1	44 46.19	0.09	21.08	7 44 25.20	2.98
	*+12° 3′	28	19.0	21.2	22.2	31.9	33.0	34.2	35.4	36.5	46.4	47.4	49.5	49 34.25	0.08	21.08	7 49 13.25	2.76
	*−27° 37′	29	41.7	44.0	45.4	56.3	57.4	58.7	0.0	1.2	12.0	13.3	15.6	52 58.69	+ 0.06	21.08	7 52 37.67	+ 1.62
	λ Ursæ Min., S. P.	30	. .	56.0	57.0	. .	6.0	8.0	20.0	13.0	. .	37.5	24.0	2 8.62	− 6 59.15	21.08	. . . .	− 31.13
	Lacaille 3262	31	30.0	32.4	33.8	45.7	46.8	48.2	49.7	51.0	2.6	3.7	6.4	14 48.21	+ 0.06	21.08	8 14 27.19	+ 1.25
	Lalande 16464	32	41.5	43.6	45.0	55.5	56.5	57.9	59.1	0.2	10.8	12.0	14.2	17 57.85	0.09	21.08	8 17 36.86	2.88
	B. A. C. 2838	33	18.9	21.5	23.3	36.3	37.5	39.3	40.9	42.3	55.0	56.5	59.4	21 39.17	0.07	21.08	8 21 18.16	0.82
	*−31° 15′	34	50.0	52.3	53.8	5.0	6.2	7.7	9.0	10.2	21.5	22.7	25.3	26 7.61	0.06	21.08	8 25 46.59	1.34
	Lacaille 3422	35	10.2	12.5	13.7	25.2	26.4	27.8	29.0	30.3	41.7	42.9	45.3	31 27.73	0.06	21.08	8 31 6.71	1.28
	Weisse 885	36	34.5	36.7	37.9	47.8	48.9	50.1	51.4	52.5	2.4	3.6	5.6	33 50.13	0.07	21.08	8 33 29.12	1.92
	Weisse (2) 898	37	12.0	14.1	15.4	25.8	26.9	28.3	29.6	30.8	41.1	42.3	44.5	36 28.25	0.09	21.08	8 36 7.26	2.77
	ε Hydræ	38	56.9	59.0	0.1	9.9	10.9	12.0	13.2	14.3	24.0	25.0	27.1	40 12.04	0.08	21.08	. . . .	2.41
	c Mali	39	3.6	5.9	7.2	18.0	19.1	20.4	21.9	23.0	34.0	35.1	37.5	45 20.52	0.06	21.08	8 44 59.50	1.45
	B. A. C. 3031	40	29.9	32.0	33.1	43.0	44.1	45.3	46.6	47.6	57.7	58.7	0.9	48 45.35	+ 0.08	21.08	8 48 24.35	2.54
	*−29° 59′	41	. .	. .	. .	23.0	24.4	26.8	44.2	47.0	48.3	49.8	51.4	51 39.36	− 29.97	21.08	8 50 48.31	1.33
	*−30° 9′	42	0.1	2.4	3.7	14.8	16.0	17.4	18.8	20.0	31.0	32.4	34.7	56 17.39	+ 0.06	21.08	8 55 56.37	1.31
	ω Hydræ	43	11.3	13.4	14.4	24.3	25.2	26.4	27.5	28.6	38.3	39.1	41.1	59 26.33	0.08	21.08	8 59 5.33	2.32
	Weisse (2) 79	44	. .	. .	. .	34.3	35.4	36.7	37.9	39.2	. .	. .	. .	5 36.70	+ 0.09	21.08	9 5 15.71	2.58
	θ Ursæ Majoris	45	. .	. .	. .	46.0	47.4	51.0	16.4	20.3	21.9	24.0	26.1	25 9.14	− 42.35	21.08	9 24 5.71	2.89
17 Y.	B. A. C. 2581	46	35.8	38.5	40.0	51.5	52.6	54.0	55.5	56.8	8.4	9.6	12.0	40 54.06	+ 0.05	11.38	7 40 42.73	1.51
	ρ Argus	47	53.7	56.0	57.2	7.6	8.7	10.0	11.4	12.5	23.0	24.2	26.5	2 10.07	+ 0.06	11.39	8 1 58.74	+ 1.80
	λ Ursæ Min., S. P.	48	. .	. .	. .	. .	. .	. .	. .	. .	33.0	32.0	23.0	6 49.33	−11 45.40	11.39	. . . .	− 35.24
	Lacaille 3241	49	53.5	55.9	57.1	7.7	8.8	10.2	11.6	12.6	23.4	24.5	26.8	12 10.19	+ 0.05	11.39	8 11 58.85	+ 1.69
	Lacaille 3262	50	. .	. .	. .	36.0	37.1	38.5	39.9	41.2	52.8	54.0	56.5	14 44.50	− 5.96	−11.39	8 14 27.15	+ 1.35

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 12, 7.5	− 21.08	0.00	+ 0.03	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Mar. 17 Y.	Lalande 16464 .	1	45.8	46.9	48.2	49.4	50.5	. .	21.1	23.9	25.2	26.5	27.9	18 6.54	− 18.31	−11.39	8 17 36.84	+ 2.95
	Weisse (2) 458 .	2	38.0	40.4	41.5	52.2	53.3	54.6	55.8	57.0	. .	. .	. .	20 49.10	+ 5.59	11.39	8 20 43.30	2.96
	υ³ Cancri	3	41.0	43.4	44.6	55.3	56.2	57.5	58.8	0.0	10.5	11.7	14.0	23 57.55	0.10	11.39	8 23 46.26	2.93
	B. A. C. 2883 . .	4	39.6	41.9	43.1	54.6	55.6	57.0	58.4	59.6	10.8	12.0	14.6	27 57.02	0.05	11.39	8 27 45.68	1.43
	*+20° 39′ . . .	5	45.5	47.6	49.0	59.2	0.2	1.5	2.8	3.9	14.1	15.3	17.4	31 1.50	0.09	11.39	8 30 50.20	2.81
	*+20° 36′ ± . .	6	. .	. .	. .	10.0	11.1	12.4	13.5	14.8	. .	. .	. .	32 12.36	0.09	11.39	8 32 1.06	2 80
	*+20° 33′ ± . .	7	. .	. .	. .	19.9	21.0	22.2	23.5	24.5	. .	. .	. .	32 22.22	0.09	11.39	8 32 10.92	2.80
	*+20° 30′ ± . .	8	. .	. .	. .	36.3	37.5	38.8	39.9	41.2	. .	. .	. .	32 38.74	0.09	11.39	8 32 27.44	2.80
	39 Cancri	9	. .	. .	. .	43.6	44.8	46.1	47.4	48.6	. .	. .	. .	32 46.10	0.09	11.39	8 32 34.80	2.80
	*+20° 27′ ± . .	10	. .	. .	. .	52.8	54.0	55.2	56.4	57.5	. .	. .	. .	32 55.18	0.09	11.39	8 32 43.88	2.79
	*+20° 24′ . . .	11	. .	. .	. .	34.7	35.8	37.1	38.4	39.7	. .	. .	. .	33 37.14	0.09	11.39	8 33 25.84	2.79
	Weisse (2) 829 .	12	. .	. .	. .	51.5	52.7	54.0	55.3	56.4	. .	. .	. .	33 53.98	0.09	11.39	8 33 42.68	2.79
	*+20° 20′ ± . .	13	. .	. .	. .	28.1	29.2	30.4	31.8	32.8	. .	. .	. .	34 30.46	+ 0.09	11.39	8 34 19.16	2.79
	Weisse 1012, (1st *)	14	37.5	38.7	39.9	41.2	43.6	. .	44.8	47.2	48.5	49.8	51.0	40 14.22	− 0.27	11.39	8 40 2.56	2.58
	Weisse 1012, (2d *)	15	58.6	0.8	2.0	. .	. .	. .	. .	. .	26.0	27.2	29.4	40 14.00	+ 0.08	11.39	8 40 2.69	2.58
	*−32° 6′ . . .	16	23.4	25.9	27.2	38.5	39.6	41.0	42.4	43.6	55.1	56.2	58.8	47 41.06	0.05	11.39	8 47 29.72	1.23
	*−37° 47′ . . .	17	9.8	12.4	13.8	25.9	27.2	28.7	30.2	31.3	43.4	44.8	47.6	50 28.65	0.05	11.39	8 50 17.31	1.05
	B. A. C. 3076 . .	18	33.2	35.3	36.5	46.2	47.2	48.4	49.5	50.6	0.2	1.3	3.4	54 48.35	+ 0.08	11.39	8 54 37.04	2.40
	B. A. C. 3078 . .	19	. .	. .	. .	18.2	19.3	21.3	36.6	39.1	40.3	41.7	42.8	55 32.41	− 26.08	11.39	8 54 54.94	2.40
	κ Cancri	20	35.8	38.0	39.1	48.9	49.9	51.1	52.3	53.3	3.1	4.3	6.4	0 51.11	+ 0.08	11.39	9 0 39.80	2.47
	20 Hydræ	21	8.2	10.4	11.6	21.2	22.3	23.5	24.6	25.6	35.4	36.5	38.6	3 23.45	0.06	11.39	9 3 12.12	2.04
	ε Ursæ Majoris .	22	31.0	34.5	36.5	53.2	54.8	57.0	59.0	0.7	17.5	19.3	22.8	6 56.94	0.20	11.39	9 6 45.75	3.27
	38 Lyncis	23	34.3	36.9	38.4	50.5	51.6	53.1	54.6	56.0	8.0	9.3	12.0	10 53.15	0.12	11.39	9 10 41.88	2.89
	27 Hydræ	24	2.3	4.4	5.6	15.3	16.3	17.5	18.6	19.7	29.5	30.5	32.7	14 17.49	0.06	11.39	9 14 6.16	1.99
	α Hydræ	25	6.3	8.2	9.4	19.0	20.1	21.2	22.4	23.6	33.3	34.3	36.4	21 21.29	0.06	11.39	9 21 9.96	2.00
	O. Arg. S. 9789 .	26	24.9	27.3	28.4	39.6	40.7	42.2	43.4	44.6	55.8	57.0	59.5	24 42.13	0.05	11.39	9 24 30.79	1.34
	B. A. C. 3306 . .	27	16.4	19.2	20.4	33.1	34.4	35.9	37.3	38.5	51.0	52.2	55.1	33 35.77	0.05	11.39	9 33 24.43	0.91
	Lalande 19134 .	28	15.8	17.9	19.2	28.9	29.8	31.1	32.4	33.4	43.2	44.3	46.2	38 31.11	0.08	11.39	9 38 19.80	2.29
	Weisse (2) 856 .	29	25.6	28.3	29.5	41.7	42.9	44.5	46.0	47.4	59.4	0.7	3.3	41 44.48	0.12	11.39	9 41 33.21	2.67
	17 Leonis Minoris .	30	17.7	20.3	21.8	34.1	35.2	36.8	38.4	39.7	52.2	53.3	56.0	44 36.86	0.13	11.39	9 44 25.60	2.68
	Weisse (2) 978 .	31	49.6	52.4	53.7	6.0	7.2	8.7	10.1	11.5	23.7	25.0	27.6	47 8.68	0.12	11.39	9 46 57.41	2.65
	O. Arg. S. 10236 .	†32	41.6	43.8	45.4	. .	. .	. .	. .	. .	12.6	13.8	16.0	50 58.87	0.05	11.39	9 50 47.53	1.31
	*−34° 42′ . . .	33	28.3	31.0	32.1	44.0	45.2	46.8	48.4	49.6	1.2	2.3	4.7	55 46.69	0.05	11.39	9 55 35.35	1.10
	*−38° 39′ . . .	34	. .	9.5	10.8	23.0	24.2	25.9	27.5	28.9	41.3	42.6	. .	58 25.97	0.05	11.39	9 58 14.63	0.92
	Weisse (2) 49 . .	35	. .	12.7	14.2	26.1	27.4	29.0	30.4	31.7	43.9	45.1	. .	4 28.94	0.12	11.39	10 4 17.67	2.53
	*−30° 10′ . . .	36	42.7	45.3	46.5	57.5	58.7	0.1	1.3	2.7	13.8	15.0	17.4	9 0.09	+ 0.05	11.39	10 8 48.75	1.28
	Lalande 19981 .	37	. .	. .	. .	57.6	58.5	59.9	1.0	2.1	12.0	13.0	15.1	11 4.90	− 5.01	11.39	10 10 48.50	2.22
	*+4° 34′ . . .	38	. .	. .	. .	. .	. .	. .	2.3	4.8	6.0	7.4	8.6	20 5.82	− 33.69	11.39	10 19 20.74	2.09
	Weisse 315 . .	39	18.4	20.6	21.8	31.4	32.5	33.8	34.8	35.8	45.5	46.7	48.7	19 33.64	+ 0.07	11.39	10 19 22.32	2.09
	ρ Leonis	40	51.9	54.0	55.0	4.8	5.8	7.0	8.2	9.3	19.2	20.2	22.3	26 7.06	0.08	11.39	10 25 55.75	2.14
18	μ Geminorum . .	41	. .	59.6	0.6	11.2	12.3	13.6	14.9	15.9	26.2	27.5	. .	15 13.53	0.10	11.47	6 15 2.16	3.62
	O. Arg. N. 6888 .	42	46.9	50.2	52.2	5.4	6.8	8.7	10.6	12.0	25.9	27.3	30.6	19 8.78	+ 0.18	11.47	6 18 57.49	4.44
	B. A. C. 2100 . .	43	. .	. .	. .	3.8	4.9	6.1	7.4	8.6	19.4	20.5	22.8	22 11.69	− 5.49	11.47	6 21 54.73	2.31
	O. Arg. N. 7006 .	44	7.7	10.8	12.4	26.7	28.5	30.1	31.9	33.6	48.0	49.5	52.6	25 30.16	+ 0.18	11.47	6 25 18.87	4.48
	Lacaille 2342 . .	45	49.3	51.6	52.7	3.5	4.6	5.9	7.1	8.2	19.2	20.3	22.6	30 5.91	0.04	11.47	6 29 54.48	2.26
	Lacaille 2372 . .	46	45.0	47.6	48.8	59.7	0.6	2.0	3.3	4.5	15.6	16.7	19.0	33 2.07	0.04	11.47	6 32 50.64	2.15
	*−28° 20′ . . .	47	. .	14.2	15.4	26.5	27.6	28.9	30.1	31.2	42.4	43.6	. .	34 28.88	0.04	11.47	6 34 17.45	2.14
	Lacaille 5574 . .	48	54.1	56.6	57.7	8.9	9.9	11.4	12.7	13.8	25.0	26.1	28.5	38 11.34	0.04	11.47	6 37 59.91	2.10
	*+23° 36′ . . .	49	47.9	50.5	51.6	. .	. .	. .	. .	. .	17.7	18.8	21.0	41 4.58	0.11	11.47	6 40 53.22	3.51
	B. A. C. 2244 . .	50	46.7	48.9	50.2	1.0	2.1	3.5	4.8	6.0	16.7	18.1	20.4	45 3.49	0.04	11.47	6 44 52.06	2.12
	Weisse 1589 . .	51	59.6	1.7	2.8	12.7	13.7	15.0	16.2	17.3	27.4	28.5	30.5	52 15.04	+ 0.06	−11.47	6 52 3.63	+ 2.46

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 17, 9.2	− 11.39	− 0.004	+ 0.05	+ 0.07

32. Rather poor observation.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Mar. 18 Y.	Lacaille 2577 . .	1	12.6	14.9	16.3	27.0	28.3	29.6	30.8	31.9	42.9	44.0	46.3	56 29.51	+ 0.04	−11.47	6 56 18.08	+ 2.05
	Lalande 13873. .	2	26.3	28.9	30.3	42.3	43.5	45.0	46.4	47.9	59.7	1.0	3.5	3 44.98	+ 0.14	11.48	7 3 33.64	3.75
	48 Geminorum . .	3	. .	. .	. .	53.3	54.6	56.8	13.5	16.2	17.5	18.8	20.3	5 8.88	− 28.44	11.48	7 4 28.96	3.40
	*+41° 47′ . .	4	50.3	53.2	54.8	. .	. .	. .	. .	. .	26.3	27.9	30.8	9 10.55	+ 0.16	11.48	7 8 59.23	3.90
	*+25° 17′ . . .	5	53.9	56.2	57.5	8.2	9.3	10.5	11.8	13.0	23.7	24.8	26.9	13 10.53	+ 0.11	11.48	7 12 59.16	3.37
	*+25° 19′ . . .	6	40.2	41.4	43.0	44.2	46.6	. .	53.0	55.7	57.0	58.5	59.9	13 19.95	− 0.28	11.48	7 13 8.19	3.37
	*−14° 28′ . . .	7	29.0	31.5	32.6	42.4	43.4	44.7	45.9	47.0	56.8	58.0	0.1	17 44.67	+ 0.06	11.48	7 17 33.25	2.33
	Lalande 14484. .	8	11.0	13.9	15.3	27.6	28.8	30.4	31.9	33.1	45.6	46.9	49.6	21 30.37	0.14	11.48	7 21 19.03	3.70
	Weisse (2) 728 . .	9	6.8	9.6	11.0	23.8	25.2	26.8	28.2	29.7	42.3	43.6	46.4	26 26.67	0.15	11.48	7 26 15.34	3.71
	*−14° 14′ . . .	10	30.6	32.7	33.9	43.7	44.7	46.0	47.3	48.3	58.3	59.5	1.5	30 46.05	+ 0.06	11.48	7 30 34.63	2.28
	*−14° 14′ . . .	11	9.6	10.8	12.3	13.7	15.9	. .	17.6	20.2	21.5	22.7	24.0	30 46.83	− 0.30	11.48	7 30 35.05	2.28
	*−14° 43′ . . .	12	31.3	33.3	34.6	44.6	45.7	46.9	48.1	49.3	59.0	0.2	2.1	32 46.83	+ 0.06	11.48	7 32 35.41	2.25
	*−27° 17′ . . .	13	48.2	50.7	51.9	2.6	3.7	4.8	6.1	7.3	18.7	19.8	21.7	41 5.05	0.04	11.48	7 40 53.61	1.80
	Lalande 15235 .	14	30.3	32.8	34.1	46.1	47.4	49.0	50.5	51.8	3.7	5.0	7.6	43 48.94	+ 0.14	11.48	7 43 37.60	3.49
	φ Geminorum . .	15	. .	. .	. .	. .	. .	. .	14.4	17.1	18.5	19.9	21.3	46 18.24	− 37.69	11.48	7 45 29.07	3.24
	*−25° 50′	16	39.0	41.3	42.6	53.4	54.5	55.9	57.1	58.2	8.9	10.2	12.4	48 55.77	+ 0.04	11.48	7 48 44.33	1.82
	Lacaille 3086 . .	17	26.4	29.2	30.8	43.7	45.0	46.6	48.1	49.5	2.7	4.0	6.9	52 46.63	0.03	11.48	7 52 35.18	1.07
	B. A. C. 2689 . .	18	10.7	13.1	14.5	26.6	27.8	29.6	31.0	32.1	44.3	45.5	47.9	57 29.37	0.03	11.48	7 57 17.92	1.32
	Weisse 1763 . .	19	38.7	41.0	42.2	51.9	53.0	54.1	55.4	56.5	6.4	7.5	9.7	0 54.22	0.09	11.48	8 0 42.83	2.85
	Weisse (2) 22 . .	20	25.5	27.6	28.7	38.7	39.9	41.2	42.4	43.5	53.5	54.6	56.7	3 41.12	0.19	11.48	8 3 29.83	2.88
	57 Camelopardi . .	†21	. .	. .	. .	59.0	0.7	3.8	6.9	9.0	. .	. .	. .	8 3.88	0.08	11.48	8 7 52.48	4.34
	*+24° 25′ . . .	22	5.9	8.1	9.6	20.0	21.2	22.5	23.8	24.9	35.5	36.7	39.0	14 22.47	+ 0.11	11.48	8 14 11.10	+ 3.00
	λ Ursæ Min., S. P. .	23	. .	. .	. .	. .	. .	. .	25.0	14.0	18.0	37.0	36.0	24 14.00	−29 8.08	11.48	. . . . .	− 37.17
	B. A. C. 2899 . .	24	12.2	14.4	15.6	25.7	26.7	28.0	29.3	30.5	40.6	41.7	44.0	30 28.06	+ 0.10	11.48	8 30 16.68	+ 2.80
	*+19° 48′ . . .	25	45.5	47.9	49.1	59.4	0.5	1.7	3.0	4.1	14.4	15.4	17.5	33 1.68	0.10	11.48	8 32 50.30	2.79
	*+19° 44′ . . .	26	44.2	46.6	47.7	57.9	59.0	0.4	1.7	2.7	12.9	13.9	16.1	34 0.28	+ 0.10	11.48	8 33 48.90	2.79
	Dorpat 1270, (1st *)	27	19.7	20.9	22.3	23.5	25.7	. .	25.7	28.2	29.5	30.7	31.8	38 55.80	− 0.28	11.48	8 38 44.04	2.29
	Dorpat 1270, (2d *)	28	40.8	42.8	44.0	53.7	54.7	56.0	57.1	58.1	7.9	8.7	10.7	38 55.86	+ 0.07	11.48	8 38 44.45	2.29
	c Mali.	29	54.0	56.1	57.4	8.6	9.6	10.9	12.1	13.1	24.3	25.4	27.7	45 10.84	0.04	11.48	8 44 59.40	1.54
	B. A. C. 3031 . .	30	20.0	22 4	23.4	33.5	34.4	35.7	36.9	38.0	48.0	49.1	51.2	48 35.69	0.09	11.48	8 48 24.30	2.61
	Weisse (2) 1253 .	31	22.0	24.5	25.6	36.2	37.3	38.6	40.0	41.1	51.6	52.7	54.9	51 38.59	+ 0.11	11.48	8 51 27.22	2.76
	*+23° 17′ . . .	32	5.2	6.7	8.0	9.6	11.9	. .	17.1	20.0	21.1	22.6	24.0	51 44.62	− 0.27	11.48	8 51 32.87	2.76
	*−35° 9′ . . .	33	42.0	44.6	45.9	57.9	58.9	0.4	1.7	3.0	15.0	16.4	18.9	56 0.43	+ 0.03	11.48	8 55 48.98	1.16
	κ Cancri	34	. .	38.0	39.1	48.9	49.9	51.1	52.4	53.6	3.2	4.4	. .	0 51.18	0.08	11.48	9 0 39.78	2.48
	*−28° 26′ . . .	35	21.3	24.0	25.1	35.7	37.0	38.5	39.9	41.1	52.0	53.2	55.7	3 38.50	0.04	11.48	9 3 27.06	1.44
	B. A. C. 3156 . .	36	23.7	26.9	28.2	41.2	42.5	44.1	46.0	47.5	0.4	1.9	4.5	9 44.26	0.03	11.48	9 9 32.81	0.75
	Lalande 18362. .	37	39.3	42.0	43.3	55.8	57.0	58.7	0.1	1.4	13.7	15.2	17.7	12 58.56	+ 0.15	11.48	9 12 47.23	2.91
	*−28° 34′ . . .	38	. .	. .	. .	12.6	13.7	16.0	33.5	36.0	37.5	39.0	40.6	15 28.61	− 29.58	11.48	9 14 47.55	1.41
	26 Ursæ Majoris . .	39	37.9	41.0	42.7	58.8	0.4	2.4	4.4	6.0	22.0	23.9	27.0	26 2.41	+ 0.21	11.48	9 25 51.14	3.05
	B. A. C. 3306 . .	40	16.4	19.0	20.8	. .	34.3	35.9	37.4	. .	51.0	52.5	55.2	33 35.83	0.03	11.48	9 33 24.38	0.92
	*−38° 55′ . . .	41	21.5	24.0	25.4	38.0	39.2	40.7	42.2	43.6	56.0	57.3	0.5	50 40.76	0.03	11.49	9 50 29.30	0.92
	*+13° 30′ . . .	42	. .	34.4	35.6	45.2	46.5	47.9	49.1	50.2	0.1	1.1	. .	56 47.79	0.09	11.49	9 56 36.39	2.30
	α Leonis	43	20.6	22.9	23.9	33.7	34.7	36.0	37.1	38.2	48.2	49.2	51.3	1 35.98	+ 0.08	11.49	10 1 24.57	2.25
27	*+61° 0′ . . .	44	32.3	37.0	39.0	59.0	0.9	3.5	5.9	8.1	27.7	30.0	34.7	58 3.46	− 0.04	10.37	6 57 53.05	5.46
	O. Arg. S. 6270 .	45	15.7	18.0	19.1	29.6	30.8	32.0	33.3	34.5	44.9	46.1	48.5	3 32.05	0.15	10.37	7 3 21.53	2.31
	δ Geminorum . .	46	12.4	14.6	15.6	26.0	27.1	28.4	29.7	30.8	41.2	42.4	44.6	12 28.44	0.07	10.37	7 12 18.00	3.46
	Piazzi VII, 67 . .	47	42.6	48.4	51.4	18.0	20.9	24.2	27.4	30.1	56.7	59.6	5.5	17 24.07	0.04	10.37	7 17 13.66	6.07
	Lalande 14465. .	48	42.8	45.4	46.7	58.5	59.7	1.1	2.7	3.9	15.5	16.9	19.5	21 1.15	0.06	10.37	7 20 50.72	3.79
	*−24° 0′ . . .	49	48.3	50.4	51.5	2.2	3.3	4.5	5.9	7.1	17.5	18.6	20.9	25 4.56	0.15	10.37	7 24 54.04	2.19
	*−14° 13′ . . .	50	41.1	43.4	44.5	54.4	55.5	56.7	57.8	59.0	8.9	10.1	12.3	30 56.70	− 0.13	−10.37	7 30 46.20	+ 2.44

March 22. Image east 0r.18. Clamp east.
Image west 0r.05. Clamp west.
21. Rather poor observation.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 18, 8.3	− 11.48	− 0.004	+ 0.07	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Mar. 27	*—14° 42′ . . .	1	44.9	47.0	48.1	58.0	59.1	0.3	1.6	2.7	12.6	13.7	16.0	33 0.36	— 0.13	—10.37	7 32 49.86	+ 2.41
Y.	Lalande 15006 .	2	. .	. .	. .	27.6	28.7	30.0	31.4	32.5	43.0	44.3	46.5	35 35.50	5.60	10.37	7 35 19.53	2.12
	Rumker 2287 . .	3	9.0	11.1	12.3	22.0	23.1	24.4	25.7	26.7	36.5	37.7	39.8	42 24.39	0.13	10.36	7 42 13.90	3.06
	*+35° 12′ . . .	4	1.6	4.2	5.6	17.8	19.0	20.6	22.1	23.5	35.7	37.0	39.8	46 20.63	0.06	10.36	7 46 10.21	3.62
	*+12° 3′ . . .	5	8.0	10.2	11.3	21.0	22.2	23.5	24.8	25.7	35.4	36.7	38.7	49 23.41	0.09	10.36	7 49 12.96	3.00
	Lacaille 3086 . .	6	25.4	28.2	29.6	42.7	43.9	45.7	47.2	48.5	1.5	3.0	6.0	52 45.61	0.23	10.36	7 52 35.02	1.30
	*+20° 9′ . . .	7	44.0	46.3	47.4	57.7	58.7	0.1	1.4	2.5	12.7	13.9	16.0	57 0.06	0.07	10.36	7 56 49.63	3.14
	Weisse (2) 1597 .	8	36.7	38.9	40.0	50.0	51.2	52.4	53.7	54.7	4.9	6.1	8.1	58 52.43	0.08	10.36	7 58 41.99	3.05
	Weisse (2) 22 . .	9	24.3	26.6	27.6	37.6	38.7	39.9	41.2	42.4	52.3	53.5	55.6	3 39.97	0.08	10.36	8 3 29.53	3.03
	*—27° 0′ . . .	10	. .	. .	. .	13.0	14.2	15.5	16.9	18.0	28.9	30.1	32.6	9 21.15	5.75	10.36	8 9 5.04	1.85
	*—30° 8′ . . .	11	22.9	25.2	26.5	. .	. .	. .	. .	. .	53.8	55.1	57.5	10 40.17	0.17	10.36	8 10 29.64	1.73
	*—30° 7′ . . .	12	. .	. .	. .	41.6	42.7	44.0	45.4	46.6	. .	. .	. .	10 44.06	0.17	10.36	8 10 33.53	1.73
	Lacaille 3266 . .	13	51.5	53.8	54.9	5.9	7.1	8.6	10.0	11.1	22.1	23.3	25.8	15 8.55	0.17	10.36	8 15 58.02	1.74
	Lacaille 3293 . .	14	59.6	1.8	3.0	13.9	15.1	16.4	17.7	19.0	29.7	31.0	33.5	18 16.43	0.16	10.36	8 18 5.91	+ 1.80
	λ Ursæ Minoris, S.P.	15	. .	. .	. .	. .	. .	. .	50.0	57.0	2.0	6.0	13.0	24 49.60	29 36.10	10.36	. . . .	— 45.89
	B. A. C. 2899 . .	16	. .	. .	. .	24.6	25.7	26.8	28.0	29.2	. .	. .	. .	30 26.86	0.07	10.35	8 30 16.44	+ 2.94
	Dorpat 1270, (1st *)	17	39.5	41.5	42.6	. .	. .	. .	. .	. .	6.4	7.5	9.5	38 54.50	0.10	10.35	8 38 44.05	2.42
	Dorpat 1270, (2d *)	18	. .	. .	. .	52.6	53.7	54.9	56.0	57.1	. .	. .	. .	38 54.86	0.10	10.35	8 38 44.41	2.42
	B. A. C. 3015 . .	19	44.0	46.2	47.4	57.4	58.5	59.7	1.0	2.1	12.3	13.3	15.5	45 59.76	0.08	10.35	8 45 49.33	2.81
	*—13° 33′ . . .	20	41.9	44.0	45.1	55.0	56.1	57.3	58.6	59.7	9.5	10.6	12.8	48 57.33	0.13	10.35	8 48 46.85	2.10
	O. Arg. S. 9258 .	21	54.4	56.6	57.6	. .	. .	. .	. .	. .	23.8	25.0	27.5	56 10.82	0.15	10.35	8 56 0.32	1.73
	c Ursæ Majoris . .	22	37.2	41.6	43.9	4.3	6.4	9.0	11.8	13.9	34.3	36.7	41.2	4 9.12	0.04	10.35	9 3 58.73	3.79
	θ Hydræ	23	29.0	31.0	32.1	41.8	42.8	44.0	45.1	46.2	55.9	56.9	59.0	7 43.98	0.10	10.35	9 7 33.53	2.40
	Lalande 18288 .	24	13.4	16.0	17.4	29.2	30.5	32.0	33.4	34.8	46.6	48.0	50.6	10 31.99	0.06	10.35	9 10 21.58	3.01
	Lalande 18362 .	25	38.2	40.9	42.3	54.6	55.9	57.5	59.0	0.3	12.7	14.1	16.7	12 57.47	0.06	10.35	9 12 47.06	3.05
	Lacaille 3796 . .	26	44.5	47.0	48.4	59.6	0.7	2.0	3.4	4.6	15.7	16.9	19.4	16 2.02	0.17	10.35	9 15 51.50	1.48
	Lacaille 3810 . .	27	. .	. .	. .	34.4	35.6	37.0	38.4	39.6	51.4	52.7	55.3	18 43.05	6.23	10.34	9 18 26.48	1.30
	Lacaille 3834 . .	28	0.2	2.6	3.8	15.3	16.5	17.9	19.3	20.5	32.0	33.4	35.8	21 17.94	0.18	10.34	9 21 7.42	1.34
	Lacaille 3838 . .	29	. .	. .	. .	53.6	54.8	56.2	57.7	58.9	10.5	11.7	14.1	22 2.19	6.11	10.34	9 21 45.74	1.35
	*—36° 10′ . . .	30	0.6	3.3	4.5	16.4	17.7	19.3	20.7	22.0	33.9	35.2	38.0	26 19.24	0.19	10.34	9 26 8.71	1.21
	O. Arg. S. 9856 .	31	. .	. .	. .	32.9	34.1	35.4	36.9	38.0	49.5	50.6	53.1	28 41.31	6.01	10.34	9 28 24.96	1.40
	O. Arg. S. 9914 .	32	. .	. .	. .	4.6	5.6	7.0	8.3	9.5	19.9	21.3	23.4	31 12.45	5.60	10.34	9 30 56.51	1.66
	*—35° 0′ . . .	33	51.7	54.1	55.3	7.0	8.3	9.9	11.4	12.5	24.2	25.6	28.0	37 9.82	0.19	10.34	9 36 59.29	1.24
	Lacaille 3983 . .	34	. .	. .	. .	36.0	37.3	40.0	57.9	0.5	2.0	3.7	5.3	37 52.84	31.37	10.34	9 37 11.13	1.24
	Lacaille 4016 . .	35	18.4	20.9	22.1	34.6	36.0	37.5	39.1	40.4	52.7	54.0	56.7	41 37.49	0.21	10.34	9 41 26.94	1.06
	μ Leonis	36	13.1	15.5	16.5	27.1	28.4	29.8	31.1	32.3	42.9	44.1	46.5	45 29.75	0.06	10.34	9 45 19.35	2.63
	O. Arg. S. 10236 .	37	40.4	43.0	44.1	55.1	56.3	57.7	59.2	0.4	11.4	12.7	15.0	50 57.75	0.17	10.34	9 50 47.24	1.43
	*—38° 38′ . . .	38	5.8	8.6	9.9	22.1	23.4	25.0	26.6	27.7	40.2	41.5	44.3	58 25.01	0.21	10.34	9 58 14.46	1.05
	A Leonis	39	53.0	55.3	56.4	6.2	7.3	8.5	9.6	10.7	20.5	21.5	23.7	1 8.43	0.09	10.34	10 0 58.00	2.31
	*+13° 8′ . . .	40	32.4	34.6	35.6	45.5	46.5	47.8	49.1	50.2	59.8	1.2	3.1	3 47.80	0.08	10.34	10 3 37.38	2.33
	Lacaille 4253 . .	41	17.8	20.4	21.7	. .	. .	. .	. .	. .	52.3	53.6	56.4	14 37.03	0.21	10.33	10 14 26.49	1.02
	Lacaille 4286 . .	42	16.4	18.7	19.9	30.9	32.0	33.5	34.8	35.9	46.8	47.9	50.5	19 33.39	0.17	10.33	10 19 22.89	1.42
	*—7° 36′ . . .	43	50.8	53.0	54.1	. .	. .	. .	. .	. .	18.0	19.2	21.4	22 6.08	0.11	10.33	10 21 55.64	1.90
	ρ Leonis	44	0.9	3.0	4.1	3.9	5.0	6.2	7.4	8.3	18.1	19.2	21.6	26 6.15	0.09	10.33	10 25 55.73	2.19
	Weisse 517 . .	45	48.7	50.9	52.0	. .	. .	. .	. .	. .	15.7	16.7	18.8	30 3.80	0.11	10.33	10 29 53.36	1.98
	*—35° 50′ . . .	46	45.7	48.4	49.7	19.5	20.4	23.1	41.4	43.9	45.2	46.9	48.5	35 22.97	18.67	10.33	10 34 53.97	1.16
	*—36° 10′ . . .	47	11.0	13.7	15.1	27.0	28.3	. .	31.2	32.6	44.5	45.8	48.2	38 29.74	0.19	10.33	10 38 19.22	1.14
	Weisse (2) 818 .	48	49.0	51.8	53.2	. .	. .	. .	. .	. .	23.3	24.7	27.4	41 8.23	0.20	10.33	10 40 57.70	2.36
	*—0° 39′ . . .	49	. .	56.8	58.0	7.6	8.6	9.8	11.0	12.1	21.5	22.6	. .	47 9.78	0.10	10.33	10 46 59.35	2.01
	Lalande 21081 .	50	6.5	8.9	10.3	22.3	23.6	25.1	26.6	28.0	39.9	41.3	43.7	52 25.11	— 0.06	—10.33	10 52 14.72	+ 2.28

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 27, 9.7	— 10.34	+ 0.012	+ 0.09	— 0.10

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Mar. 27	B. A. C. 3783 . .	1	56.0	58.5	59.8	. .	. .	. .	. .	. .	27.4	28.7	31.2	57 13.60	− 0.17	−10.32	10 57 3.11	+ 1.33
Y.	*−28° 58′ . . .	2	50.4	52.7	53.9	5.0	6.0	7.4	8.8	9.9	21.0	22.1	24.5	1 7.43	− 0.17	10.32	11 0 56.94	1.40
	*−28° 52′ . . .	3	8.8	10.3	11.7	13.1	15.6	. .	24.3	26.8	28.3	29.7	31.0	3 49.96	+ 0.23	10.32	11 3 39.87	1.40
	Lacaille 4624 . .	4	34.1	36.7	37.8	48.6	49.8	51.1	52.4	53.7	4.7	5.9	8.4	3 51.20	− 0.17	10.32	11 3 40.71	1.40
	*−26° 35′ . . .	5	16.5	18.7	19.8	30.5	31.8	33.1	34.6	35.7	46.4	47.6	49.9	8 33.15	0.16	10.32	11 8 22.67	1.47
	O. Arg. S. 11291 .	6	44.7	47.0	48.3	59.0	0.3	1.5	2.9	4.0	15.0	16.3	18.6	12 1.60	0.16	10.32	11 11 51.12	1.44
	O. Arg. S. 11311 .	7	. .	. .	. .	58.9	0.2	2.7	19.6	22.0	23.6	25.1	26.6	14 14.84	29.61	10.32	11 13 34.91	1.39
	Weisse (2) 312. .	8	36.3	38.5	39.9	51.5	52.7	54.0	55.3	56.5	8.0	9.3	11.6	17 53.96	0.06	10.32	11 17 43.58	2.12
	τ Leonis	9	8.5	10.5	11.7	21.5	22.4	23.5	24.6	25.7	35.4	36.5	38.6	21 23.54	0.10	10.32	11 21 13.12	1.96
31	ε Hydræ	10	41.7	43.8	44.8	54.6	55.6	56.8	57.9	59.0	8.7	9.7	11.8	39 56.76	0.09	5.96		
E.	o^2 Cancri	11	7.0	9.1	10.2	20.3	21.4	22.5	24.0	25.0	35.0	36.1	38.2	50 22.62	0.09	5.96	8 50 16.57	2.81
	B. A. C. 3104 . .	12	56.4	58.3	59.6	9.7	10.7	11.9	13.2	14.1	24.0	25.3	27.5	59 11.88	− 0.09	5.97	8 59 5.82	2.75
	78 Cancri	13	. .	. .	. .	45.8	46.8	48.0	49.3	50.3	0.5	1.7	4.0	1 53.30	+ 5.14	5.97	9 1 52.47	2.78
	Weisse (2) 87 . .	†14	. .	. .	. .	26.3	27.3	28.6	29.8	31.0	. .	. .	. .	6 28.60	− 0.09	5.97	9 6 22.54	2.94
	α Lyncis	15	52.6	54.9	56.3	8.0	9.3	10.8	12.2	13.4	25.3	26.5	29.0	13 10.75	0.09	5.97	9 13 4.69	3.04
	h Mali	16	32.0	34.4	35.5	46.0	47.4	48.6	49.9	51.1	1.7	2.9	5.3	15 48.62	0.12	5.97	9 15 42.53	1.71
	O. Arg. S. 9692 .	17	27.0	29.5	30.7	41.6	42.6	44.1	45.6	46.9	57.9	59.5	1.3	19 44.24	0.12	5.97	9 19 38.15	1.60
	λ Leonis	18	5.0	7.1	8.3	18.8	20.0	21.3	22.5	23.5	34.2	35.4	37.7	24 21.25	0.09	5.97	9 24 15.19	2.75
	O. Arg. S. 9888 .	19	27.4	29.5	30.7	41.1	42.3	43.4	44.6	45.7	56.2	57.3	59.5	29 43.43	0.11	5.98	9 29 37.34	1.82
	*+25° 4′ . . .	20	. .	. .	. .	57.0	58.1	59.5	0.8	1.8	. .	. .	. .	31 59.44	0.09	5.98	9 31 53.37	2.72
	B. A. C. 3339 . .	21	29.9	31.8	33.0	42.7	43.7	44.9	46.0	47.1	56.7	57.8	59.9	39 44.86	0.09	5.98	9 39 38.79	2.30
	17 Leonis Minoris .	22	12.5	15.0	16.3	28.7	30.2	31.6	33.0	34.3	46.8	48.2	51.0	44 31.60	0.09	5.98	9 44 25.53	2.85
	μ Leonis	23	. .	. .	. .	. .	. .	. .	58.8	0.9	2.3	3.9	5.1	46 2.20	36.97	5.98	. . . .	2.68
	Weisse (2) 1096 .	24	2.4	4.5	5.4	15.8	16.8	18.2	19.5	20.4	30.4	31.5	34.0	52 18.08	0.09	5.98	9 52 12.01	2.51
	Lacaille 4120 . .	25	. .	. .	. .	41.6	42.9	43.9	45.4	46.7	. .	. .	. .	58 44.10	0.13	5.99	9 58 37.98	1.35
	16 Sextantis . . .	26	14.8	16.8	18.0	27.5	28.7	30.0	31.0	32.1	41.7	42.8	45.0	2 29.85	0.09	5.99	10 2 23.77	2.28
	*+12° 3′ . . .	27	. .	. .	. .	57.0	58.3	0.4	15.4	17.4	18.5	20.1	21.4	7 11.06	26.25	5.99	10 6 38.82	2.34
	Weisse (2) 197. .	28	27.0	29.6	30.9	43.4	44.5	46.2	47.6	48.7	1.0	2.1	4.9	10 45.99	0.09	5.99	10 10 39.91	2.63
	*−3° 2′. . . .	†29	. .	. .	. .	54.0	55.1	56.1	57.3	58.2	. .	. .	. .	15 56.14	0.09	5.99	10 15 50.06	2.06
	Weisse 315. . .	30	13.2	15.4	16.4	26.0	27.0	28.1	29.4	30.5	40.1	41.1	43.3	19 28.23	− 0.09	5.99	10 19 22.15	2.18
	O. Arg. S. 10666 .	31	7.7	10.0	11.1	. .	. .	. .	. .	. .	38.9	40.3	. .	23 21.60	+ 3.34	5.99	10 23 18.95	1.42
	δ Antliæ	32	24.0	26.1	27.4	. .	. .	. .	. .	. .	54.8	56.0	58.4	23 41.12	− 0.12	5.99	10 23 35.01	1.41
	*−3° 54′ . . .	†33	. .	. .	. .	21.9	22.9	24.1	25.2	26.4	. .	. .	. .	27 24.10	0.09	5.99	10 27 18.02	2.02
	*−3° 53′ . . .	†34	. .	. .	. .	0.2	1.2	2.3	3.4	4.5	. .	. .	. .	29 2.32	0.09	6.00	10 28 56.23	2.01
	B. A. C. 3661 . .	35	40.0	42.4	43.7	55.1	56.3	57.6	58.9	0.1	11.5	12.9	15.5	34 57.64	0.09	6.00	10 34 51.55	2.41
	Weisse 703. . .	36	22.4	24.5	25.6	35.3	36.3	37.5	38.7	39.7	49.4	50.4	52.5	40 37.48	0.09	6.00	10 40 31.39	2.13
	l Leonis	37	14.0	16.0	17.3	27.0	28.1	29.3	30.5	31.6	41.2	42.5	44.6	42 29.28	− 0.09	6.00	. . . .	2.21
	Polaris, S. P. . .	38	3.0	31.0	17.0	. .	. .	. .	. .	. .	. .	34.0	16.0:	8 20.20	+ 2 6.12	. .	. . . .	57.66
Apr. 3	α Canis Minoris. .	39	18.0	19.9	21.2	30.9	31.9	33.2	34.4	35.4	45.0	46.1	48.3	32 33.12	− 0.10	6.22	. . . .	3.02
Y.	Lacaille 2923 . .	40	13.7	16.0	17.2	. .	. .	. .	. .	. .	41.5	42.7	45.2	37 29.38	0.08	6.23	7 37 23.07	2.19
	Rumker 2305 . .	41	10.0	12.3	13.5	23.7	24.9	26.1	27.3	28.4	38.6	39.8	42.0	44 26.05	0.11	6.23	7 44 19.71	3.33
	O. Arg. N. 8445 .	42	47.0	49.8	51.5	5.7	7.5	9.0	10.7	12.6	26.3	28.0	31.3	49 9.04	0.19	6.23	7 49 2.62	4.19
	*−37° 16′ . . .	43	7.6	10.0	11.7	23.6	24.9	26.5	28.0	29.4	41.4	42.9	45.4	53 26.49	0.08	6.23	7 53 20.18	1.69
	O. Arg. N. 8586 .	44	30.0	34.5	36.5	56.4	58.7	1.0	3.3	5.2	24.7	27.5	31.8	58 0.87	0.28	6.23	7 57 54.36	4.89
	O. Arg. N. 8632 .	45	12.9	17.2	19.2	39.3	41.4	43.7	46.0	48.2	7.8	10.1	14.6	0 43.67	0.28	6.23	8 0 37.16	4.85
	Carrington 1186 .	46	31.5	45.0	51.6	. .	. .	. .	. .	. .	23.3	28.6	42.5	6 7.08	0.88	6.24	8 5 59.96	9.33
	Carrington 1187 .	47	. .	. .	. .	56.6	3.4	10.5	17.9	24.9	. .	. .	. .	6 10.66	0.88	6.24	8 6 3.54	9.31
	O. Arg. S. 8291 .	48	. .	. .	. .	33.5	34.7	36.1	37.4	38.6	. .	. .	. .	10 36.06	0.08	6.24	8 10 29.74	2.06
	O. Arg. S. 8292 .	49	. .	. .	. .	49.9	51.1	53.4	9.3	11.6	13.1	14.8	16.1	11 4.91	28.27	6.24	8 10 30.40	2.06
	31 Lyncis	50	37.5	40.3	41.8	55.0	56.4	58.2	59.9	1.4	14.5	16.2	19.0	13 58.20	0.17	6.24	8 13 51.79	3.82
	B. A. C. 2827 . .	51	. .	. .	. .	. .	. .	. .	3.7	6.0	7.6	9.0	10.4	20 7.34	− 36.06	− 6.24	8 19 25.04	+ 2.05

14. Faint.
29. Faint; hazy.
33. Hazy.
34. Hazy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Mar. 31, 9.7	− 5.98	− 0.020	+ 0.03	− 0.09

DATE.		OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Apr. 3	λ	Ursæ Minoris, S.P.	1	. .	. .	. .	. .	. .	. .	45.0	51.0	57.0	4.0	14.0	24 46.20	−29 29.21	− 6.24	. . . .	− 53.48
Y.		Weisse 738 . .	2	. .	. .	. .	. .	. .	. .	57.0	59.2	0.5	1.8	3.1	30 0.32	33.84	6.24	8 29 20.24	+ 2.91
		*+19° 48′ . . .	3	40.3	42.7	43.8	53.9	55.0	56.4	57.6	58.7	8.9	10.1	12.4	32 56.35	0.11	6.24	8 32 50.00	3.03
		*+19° 45′ ± . .	4	. .	. .	. .	22.1	23.4	25.7	41.3	43.4	44.8	46.2	47.5	33 36.80	27.29	6.24	8 33 3.27	3.03
		*+19° 47′ ± . .	5	. .	. .	. .	28.4	29.5	31.7	47.6	49.8	51.1	52.7	53.8	33 43.08	27.29	6.24	8 33 9.55	3.03
	ε	Hydræ	6	42.2	44.2	45.1	54.9	56.0	57.2	58.3	59.3	9.1	10.2	11.3	39 57.07	0.10	6.25	. . . .	2.71
		Weisse 1050 . .	†7	. .	. .	. .	22.6	23.7	24.8	26.1	27.2	36.8	37.8	39.8	41 29.85	− 5.10	6.25	8 41 18.50	2.69
		Weisse 1077 . .	†8	32.0	34.0	35.1	44.8	45.8	47.0	48.2	49.1	. .	. .	. .	42 42.00	+ 4.90	6.25	8 42 40.65	2.68
		Rumker 2702 . .	9	2.6	6.2	8.0	24.5	26.3	28.5	30.4	32.3	48.5	50.6	54.2	50 28.37	− 0.23	6.25	8 50 21.89	3.85
		*−27° 19′ . . .	10	17.8	20.1	21.4	32.1	33.3	34.5	35.9	37.1	47.9	49.2	51.5	56 34.62	0.08	6.25	8 56 28.29	1.77
		*−31° 22′ . . .	11	39.6	41.8	43.2	54.6	55.9	57.3	58.8	59.9	11.0	12.3	14.6	1 57.18	0.08	6.25	9 1 50.85	1.61
		Weisse 153 . .	12	38.3	40.3	41.6	51.2	52.2	53.4	54.6	55.7	5.3	6.4	8.5	8 53.41	0.10	6.25	9 8 47.06	2.54
		Weisse (2) 207 .	13	. .	. .	. .	24.0	25.2	26.5	27.7	28.9	. .	. .	. .	11 26.46	0.11	6.26	9 11 20.09	2.80
		*−8° 2′ . .	14	50.4	52.5	53.6	3.3	4.4	5.6	6.8	7.8	17.5	18.7	20.9	20 5.59	0.08	6.26	9 19 59.25	2.20
		Weisse 488 . .	15	22.2	24.3	25.5	35.2	36.4	37.6	38.8	39.8	49.7	50.8	52.9	23 37.56	0.08	6.26	9 23 31.22	2.09
	10	Leonis Minoris .	16	59.6	2.2	3.6	15.7	17.0	18.6	20.1	21.3	33.5	34.7	37.4	26 18.52	0.15	6.26	9 26 12.11	3.02
		Weisse (2) 639 .	17	35.6	37.8	38.9	48.9	50.0	51.3	52.6	53.8	3.7	5.0	7.2	30 51.35	0.11	6.26	9 30 44.98	2.64
		O. Arg. S. 10034 .	18	. .	56.8	58.0	8.7	9.8	11.1	12.5	13.5	24.2	25.5	. .	36 11.12	0.08	6.27	9 36 4.77	1.75
		Lacaille 3996 . .	19	. .	. .	. .	59.7	1.0	2.5	4.0	5.4	17.6	19.2	21.9	39 8.91	6.48	6.27	9 38 56.16	1.18
		Lacaille 4016 . .	20	14.3	16.8	18.2	30.6	31.8	33.3	34.8	36.4	48.8	50.1	52.8	41 33.45	0.08	6.27	9 41 27.10	1.18
		B. A. C. 3367 . .	21	7.9	10.5	11.7	23.5	24.7	26.1	27.5	28.9	40.7	42.0	44.6	44 26.19	0.08	6.27	9 44 19.84	1.31
		*−35° 38′ . . .	22	. .	. .	. .	3.5	4.6	6.0	7.5	8.8	20.7	22.0	24.6	45 12.21	6.20	6.27	9 44 59.74	1.30
		*−32° 46′ . . .	23	19.6	22.4	23.6	34.8	36.0	37.3	38.8	39.9	51.7	52.9	55.3	49 37.48	0.08	6.27	9 49 31.13	1.41
		B. A. C. 3409 . .	24	. .	. .	. .	23.5	24.6	27.2	44.1	46.6	48.0	49.8	51.1	52 39.36	29.74	6.27	9 52 3.35	2.71
		Lacaille 4115 . .	25	48.3	50.6	51.8	3.0	4.2	5.6	7.0	8.1	19.1	20.4	22.8	57 5.54	0.08	6.27	9 56 59.19	1.49
		Weisse (2) 1257 .	26	. .	. .	. .	41.9	43.1	44.5	45.8	47.0	58.2	59.6	1.9	59 50.25	5.88	6.27	9 59 38.10	2.66
		Lalande 19854 .	27	41.1	42.7	43.9	56.4	57.4	58.8	0.4	1.6	12.8	14.2	16.6	5 58.72	0.14	6.28	10 5 52.30	2.64
		Lalande 19869 .	28	28.2	30.7	31.8	43.2	44.4	45.9	47.3	48.5	59.8	1.2	3.5	6 45.86	0.14	6.28	10 6 39.44	2.63
		Weisse (2) 197 .	29	27.3	30.0	31.2	43.5	44.8	46.4	47.8	49.0	1.5	2.9	5.4	10 46.35	0.15	6.28	10 10 39.92	2.67
	γ^1	Leonis	30	. .	38.3	39.5	49.7	50.9	52.1	53.3	54.4	4.8	5.9	. .	12 52.10	0.11	6.28	. . . .	2.46
7	κ	Cancri	31	27.9	29.9	30.9	40.8	41.9	43.1	44.2	45.2	55.1	56.2	58.3	0 43.05	0.13	3.42	. . . .	2.75
E.		*−23° 30′ . . .	32	. .	. .	. .	48.6	49.6	50.9	52.3	53.4	. .	. .	. .	1 50.96	0.01	3.42	9 1 47.53	1.94
		B. A. C. 3127 . .	33	48.5	50.9	52.0	2.6	3.7	5.0	6.3	7.5	18.0	19.2	21.7	4 5.04	0.00	3.42	9 4 1.62	1.88
		O. Arg. S. 9450 .	†34	. .	. .	. .	12.1	13.5	14.6	15.8	16.9	. .	. .	. .	6 14.58	0.01	3.42	9 6 11.15	1.92
		*−27° 41′ . . .	35	0.6	2.7	4.0	. .	. .	. .	. .	. .	29.6	30.8	33.4	10 16.85	0.00	3.42	9 10 13.43	1.77
		*−38° 51′ . . .	36	. .	32.0	33.5	45.8	47.1	48.8	50.3	51.5	3.8	5.0	. .	13 48.64	+ 0.05	3.42	9 13 45.27	1.34
		Weisse 337 . .	37	32.8	34.8	36.1	. .	47.1	48.3	49.5	. .	0.5	1.7	3.9	16 48.30	− 0.04	3.42	9 16 44.84	2.11
		Weisse 498 . .	38	47.5	49.7	50.8	0.7	1.7	3.0	4.3	5.2	15.0	16.1	18.4	24 2.95	− 0.05	3.42	9 23 59.48	2.15
		*−28° 26′ . . .	39	. .	. .	. .	24.0	25.1	26.4	27.8	29.0	. .	. .	. .	26 26.46	0.00	3.42	9 26 23.04	1.69
		*−35° 25′ . . .	40	31.6	34.1	35.3	47.3	48.5	49.9	51.4	52.6	4.5	5.7	8.4	30 49.94	+ 0.03	3.42	9 30 46.55	1.43
		O. Arg. S. 9938 .	41	. .	. .	. .	56.6	57.7	59.0	0.3	1.4	. .	. .	. .	31 59.00	− 0.01	3.42	9 31 55.57	1.81
		*−23° 39′ . . .	42	5.4	7.4	8.5	. .	20.2	21.6	22.8	. .	34.4	35.5	37.9	36 21.52	0.01	3.42	9 36 18.09	1.80
		*+11° 1′ . . .	43	25.0	27.1	28.1	. .	. .	. .	. .	. .	52.4	53.3	55.4	39 40.22	0.13	3.42	9 39 36.67	2.53
		Weisse 871 . .	44	29.7	31.7	32.9	42.5	43.6	44.9	46.0	47.1	57.0	58.0	0.1	40 44.86	− 0.13	3.42	9 40 41.31	2.53
		*−38° 56′ . . .	45	27.0	29.8	31.1	43.5	44.9	46.4	47.9	49.1	1.5	2.8	5.5	43 46.32	+ 0.05	3.42	9 43 42.95	1.24
		Weisse (2) 1003 .	46	4.1	7.1	8.5	. .	. .	. .	. .	. .	42.0	43.5	46.5	48 25.28	− 0.33	3.42	9 48 21.53	3.03
	α	Leonis	47	12.6	14.7	15.8	. .	. .	. .	. .	. .	. .	. .	. .	1 14.37	+ 13.45	3.42	. . . .	2.44
		Lalande 19981 .	48	36.6	38.9	40.1	. .	. .	. .	. .	. .	. .	3.9	5.1	10 48.92	+ 2.93	3.42	10 10 48.43	2.39
		*−3° 2′ . . .	49	. .	. .	. .	. .	. .	. .	17.0	18.8	20.1	21.6	22.9	16 20.08	− 33.10	3.42	10 15 43.56	2.13
		Lacaille 4287 . .	50	. .	. .	. .	13.3	14.8	. .	17.7	19.1	. .	. .	. .	19 16.22	+ 0.04	− 3.42	10 19 12.84	+ 1.22

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 3, 8.8	− 6.25	− 0.020	− 0.05	− 0.09
7, 10.0	− 3.42	− 0.004	− 0.20	− 0.09

7. Very faint.
8. Very faint.
34. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Apr. 7	O. Arg. N. 10911 .	1	23.5	26.3	27.8	41.5	42.9	44.6	46.5	48.0	1.3	2.7	5.9	24 44.64	— 0.33	— 3.42	10 24 40.89	+ 2.67
E.	48 Leonis	2	47.4	49.5	50.6	. .	. .	. .	. .	. .	14.3	15.5	17.7	28 2.50	0.12	3.42	10 27 58.96	2.25
	O. Arg. N. 11017 .	3	0.7	3.7	5.4	19.5	20.9	22.7	24.4	26.0	40.3	41.8	44.9	32 22.75	0.36	3.42	10 32 18.97	2.61
	*+5° 0′. . . .	4	26.6	28.6	29.6	. .	. .	. .	. .	. .	53.6	54.6	56.8	36 41.63	0.11	3.42	10 36 38.10	2.17
	*+4° 58′ . . .	5	38.0	40.1	41.1	. .	. .	. .	. .	. .	4.8	6.0	8.3	36 53.05	0.11	3.42	10 36 49.52	2.17
	Weisse (2) 818. .	6	42.5	45.0	46.5	58.7	0.0	1.5	3.0	4.4	16.6	17.9	20.6	41 1.52	— 0.28	3.42	10 40 57.82	2.47
	*— 0° 41′ . . .	7	25.0	27.0	28.1	37.8	38.9	40.1	. .	. .	51.8	53.0	55.1	48 39.64	+ 0.29	3.42	10 48 36.51	2.05
	*—34° 9′ . . .	8	59.1	1.4	2.9	14.4	15.7	. .	18.7	20.0	31.5	32.9	35.5	53 17.21	+ 0.03	3.42	10 53 13.82	1.32
	Lacaille 4543 . .	9	25.1	27.6	. .	40.5	41.7	. .	. .	. .	57.5	58.8	1.5	53 44.67	— 1.43	3.42	10 53 39.82	1.31
	*+11° 0′ . . .	10	12.7	14.8	15.9	25.9	27.0	28.1	. .	. .	40.0	41.1	43.3	59 27.64	+ 0.26	3.42	10 59 24.48	2.15
	B. A. C. 3811 . .	11	. .	. .	. .	8.4	9.6	11.1	12.4	. .	. .	. .	. .	2 10.37	+ 0.42	3.42	11 2 7.37	2.30
	δ Leonis	12	. .	. .	. .	25.5	26.8	29.0	44.9	47.0	48.4	50.0	51.1	7 40.34	— 27.61	3.42	. . . .	2.20
	*+0° 38′ . . .	13	39.4	41.4	42.5	52.3	53.1	. .	. .	. .	. .	. .	. .	12 45.74	+ 8.55	3.42	11 12 50.87	2.00
	Polaris, S. P. . .	14	16.0	. .	6.0	. .	. .	. .	. .	. .	20.0	. .	5.0	10 9.40	+ 1.89			
8	B. A. C. 2590 . .	15	42.1	53.8	0.0	54.7	0.5	7.3	13.9	19.5	14.1	20.4	32.1	44 7.13	— 0.39	3.51	7 44 3.23	10.02
Y.	53 Camelopardi . .	16	2.8	7.0	9.1	28.8	31.0	33.4	35.8	37.9	57.6	59.8	4.1	50 33.39	0.15	3.51	7 50 29.78	5.18
	55 Camelopardi . .	17	6.4	12.1	14.8	41.5	44.8	48.0	51.5	54.1	20.7	24.0	29.7	59 47.96	0.20	3.51	7 59 44.25	5.99
	ρ Argus	18	. .	. .	. .	59.6	0.7	1.9	3.3	4.3	14.9	16.1	18.5	2 7.41	5.56	3.51	8 1 58.34	2.22
	B. A. C. 2790 . .	19	25.5	28.0	29.1	40.2	41.4	42.8	44.2	45.3	56.4	57.7	0.2	12 42.80	0.12	3.51	8 12 39.17	1.99
	Lacaille 3272 . .	20	. .	. .	. .	54.0	55.3	56.8	58.4	59.6	. .	. .	. .	14 56.82	0.13	3.51	8 14 53.18	1.70
	Weisse (2) 429. .	21	33.8	34.8	36.2	37.5	38.5	. .	7.6	9.9	11.1	12.6	13.9	19 53.59	17.59	3.51	8 19 32.49	3.21
	*+19° 44′ . . .	22	. .	. .	. .	58.5	59.6	1.9	17.5	19.7	20.9	22.4	23.7	20 13.02	27.27	3.51	8 19 42.24	+ 3.21
	λ Ursæ Min., S. P. .	23	. .	. .	. .	. .	. .	. .	51.0	58.0	3.0	12.0	17.0	24 52.20	29 32.85	3.51	. . . .	— 58.61
	Weisse 792. . .	24	6.7	8.9	10.0	19.6	20.6	21.9	23.1	24.1	33.7	34.9	37.0	31 21.86	0.09	3.51	8 31 18.26	+ 2.84
	Lacaille 3449 . .	25	0.1	2.3	3.6	14.5	15.6	17.1	18.6	19.6	30.7	31.8	34.2	34 17.10	0.12	3.51	8 34 13.47	1.92
	Lacaille 3509 . .	26	20.7	23.1	24.2	34.9	36.0	37.4	38.8	39.9	50.6	51.8	54.2	40 37.42	0.11	3.51	8 40 33.80	1.97
	Lacaille 3511 . .	27	. .	. .	. .	7.3	8.5	10.8	27.2	29.6	30.8	32.5	33.7	41 22.55	28.59	3.51	8 40 50.45	1.97
	Lacaille 3561 . .	28	44.6	47.4	48.8	1.5	3.0	4.6	6.3	7.7	20.7	22.0	24.7	45 4.66	0.14	3.51	8 45 1.01	1.36
	*—30° 47′ . . .	29	. .	. .	. .	45.7	47.0	48.3	49.7	50.8	2.0	3.3	5.8	47 54.08	5.91	3.51	8 47 44.66	1.78
	κ Cancri	30	27.8	29.9	31.0	40.8	41.7	43.0	44.2	45.2	55.0	56.3	58.3	0 43.02	0.09	3.51	9 0 39.42	2.76
	c Ursæ Majoris . .	31	30.1	34.6	36.7	57.2	59.6	1.9	4.3	6.5	26.9	29.3	33.9	4 1.91	0.15	3.51	9 3 58.25	4.18
	*+20° 12′ . . .	32	0.3	2.5	3.8	14.0	15.1	16.4	17.6	18.8	29.1	30.2	32.5	9 16.39	0.09	3.51	9 9 12.79	2.89
	O. Arg. S. 9539 .	33	55.2	57.5	58.7	9.8	10.9	12.3	13.6	14.8	25.9	27.2	29.4	11 12.30	0.12	3.51	9 11 8.67	1.73
	26 Hydræ	34	. .	. .	. .	44.0	45.3	47.4	2.5	4.5	5.8	7.4	8.5	13 58.18	26.20	3.51	9 13 28.47	2.22
	Weisse 325. . .	35	. .	. .	. .	47.3	48.5	50.6	5.4	7.6	8.6	10.2	11.4	17 1.20	25.94	3.51	9 16 31.75	2.62
	*—27° 49′ . . .	36	31.5	33.9	35.1	45.8	47.1	48.5	49.7	51.0	1.7	3.1	5.5	21 48.45	0.12	3.51	9 21 44.82	1.74
	Lacaille 3874 . .	37	58.3	0.5	1.9	13.2	14.5	16.0	17.3	18.7	29.9	31.3	33.8	24 15.95	0.13	3.51	9 24 12.31	1.56
	Weisse (2) 817. .	38	7.5	10.0	11.1	22.0	23.2	24.6	25.8	27.2	37.9	39.2	41.6	39 24.55	0.09	3.51	9 39 20.95	2.83
	Brisbane 2657. .	39	18.1	19.6	21.0	22.4	23.9	. .	59.9	2.7	4.4	6.1	7.8	41 42.59	21.66	3.51	9 41 17.42	1.21
	*—38° 58′ . . .	40	. .	. .	. .	. .	. .	. .	24.6	27.2	28.8	31.1	32.7	44 28.88	42.52	3.51	9 43 42.85	1.26
	O. Arg. N. 10356 .	41	12.3	15.9	17.6	34.6	36.4	38.5	40.4	42.2	59.0	0.9	4.5	47 38.39	0.13	3.51	9 47 34.75	3.26
	*—38° 56′ . . .	42	14.7	17.3	18.8	31.2	32.4	33.9	35.4	36.7	49.5	50.7	53.2	52 33.98	— 0.13	3.51	9 52 30.34	1.23
	*—38° 50′ . . .	43	20.0	22.7	24.1	36.3	37.8	39.4	40.9	42.1	. .	. .	. .	57 32.91	+ 6.26	3.51	9 57 35.66	1.23
	B. A. C. 3448 . .	44	. .	. .	. .	45.3	46.5	48.2	49.6	50.7	2.4	3.7	6.2	59 54.08	— 6.14	3.51	9 59 44.43	1.41
	*—32° 13′ . . .	45	50.1	52.8	54.2	5.6	6.8	8.1	9.6	10.8	22.5	23.6	26.1	3 8.20	0.12	3.51	10 3 4.57	1.47
	*+12° 1′ . . .	46	. .	. .	. .	39.9	41.1	42.3	43.4	44.6	54.3	55.4	57.6	6 47.32	5.18	3.51	10 6 38.63	2.42
	*—30° 27′ . . .	47	36.0	38.4	39.6	50.7	52.0	53.4	54.6	55.8	7.1	8.4	10.8	9 53.35	0.12	3.51	10 9 49.72	1.52
	Lacaille 4242 . .	48	36.9	39.6	40.8	52.7	53.9	55.4	56.9	58.1	10.2	11.6	14.1	12 55.47	0.13	3.51	10 12 51.83	1.31
	μ Hydræ	49	34.4	36.6	37.7	47.6	48.7	50.0	51.2	52.4	2.5	3.6	5.7	19 50.04	— 0.10	— 3.51	10 19 46.43	+ 1.88

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 8, 9.9	— 3.51	0.000	+ 0.02	— 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Apr. 8	Rumker 3211 . .	1	17.7	19.8	20.9	30.8	31.8	33.0	34.2	35.4	45.1	46.3	48.4	23 33.04	− 0.09	− 3.51	10 23 29.44	+ 2.34
Y.	Weisse 513 . .	2	18.4	20.4	21.6	31.6	32.7	33.9	35.1	36.3	46.1	47.3	49.6	26 33.91	0.09	3.51	10 26 30.31	2.36
	35 Leonis Minoris .	3	35.6	38.1	39.5	51.6	52.8	54.3	55.8	57.0	9.0	10.3	13.0	28 54.27	0.10	3.51	10 28 50.66	2.57
	O. Arg. N. 11017 .	4	0.4	3.3	5.0	19.3	20.9	22.8	24.5	25.8	40.1	41.7	44.9	32 22.61	0.11	3.51	10 32 18.99	2.62
	Weisse 637 . .	5	14.4	16.4	17.6	27.3	28.4	29.5	30.7	31.7	41.3	42.3	44.6	36 29.47	0.09	3.51	10 36 25.87	2.06
	k Leonis	6	17.8	20.0	21.1	31.0	32.1	33.3	34.5	35.4	45.5	46.6	49.0	39 33.30	0.09	3.51	10 39 29.70	2.29
	l Leonis	7	11.4	13.6	14.6	24.4	25.5	26.6	28.0	29.1	38.7	39.9	42.0	42 26.71	0.09	3.51	10 42 23.11	2.27
	B. A. C. 3779 . .	8	22.1	24.3	25.4	34.9	36.0	37.2	38.4	39.3	49.0	50.1	52.2	56 37.17	0.09	3.51	10 56 33.57	2.04
	*−28° 58′ . . .	9	. .	. .	. .	14.0	15.2	17.7	34.9	37.1	38.5	40.1	41.4	1 29.86	29.35	3.51	11 0 57.00	1.48
	*−28° 52′ . . .	†10	. .	. .	. .	57.2	58.5	0.6	17.6	20.0	21.3	22.8	24.0	4 12.75	− 29.32	3.51	11 3 39.92	1.48
	Lacaille 4624 . .	11	27.3	29.6	30.8	41.8	43.1	44.5	45.8	46.9	. .	. .	. .	3 38.72	+ 5.56	3.51	11 3 40.77	1.48
	*+12° 20′ . . .	12	58.2	0.3	1.5	11.3	12.3	13.6	14.6	15.7	25.6	26.9	28.8	9 13.53	− 0.09	3.51	11 9 9.93	2.13
	O. Arg. S. 11311 .	13	21.3	23.7	25.0	36.2	37.3	38.6	39.9	41.0	52.1	53.5	55.9	13 38.59	0.12	3.51	11 13 34.96	1.46
	*−38° 22′ . . .	14	50.4	52.9	54.3	6.8	8.0	9.5	11.0	12.2	24.6	26.0	28.9	16 9.51	0.13	3.51	11 16 5.87	1.18
	Rumker 3575 . .	15	. .	. .	. .	56.5	57.7	0.0	15.2	17.6	19.1	20.6	22.0	20 11.09	27.07	3.51	11 19 40.51	2.12
	B. A. C. 3909 . .	16	32.0	34.1	35.2	44.8	45.9	47.1	48.2	49.3	58.9	59.8	2.1	22 47.04	0.09	3.51	11 22 43.44	1.96
	B. A. C. 3925 . .	17	57.7	59.8	0.9	10.5	11.5	12.8	14.0	15.0	24.9	25.8	28.0	26 12.81	0.10	3.51	11 26 9.20	1.87
	Weisse 450 . .	18	. .	. .	. .	0.5	1.6	2.8	4.0	5.1	14.7	15.7	17.9	27 7.79	5.10	3.51	11 26 59.18	1.89
	Weisse (2) 556 .	19	8.2	10.5	11.7	22.5	23.7	25.1	26.5	27.7	38.7	39.9	42.1	30 25.15	0.09	3.51	11 30 21.55	2.09
	Lacaille 4837 . .	20	16.8	19.3	20.5	32.7	34.0	35.6	37.1	38.2	50.4	51.9	54.5	33 35.55	0.13	3.51	11 33 31.91	1.23
	Weisse 652 . .	21	0.4	2.7	3.8	13.4	14.5	15.8	16.9	17.9	27.5	28.7	30.9	38 15.68	0.09	3.51	11 38 12.08	1.98
	Weisse (2) 793 .	22	15.4	16.6	17.8	19.0	20.1	. .	49.6	51.9	53.1	54.8	56.0	41 35.43	17.73	3.51	11 41 14.19	2.03
	93 Leonis	23	2.1	4.3	5.4	. .	. .	. .	. .	. .	30.7	31.9	34.1	41 18.08	0.09	3.51	11 41 14.48	2.03
	*−36° 11′ . . .	24	22.3	24.9	26.4	38.4	39.7	41.2	42.6	43.7	55.9	57.2	0.0	44 41.12	0.13	3.51	11 44 37.48	1.28
	O. Arg. S. 11827 .	25	. .	39.0	40.1	50.5	51.7	53.0	54.2	55.3	5.6	6.7	. .	53 52.90	− 0.10	3.51	11 53 49.29	1.64
	O. Arg. S. 11828 .	26	26.6	27.8	29.3	30.7	33.1	. .	37.5	39.7	41.0	42.7	44.0	54 5.24	+ 0.28	3.51	11 54 2.01	1.64
	o Virginis . . .	27	21.7	23.8	24.9	34.7	35.7	36.9	38.2	39.1	49.0	49.9	52.2	58 36.92	− 0.09	3.51	11 58 33.32	1.88
13	κ Cancri	28	28.6	30.8	32.0	41.7	42.7	44.0	45.3	46.3	56.0	57.2	59.3	0 43.99	0.05	4.46	. . . .	2.83
	*−27° 38′ . . .	29	58.6	. .	2.0	13.0	14.2	15.6	16.9	18.0	28.8	. .	32.5	2 15.51	0.16	4.46	9 2 10.89	1.92
	Lacaille 3751 . .	30	17.2	19.5	20.7	. .	. .	. .	7.9	10.1	11.6	13.2	14.5	10 51.84	17.91	4.46	9 10 29.47	1.86
	Lacaille 3802 . .	31	. .	0.9	2.2	13.3	14.5	15.9	17.3	18.4	29.6	30.8	. .	17 15.88	0.17	4.46	9 17 11.25	1.78
	B. A. C. 3235 . .	32	59.4	1.8	3.1	14.7	15.8	17.4	18.9	20.2	31.8	33.2	35.7	22 17.45	0.19	4.46	9 22 12.80	1.60
	Lacaille 3848 . .	33	. .	. .	. .	50.4	51.7	53.3	54.7	55.9	7.5	8.9	11.3	22 59.21	6.21	4.46	9 22 48.54	1.61
	10 Leonis Minoris .	34	. .	0.1	1.3	13.5	14.7	16.1	17.8	19.0	31.2	32.5	. .	26 16.24	0.00	4.46	9 26 11.78	3.19
	*−36° 23′ . . .	35	. .	. .	. .	33.9	35.4	36.8	38.2	39.4	51.4	52.7	55.4	36 42.90	6.37	4.46	9 36 32.07	1.48
	Weisse (2) 819 .	36	10.7	12.9	14.0	23.9	25.1	26.3	27.5	28.5	38.6	39.6	41.9	39 26.27	0.04	4.46	9 39 21.77	2.70
	Weisse (2) 856 .	37	18.3	21.0	22.4	34.4	35.5	37.3	38.8	40.0	52.1	53.6	56.2	41 37.24	0.00	4.46	9 41 32.78	3.06
	Weisse (2) 966 .	38	15.1	17.5	18.6	29.5	30.7	32.1	33.4	34.5	45.5	46.7	49.2	46 32.07	0.02	4.46	9 46 27.59	2.86
	Weisse (2) 1011 .	39	. .	36.2	37.4	47.1	48.2	49.4	50.6	51.6	1.3	2.4	. .	47 49.36	0.07	4.46	9 47 44.83	2.51
	*+13° 31′ . . .	40	25.1	27.2	28.4	38.5	39.4	40.7	42.0	43.0	52.8	54.0	56.1	56 40.65	0.05	4.46	9 56 36.14	2.56
	Weisse (2) 53 . .	41	2.2	4.7	5.9	17.0	18.2	19.6	21.0	22.3	33.4	34.8	37.2	4 19.66	0.01	4.46	10 4 15.19	2.77
	Weisse 75 . . .	42	13.3	15.5	16.6	26.4	27.5	28.8	30.0	31.1	40.9	42.0	44.2	6 28.75	0.05	4.46	10 6 24.24	2.49
	Weisse 204 . .	43	52.6	55.2	56.5	7.8	8.9	10.2	11.6	13.0	24.1	25.6	28.0	11 10.32	0.01	4.46	10 11 5.85	2.72
	44 Leonis	44	10.9	13.0	14.2	24.0	25.1	26.3	27.5	28.6	38.3	39.3	41.4	18 26.24	0.06	4.46	10 18 26.24	2.38
	Rumker 3203 . .	45	14.2	16.5	17.6	27.6	28.8	30.0	31.3	32.3	42.4	43.4	45.6	21 29.97	0.04	4.46	10 21 25.47	2.46
	*+37° 43′ . . .	46	. .	. .	. .	19.9	21.4	23.9	42.4	45.3	46.7	48.7	50.2	23 37.31	32.33	4.46	10 23 0.52	2.70
	ρ Leonis	47	44.7	47.0	48.0	57.6	58.7	0.0	1.2	2.4	12.1	13.2	15.4	26 0.03	0.06	4.46	. . . .	2.34
	Weisse 517 . .	48	42.8	45.0	46.1	55.8	56.8	58.0	59.1	0.1	9.9	11.0	12.9	29 57.95	0.09	4.46	10 29 53.40	2.12
	41 Ursæ Majoris . .	49	45.6	49.8	51.9	9.9	12.0	14.2	16.4	18.3	36.5	38.5	42.7	38 14.16	0.07	4.46	10 38 9.77	2.71
	*−35° 26′ . . .	50	. .	. .	. .	18.8	20.1	22.7	40.6	43.6	45.0	. .	. .	41 31.80	− 27.71	+ 4.46	10 40 59.63	+ 1.36

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 13, 10.4	− 4.46	− 0.003	+ 0.14	− 0.08

10. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 13 Y.	O. Arg. S. 10936 .	1	48.3	50.7	51.9	3.1	4.3	5.6	6.9	8.1	19.1	20.2	22.6	46 5.53	− 0.17	− 4.46	10 46 0.90	+ 1.55
	O. Arg. S. 10941 .	2	. .	. .	. .	37.4	38.6	41.1	57.9	0.6	1.8	3.6	5.0	46 53.25	29.54	4.46	10 46 19.25	1.54
	Weisse (2) 1017 .	3	23.2	25.6	26.9	37.1	38.3	39.7	41.0	42.1	52.4	53.7	56.0	51 39.64	0.02	4.46	10 51 35.16	2.34
	*+ 9° 20′ . . .	4	21.5	23.6	24.8	34.5	35.4	36.8	37.9	38.9	48.6	49.7	51.8	55 36.68	0.06	4.46	10 55 32.16	2.20
	*+34° 31′ . . .	5	57.8	0.3	1.7	13.4	14.6	16.0	17.5	18.7	30.4	31.7	34.3	58 16.04	0.00	4.46	10 58 11.58	2.38
	B. A. C. 3811 . .	6	. .	. .	. .	8.8	10.1	11.6	13.2	14.4	26.4	27.8	30.4	2 17.84	− 0.23	4.46	11 2 7.15	2.36
	*+59° 22′ . . .	7	. .	. .	. .	41.7	43.6	46.0	48.4	50.2	. .	. .	. .	5 45.98	+ 0.08	4.46	11 5 41.60	2.28
	Lacaille 4669 . .	8	7.1	9.7	11.0	23.4	24.4	25.9	27.4	28.5	40.7	42.1	44.7	9 25.90	− 0.21	4.46	11 9 21.23	1.26
	O. Arg. S. 11311 .	9	22.1	24.6	25.6	36.8	38.0	39.5	40.8	42.0	53.2	54.5	56.8	13 39.45	0.17	4.46	11 13 34.82	1.50
	B. A. C. 3875 . .	10	39.8	42.5	43.8	55.7	56.9	58.2	59.7	1.0	3.0	4.5	6.7	16 58.35	0.20	4.46	11 16 53.69	1.33
	B. A. C. 3903 . .	11	11.9	14.0	15.1	24.6	25.8	26.8	28.0	29.0	38.7	39.9	41.9	21 26.88	0.08	4.46	11 21 22.34	2.00
	Lacaille 3760 . .	12	. .	. .	. .	. .	. .	. .	3.6	6.3	7.6	9.5	10.9	24 7.58	41.87	4.46	11 23 21.25	1.25
	B. A. C. 3926 . .	13	14.4	16.7	17.9	29.2	30.4	31.6	33.0	34.2	45.4	46.5	49.0	26 31.66	0.17	4.46	11 26 27.03	1.47
	Weisse (2) 526 . .	14	. .	49.4	50.6	0.9	2.0	3.4	4.7	5.9	16.0	17.1	. .	29 3.33	0.03	4.46	11 28 58.84	2.11
	Weisse (2) 592 . .	15	27.9	30.1	31.3	41.5	42.6	43.9	45.3	46.3	56.5	57.6	59.9	31 43.90	0.03	4.46	11 31 39.41	2.10
	β Leonis	16	12.5	14.8	15.9	25.9	26.9	28.2	29.5	30.5	40.4	41.6	43.8	42 28.18	− 0.09	4.46	. . . .	2.01
	O. Arg. N. 12195 .	17	59.3	3.7	6.0	27.5	29.9	32.4	35.0	37.2	58.4	0.7	5.7	50 32.35	+ 0.10	4.46	11 50 27.99	1.46
	O. Arg. N. 12337 .	18	6.9	14.6	19.0	57.7	1.2	6.0	11.1	14.8	53.4	57.6	5.9	0 6.20	0.22	4.46	12 0 1.96	+ 0.02
	O. Arg. N. 12397 .	19	31.6	39.5	43.8	22.2	26.4	31.0	35.7	39.5	17.8	22.2	30.6	3 30.94	+ 0.22	4.47	12 3 26.69	− 0.08
	Lalande 22934 (1st*)	20	33.2	34.5	35.9	37.5	38.7	. .	11.7	14.4	15.8	17.5	18.7	7 55.79	− 19.76	4.47	12 7 31.56	+ 1.87
	Lalande 22934 (2d*)	21	20.3	22.7	24.0	. .	. .	. .	. .	. .	52.3	53.7	56.3	7 38.22	0.00	4.47	12 7 33.75	1.87
	Weisse 149. . .	22	52.9	54.9	56.0	5.8	6.9	8.1	9.4	10.4	20.0	21.1	23.3	11 8.07	0.06	4.47	12 11 3.54	1.90
	Weisse (2) 268. .	23	. .	. .	. .	44.5	45.8	47.4	48.9	50.4	2.6	3.8	6.6	13 53.75	6.36	4.47	12 13 42.92	1.78
	B. A. C. 4200 . .	24	59.2	1.2	2.2	11.9	13.0	14.2	15.4	16.4	26.0	27.2	29.3	21 14.18	0.09	4.47	12 21 9.62	1.82
	B. A. C. 4214 . .	25	16.1	18.4	19.5	29.8	31.0	32.4	33.6	34.7	45.3	46.4	48.7	23 32.35	0.15	4.47	12 23 27.73	1.62
	Weisse 452. . .	26	43.4	45.5	46.7	. .	. .	. .	. .	. .	10.3	11.5	13.7	27 58.52	0.07	4.47	12 27 53.98	1.85
	*+6° 43′ ±. . .	27	. .	. .	. .	56.4	57.5	58.7	59.9	1.0	. .	. .	. .	27 58.70	0.07	4.47	12 27 54.16	1.85
	B. A. C. 4255 . .	28	50.0	52.2	53.3	2.7	3.8	5.1	6.3	7.4	17.0	18.0	20.2	32 5.09	0.09	4.47	12 32 0.53	1.80
	Lacaille 5257 . .	29	24.6	26.9	28.1	38.5	39.7	40.9	42.4	43.5	54.1	55.3	57.6	36 41.05	0.16	4.47	12 36 36.42	1.59
	Rumker 4137 . .	30	3.4	5.5	6.7	16.3	17.4	18.5	19.7	20.8	30.6	31.7	33.8	42 18.58	− 0.11	4.47	12 42 14.00	1.77
	Polaris, S. P. . .	31	. .	41.0	43.0	34.0	59.0	. .	. .	. .	. .	. .	. .	48 14.25	+22 10.55	4.47	. . . .	57.31
	Lacaille 5382 . .	32	. .	8.4	9.7	20.7	21.7	23.1	24.5	25.6	36.5	37.7	. .	57 23.10	− 0.16	4.47	12 57 18.47	1.59
	O. Arg. S. 12662 .	33	52.2	54.6	55.7	6.7	7.8	9.1	10.5	11.7	22.6	23.7	26.1	1 9.15	0.16	4.47	13 1 4.52	1.60
	*−11° 14′ . . .	34	16.1	18.3	19.4	29.0	30.2	31.4	32.7	33.6	43.4	44.6	46.7	4 31.40	0.11	4.47	13 4 26.82	1.72
	Lalande 24615. .	35	52.8	55.2	56.6	8.7	9.9	11.5	12.9	14.1	25.8	27.2	29.9	9 11.33	0.00	4.47	13 9 6.86	1.46
	Weisse 169 . .	36	21.0	23.1	24.1	33.7	34.8	36.0	37.1	38.1	47.9	48.9	50.9	11 35.96	0.10	4.47	13 11 31.39	1.77
14 E.	*−14° 22′ . . .	37	45.4	47.4	48.6	58.5	59.7	1.0	2.1	3.1	12.9	14.1	16.3	35 0.83	0.11	4.71	8 34 56.01	2.42
	ε Hydræ, (Comp.) .	38	. .	. .	. .	52.7	53.9	55.1	56.4	57.3	. .	. .	. .	39 55.08	0.05	4.71	8 39 50.32	2.89
	ε Hydræ	39	40.2	42.2	43.4	. .	. .	. .	. .	. .	7.2	8.3	10.3	39 55.27	0.05	4.71	8 39 50.51	2.88
	Rumker 2702 . .	40	0.5	3.8	5.6	22.4	24.0	26.1	27.8	29.5	46.4	48.2	51.6	50 25.99	0.11	4.71	8 50 21.39	4.16
	O. Arg. N. 9484 .	41	. .	. .	. .	38.1	39.8	41.7	44.0	45.7	. .	. .	. .	51 41.86	0.10	4.71	8 51 37.25	4.09
	Lacaille 3741 . .	42	. .	18.0	19.4	31.0	32.4	33.8	35.4	36.6	48.3	49.7	. .	9 33.84	0.20	4.72	9 9 28.92	1.64
	Lacaille 3751 . .	43	. .	. .	. .	32.0	33.0	34.3	35.7	36.8	. .	. .	. .	10 34.36	0.16	4.72	9 10 29.48	1.88
	O. Arg. S. 9539 .	44	. .	. .	. .	10.9	12.2	13.5	14.9	16.0	. .	. .	. .	11 13.50	0.17	4.72	9 11 8.61	1.84
	*−28° 45′ . . .	45	51.3	53.5	54.6	5.6	6.9	8.2	9.4	10.8	21.9	22.9	25.2	15 8.21	0.16	4.72	9 15 3.33	1.85
	B. A. C. 3235 . .	46	59.7	2.1	3.5	15.2	16.4	17.8	19.3	20.4	32.0	33.4	36.0	22 17.80	0.20	4.72	9 22 12.88	1.64
	Lacaille 3848 . .	47	. .	. .	. .	50.6	51.9	53.4	54.9	56.1	7.6	9.0	11.6	22 59.39	6.22	4.72	9 22 48.45	1.63
	*−35° 19′ . . .	48	. .	. .	. .	25.4	26.7	29.3	47.3	50.0	51.4	53.1	54.5	26 42.21	31.54	4.73	9 26 5.94	1.58
	*+21° 49′ . . .	49	39.4	41.5	42.8	53.0	54.1	55.4	. .	. .	8.1	9.4	11.5	31 55.02	+ 0.40	4.73	9 31 50.69	2.87
	*−38° 57′ . . .	50	. .	. .	. .	8.9	10.2	13.0	31.9	34.6	36.2	37.9	39.6	34 26.54	− 33.11	− 4.73	9 33 48.70	+ 1.40

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 13, 10.4	− 4.46	− 0.003	+ 0.14	− 0.08

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Apr. 14 E.	ε Leonis	1	13.5	15.8	17.0	27.6	28.7	30.0	31.2	32.4	43.0	44.1	46.5	38 29.98	− 0.01	− 4.73	9 38 25.24	+ 2.87
	*−37° 10′ . . .	2	. .	. .	. .	23.5	25.0	27.6	46.1	48.5	50.2	52.0	53.3	40 40.78	32.30	4.73	9 40 3.75	1.46
	*−37° 14′ . . .	3	. .	. .	. .	31.9	33.2	35.8	54.4	56.8	58.6	0.5	1.7	40 49.11	32.30	4.73	9 40 12.08	1.46
	*+15° 0′ . . .	4	. .	. .	. .	48.0	49.1	51.0	6.8	8.8	10.2	11.6	12.6	47 2.26	− 26.51	4.73	9 46 31.02	2.66
	Weisse (2) 1003 .	5	. .	8.1	9.4	23.3	24.6	26.1	27.8	29.4	42.7	44.4	. .	48 26.20	+ 0.06	4.73	9 48 21.53	3.16
	*−35° 35′ . . .	†6	. .	. .	. .	2.7	3.9	5.4	6.6	7.9	. .	. .	. .	55 5.30	− 0.20	4.74	9 55 0.36	1.47
	Weisse 1243 . .	7	26.2	28.3	29.5	39.4	40.4	41.6	42.8	43.9	53.8	55.0	57.0	58 41.63	0.03	4.74	9 58 36.86	2.56
	14 Sextantis . . .	8	. .	. .	. .	. .	. .	. .	31.7	33.9	35.2	36.6	37.7	0 35.02	33.21	4.74	9 59 57.07	2.44
	Weisse 76 . . .	9	. .	. .	. .	. .	. .	. .	2.5	4.8	6.0	7.4	8.6	7 5.86	33.74	4.74	10 6 27.38	2.49
	*+12° 3′ . . .	10	28.0	30.0	31.2	41.2	42.5	43.8	45.0	46.0	56.0	57.0	58.7	6 43.58	0.04	4.74	10 6 38.80	2.49
	*−10° 5′ . . .	†11	. .	. .	. .	. .	. .	. .	16.9	19.1	20.3	21.5	22.8	18 20.12	33.58	4.75	10 17 41.79	2.07
	*−10° 5′ . . .	†12	. .	. .	. .	. .	. .	. .	27.1	29.5	30.6	32.0	33.3	18 30.50	33.58	4.75	10 17 52.17	2.07
	B. A. C. 3603 . .	13	16.0	18.1	19.1	29.0	30.1	31.2	32.3	33.4	43.0	44.3	46.4	24 31.17	0.09	4.75	10 24 26.33	2.10
	*− 4° 9′ . . .	14	. .	. .	. .	22.6	23.6	24.8	26.0	27.1	36.5	37.7	39.8	27 29.76	5.07	4.75	10 27 19.94	2.14
	*−29° 37′ . . .	15	. .	. .	. .	. .	. .	. .	46.2	48.6	50.0	51.8	53.4	29 50.00	− 38.11	4.75	10 29 7.14	1.58
	38 Leonis Minoris .	16	. .	. .	. .	40.4	41.6	43.0	44.6	46.0	. .	. .	. .	31 43.12	+ 0.03	4.75	10 31 38.40	2.65
	Weisse (2) 693 . .	17	44.0	46.6	47.9	59.9	1.2	2.7	4.2	5.3	17.4	18.8	21.6	35 2.69	0.03	4.75	10 34 57.97	2.60
	Weisse (2) 774 . .	18	. .	. .	. .	41.6	42.7	44.2	45.8	47.2	. .	. .	. .	38 44.30	0.03	4.75	10 38 39.58	2.56
	Weisse (2) 777 . .	19	. .	. .	. .	53.5	54.5	56.3	57.8	58.9	. .	. .	. .	38 56.20	+ 0.03	4.75	10 38 51.48	2.56
	Weisse 703 . .	20	21.0	22.9	24.0	33.6	34.7	36.0	37.2	38.2	47.8	48.9	51.0	40 35.94	− 0.05	4.75	10 40 31.14	2.25
	l Leonis	21	12.5	14.6	15.8	25.6	26.7	27.8	29.1	30.1	40.0	41.1	43.2	42 27.86	0.04	4.75	10 42 23.07	2.33
	*−0° 41′ . . .	22	26.1	28.2	29.4	39.0	40.1	41.3	42.4	43.4	53.3	54.2	56.3	48 41.25	0.07	4.75	10 48 36.43	2.11
	Lacaille 4535 . .	23	46.5	49.3	50.7	3.6	4.8	6.4	8.2	9.4	22.2	23.7	26.5	52 6.48	0.24	4.76	10 52 1.48	1.13
	Lacaille 4553 . .	24	. .	. .	. .	17.2	18.5	20.5	22.3	24.7	. .	. .	. .	54 20.64	0.25	4.76	10 54 15.63	1.09
	Lacaille 4566 . .	25	. .	. .	. .	. .	. .	. .	36.4	39.0	40.5	42.4	43.9	56 40.44	41.55	4.76	10 55 54.13	1.30
	Weisse 1075 . .	26	13.3	15.2	16.3	26.0	27.1	28.4	29.6	30.5	40.5	41.7	43.8	0 28.40	0.04	4.76	11 0 23.60	2.20
	Weisse 1090 . .	27	49.0	51.1	52.2	1.7	2.8	4.3	5.4	6.4	16.3	17.4	19.5	1 4.19	− 0.04	4.76	11 0 59.39	2.20
	Weisse (2) 74 . .	28	11.4	13.9	15.2	27.3	28.5	29.9	31.4	32.6	44.7	46.0	48.5	5 29.95	+ 0.03	4.76	11 5 25.22	2.34
	Weisse (2) 80 . .	29	21.4	23.9	25.0	37.3	38.4	40.0	41.5	42.7	54.7	56.0	58.7	5 39.96	+ 0.03	4.76	11 5 35.23	2.34
	*+12° 22′ . . .	30	59.6	1.7	2.9	12.8	13.9	14.9	16.1	17.2	26.9	28.0	30.3	9 14.94	− 0.03	4.76	11 9 10.15	2.17
	O. Arg. S. 11304 .	31	51.2	53.3	54.5	5.5	6.8	8.1	9.5	10.6	21.4	22.6	25.0	13 8.05	0.16	4.76	11 13 3.13	1.56
	Lacaille 4746 . .	32	9.2	11.7	13.3	25.4	26.8	28.2	29.6	30.9	43.0	44.3	46.9	20 28.12	0.21	4.76	11 20 23.15	1.27
	Lalande 21911 .	33	26.6	28.7	29.7	39.4	40.4	41.6	42.7	43.7	53.4	54.5	56.6	25 41.57	0.07	4.77	11 25 36.73	1.99
	Weisse (2) 526 .	34	47.6	49.8	50.8	1.4	2.5	3.8	5.1	6.3	16.4	17.6	19.8	29 3.74	0.02	4.77	11 28 58.95	2.12
	υ Leonis	35	. .	. .	. .	32.2	33.5	35.5	50.3	52.2	53.5	54.9	56.3	30 46.07	25.64	4.77	11 30 15.66	1.98
	Lacaille 4824 . .	36	. .	. .	. .	16.8	18.4	19.7	21.3	22.4	. .	. .	. .	32 19.72	0.22	4.77	11 32 14.73	1.24
	*−38° 35′ . . .	37	41.9	44.5	45.8	58.1	59.2	0.9	2.5	3.7	16.3	17.6	20.4	33 0.99	0.22	4.77	11 32 56.00	+ 1.23
15 Y.	λ Ursæ Minoris, S.P.	38	. .	. .	. .	. .	. .	. .	52.0	43.0	47.0	2.0	3.0	24 41.40	−29 12.80	4.58	. . . .	− 66.78
	*+19° 52′ . . .	39	24.8	27.0	28.3	38.4	39.6	40.7	42.1	43.2	53.4	54.6	56.7	34 40.80	+ 0.12	4.58	8 34 36.34	+ 3.23
	Lacaille 3485 . .	40	. .	. .	. .	10.4	11.7	14.3	32.7	35.8	37.5	39.0	40.6	38 27.75	− 32.04	4.58	8 37 51.13	1.80
	O. Arg. S. 8993 .	41	34.3	36.7	37.9	48.7	49.8	51.2	52.5	53.7	4.6	5.8	8.1	41 51.21	0.06	4.58	8 41 46.57	2.06
	*−35° 23′ . . .	42	0.9	3.7	5.0	16.9	18.0	19.6	20.9	22.3	34.1	35.5	38.0	45 19.54	0.10	4.58	8 45 14.86	1.77
	*−34° 58′ . . .	43	20.9	23.5	24.8	36.4	37.7	39.2	40.7	42.0	53.6	55.0	57.6	49 39.22	− 0.10	4.58	8 49 34.54	1.77
	κ Cancri	44	28.5	30.7	31.9	41.6	42.6	43.8	45.0	46.2	56.0	57.1	59.2	0 43.87	+ 0.08	4.58	9 0 39.37	2.86
	*−23° 43′ . . .	45	58.8	1.0	2.4	12.9	13.9	15.2	16.3	17.4	28.2	29.3	31.5	6 15.17	− 0.05	4.59	9 6 10.53	2.05
	Weisse (2) 198 . .	46	40.0	42.3	43.5	53.5	54.6	55.9	57.1	58.1	8.3	9.6	11.8	10 55.88	+ 0.11	4.59	9 10 51.40	2.95
	Lacaille 3780 . .	47	8.2	10.9	12.5	24.6	25.8	27.4	28.9	30.3	42.5	43.9	46.7	13 27.43	− 0.11	4.59	9 13 22.73	1.52
	*−38° 51′ . . .	48	. .	. .	. .	12.2	13.6	15.1	16.6	18.0	30.5	31.8	34.4	17 21.52	6.50	4.59	9 17 10.43	1.50
	*−38° 48′ . . .	49	. .	. .	. .	39.1	40.4	43.1	2.8	5.8	7.2	9.0	10.5	17 57.24	− 33.48	− 4.59	9 17 19.17	+ 1.49

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 14, 10.1	− 4.74	− 0.020	+ 0.16	− 0.07
16, 11.6	− 4.61	− 0.010	+ 0.21	+ 0.04

6. Very faint.
11. Faint.
12. Very faint.

April 15, 5h. Image west 0r.09. Clamp west.
Image east 0r.06. Clamp east.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 15 Y.	O. Arg. N. 9789	1	30.0	35.9	39.3	7.7	10.6	14.6	18.0	21.2	49.6	52.7	58.9	25 14.41	+ 0.70	− 4.59	9 25 10.52	+ 4.68
	ε Leonis	2	13.2	15.3	16.5	27.1	28.4	29.7	30.9	32.1	42.8	43.9	46.2	38 29.65	+ 0.14	4.59	9 38 25.20	2.88
	*−10° 56′	3	51.5	53.5	54.7	4.6	5.6	6.8	8.0	9.2	19.0	20.2	22.1	41 6.84	0.00	4.59	9 41 2.25	2.32
	Weisse 894.	4	. .	. .	. .	29.3	30.3	31.6	32.8	33.9	43.6	44.6	46.7	41 36.60	− 5.07	4.59	9 41 26.94	2.32
	Lacaille 4046	5	. .	. .	. .	38.2	39.5	41.8	59.5	2.4	3.8	5.3	6.7	46 54.65	30.38	4.59	9 46 19.68	1.68
	O. Arg. S. 10227	6	0.0	2.5	3.8	14.6	15.7	17.0	18.3	19.5	30.6	31.8	34.0	50 17.07	0.07	4.59	9 50 12.41	1.76
	Lacaille 4192	7	47.0	49.4	50.7	2.1	3.3	4.7	6.1	7.3	18.5	19.8	22.3	7 4.65	− 0.08	4.60	10 6 59.97	1.58
	Weisse 204	8	40.9	43.0	44.1	53.7	54.7	56.0	57.1	58.3	7.9	8.9	11.0	12 55.96	+ 0.03	4.60	10 12 51.39	2.22
	B. A. C. 3566	9	33.7	35.8	37.0	46.7	47.7	49.0	50.1	51.2	0.9	2.0	4.1	19 48.93	0.02	4.60	10 19 44.35	2.16
	Weisse 375.	10	5.8	8.0	9.1	18.8	19.9	21.1	22.2	23.4	33.2	34.3	36.4	22 21.11	+ 0.08	4.60	10 22 16.59	2.40
	Weisse 412.	11	. .	. .	. .	29.8	30.9	32.2	33.4	34.4	44.3	45.4	47.5	24 37.24	− 5.00	4.60	10 24 27.64	2.39
	*−4° 11′	12	. .	. .	. .	22.0	23.1	24.4	25.5	26.5	36.1	37.2	39.4	27 29.28	4.97	4.60	10 27 19.71	2.15
	*−29° 39′	13	. .	. .	. .	25.2	26.4	28.9	46.5	49.2	50.6	52.0	53.5	29 41.54	− 30.00	4.60	10 29 6.94	1.59
	Weisse 637.	14	15.2	17.3	18.4	28.0	29.2	30.4	31.6	32.7	42.3	43.3	45.4	36 30.35	+ 0.03	4.60	10 36 25.78	2.12
	*+10° 28′	15	1.9	3.9	5.2	14.9	15.9	17.2	18.4	19.4	29.2	30.3	32.4	42 17.15	+ 0.08	4.60	10 42 12.63	2.29
	*−29° 46′	16	. .	. .	. .	12.3	13.6	16.0	33.6	36.4	37.7	39.3	40.6	43 28.69	− 30.03	4.60	10 42 54.06	1.56
	O. Arg. S. 10912	17	. .	. .	. .	. .	. .	. .	54.1	57.0	58.4	59.8	1.2	43 58.10	38.87	4.60	10 43 14.63	1.56
	O. Arg. S. 10941	18	. .	. .	. .	37.5	38.6	41.0	58.5	1.4	2.8	4.2	5.6	46 53.70	− 29.94	4.60	10 46 19.16	1.56
	Carrington 1637	19	. .	. .	. .	39.0	45.3	53.4	2.4	9.2	. .	. .	. .	53 53.86	+ 1.73	4.60	10 53 50.99	1.91
	O. Arg. S. 11115	20	44.1	46.4	47.8	58.9	0.1	1.4	2.8	4.0	15.0	16.1	18.6	59 1.38	− 0.07	4.60	10 58 56.71	1.54
	*−25° 11′	21	42.9	45.3	46.5	57.1	58.2	59.6	0.9	2.0	12.6	13.8	16.0	4 59.54	0.05	4.60	11 4 54.89	1.64
	*−37° 43′	22	48.6	51.1	52.6	5.0	6.1	7.5	8.9	10.1	22.6	24.0	26.3	9 7.53	0.11	4.61	11 9 2.81	1.27
	Lacaille 4669	23	. .	. .	. .	. .	. .	. .	4.0	7.1	8.5	10.0	11.7	10 8.26	42.54	4.61	11 9 21.11	1.28
	*−37° 36′	24	. .	. .	. .	41.6	42.7	44.4	45.9	47.3	59.5	0.7	3.4	10 50.69	6.38	4.61	11 10 39.70	1.28
	Lacaille 4710	25	10.5	12.8	14.3	26.0	27.2	28.6	30.1	31.5	43.2	44.5	47.0	14 28.70	− 0.02	4.61	11 14 24.07	1.83
	τ Leonis	26	2.5	4.7	5.8	15.3	16.4	17.6	18.8	19.8	29.4	30.5	32.7	21 17.59	+ 0.05	4.61	11 21 13.03	2.04
	Weisse 349.	27	. .	. .	. .	. .	. .	. .	48.7	51.2	52.4	53.7	54.9	21 52.18	− 33.67	4.61	11 21 13.90	2.05
	θ Crateris	28	52.8	54.9	56.1	5.8	6.9	8.1	9.3	10.3	20.0	21.1	23.2	30 8.05	0.00	4.61	11 30 3.44	1.88
	*+20° 50′	29	14.5	16.8	18.0	28.4	29.4	30.6	31.8	32.8	43.4	44.5	46.8	33 30.64	+ 0.12	4.61	11 33 26.15	2.11
	Weisse 646.	30	47.7	49.8	50.9	0.5	1.6	2.8	4.0	5.1	14.7	15.8	17.9	38 2.80	0.01	4.61	11 37 58.20	1.88
	Weisse 674.	31	19.3	21.3	22.4	32.1	33.1	34.4	35.6	36.7	46.3	47.4	49.4	39 34.36	+ 0.01	4.61	11 39 29.76	1.88
	B. A. C. 3994	32	57.4	59.9	1.2	11.9	12.9	14.3	15.7	16.8	27.5	28.7	31.1	42 14.31	− 0.06	4.61	11 42 9.64	1.58
	*−5° 37′	33	24.6	26.8	27.9	37.7	38.8	39.9	41.1	42.1	51.9	52.9	55.1	45 39.89	+ 0.02	4.61	11 45 35.30	1.88
	B. A. C. 4043	34	11.9	14.1	15.2	24.8	25.9	27.0	28.2	29.2	38.8	39.9	42.0	52.27.00	0.05	4.61	11 52 22.44	2.01
	B. A. C. 4055	35	18.4	20.5	21.7	31.2	32.3	33.5	34.7	35.8	45.4	46.5	48.6	54 33.51	+ 0.06	4.61	11 54 28.96	1.94
	O. Arg. S. 11920	36	43.7	45.9	47.0	57.6	58.6	59.9	1.1	2.3	13.0	14.1	16.2	0 59.95	− 0.04	4.61	12 0 55.30	1.62
	Weisse 16	37	. .	. .	. .	8.0	8.9	10.1	11.3	12.4	22.1	23.2	25.3	3 15.16	− 4.97	4.61	12 3 5.58	1.93
	12 Virginis	38	36.0	38.2	39.2	49.0	50.1	51.3	52.5	53.6	3.5	4.5	6.6	6 51.32	+ 0.08	4.62	12 6 46.78	1.92
	γ Corvi	39	54.5	56.7	57.9	8.0	9.1	10.3	11.5	12.6	22.7	23.8	26.0	9 10.28	− 0.02	4.62	12 9 5.64	1.91
	8 Comæ	40	31.3	33.5	34.7	45.2	46.3	47.7	49.0	50.1	0.6	1.7	4.0	12 47.65	+ 0.14	4.62	12 12 43.17	1.90
	O. Arg. S. 12134	41	7.6	9.9	11.2	21.5	22.5	23.9	25.2	26.4	36.9	38.1	40.3	17 23.95	− 0.05	4.62	12 17 19.28	1.62
	Lalande 23270.	42	54.0	56.2	57.4	7.0	8.1	9.3	10.5	11.5	21.1	22.2	24.5	20 9.25	+ 0.02	4.62	12 20 4.65	1.82
	Lacaille 5188	43	2.0	4.5	5.8	17.0	18.2	19.6	20.8	22.0	33.3	34.8	37.1	24 19.55	− 0.08	4.62	12 24 14.85	1.49
	β Corvi	44	20.4	22.7	23.9	34.3	35.5	36.8	38.0	39.1	49.6	50.7	53.0	27 36.73	0.04	4.62	12 27 32.07	1.72
	B. A. C. 4262	45	34.5	37.3	38.7	51.1	52.4	54.0	55.7	56.9	9.4	10.7	13.3	32 54.00	0.12	4.62	12 32 49.26	1.30
	*−34° 42′	46	24.5	27.0	28.3	40.0	41.2	42.7	44.2	45.4	57.2	58.4	0.8	36 42.70	0.10	4.62	12 36 37.98	1.42
	Lacaille 5281	47	46.8	49.8	51.6	4.7	5.9	. .	9.3	10.7	24.2	25.6	28.5	41 7.71	0.15	4.62	12 41 2.94	1.18
	B. A. C. 4311	48	. .	. .	. .	59.8	1.0	2.5	4.0	5.6	17.7	19.0	21.7	44 8.91	6.11	4.62	12 43 58.18	1.58
	Polaris, S. P.	49	25.0	17.0	10.0	47.0	. .	. .	. .	. .	. .	. .	. .	47 54.75	+22 30.55	4.62	. . . .	57.05
	O. Arg. S. 12567	50	. .	. .	. .	8.4	9.5	11.7	28.1	30.7	31.9	33.3	34.8	53 23.55	27.98	4.62	12 52 50.95	1.66
	O. Arg. S. 12626	51	54.1	56.2	57.3	7.3	8.2	9.6	10.7	11.9	21.7	22.8	25.0	58 9.53	− 0.01	− 4.62	12 58 4.90	+ 1.72

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
	s.	s.	s.	s.
1869. h. Apr. 15, 11.6	− 4.61	− 0.010	+ 0.21	+ 0.04

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Apr. 15 Y.	Lacaille 5407	1	53.1	55.6	57.0	8.7	10.0	11.6	13.1	14.3	26.1	27.5	30.0	1 11.55	− 0.10	− 4.62	13 1 6.83	+ 1.46
	*−36° 42′	2	10.1	12.7	14.2	26.0	27.3	28.8	30.3	31.6	43.7	45.0	47.3	4 28.82	0.10	4.62	13 4 24.10	1.47
	Lacaille 5457	3	36.1	38.7	40.1	52.0	53.3	54.7	56.1	57.3	9.2	10.5	13.1	7 54.65	− 0.10	4.63	13 7 49.92	1.48
	Weisse 145	4	4.5	6.6	7.8	17.5	18.5	19.6	20.9	21.9	31.6	32.7	34.8	10 19.67	+ 0.05	4.63	13 10 15.09	1.76
	O. Arg. S. 12811	5	46.8	49.1	50.3	0.7	1.7	3.0	4.3	5.5	15.7	16.9	19.3	14 3.03	− 0.04	4.63	13 13 58.36	1.68
	α Virginis	6	8.3	10.6	11.7	21.4	22.5	23.7	24.9	26.0	35.8	37.0	38.9	18 23.71	0.00	4.63	13 18 19.08	1.75
	Weisse 331	7	27.3	29.4	30.6	40.2	41.2	42.5	43.7	44.7	54.5	55.6	57.7	21 42.49	0.08	4.63	13 21 37.94	1.72
	Lalande 24977	8	43.4	45.7	46.9	57.5	58.6	59.9	1.3	2.4	13.1	14.3	16.5	23 59.96	− 0.05	4.63	13 23 55.28	1.67
	Weisse 426	9	24.8	26.9	28.0	37.7	38.8	39.9	41.1	42.1	31.9	33.0	35.0	26 39.93	+ 0.01	4.63	15 26 35.31	1.76
	*+ 7° 13′	10	4.9	7.0	8.1	17.8	18.7	19.9	21.1	22.2	32.0	33.1	35.1	29 19.99	+ 0.07	4.63	13 29 15.43	1.72
	Lacaille 5625	11	54.5	57.3	58.5	10.9	12.2	13.9	15.2	16.7	29.3	30.6	33.4	32 13.86	− 0.12	4.63	13 32 9.11	1.50
	Lacaille 5655	12	25.7	28.1	29.4	40.4	41.6	42.9	44.4	45.5	56.5	57.7	0.2	35 42.95	− 0.08	4.63	13 35 38.24	1.65
16 E.	B. A. C. 3182, Comp.	13	16.2	19.3	21.0	. .	. .	. .	. .	. .	58.0	59.7	2.9	13 39.52	+ 0.36	4.58	9 13 35.30	3.75
	B. A. C. 3182	14	. .	. .	. .	36.4	37.9	39.9	41.7	43.5	. .	. .	. .	13 39.88	+ 0.36	4.58	9 13 35.66	3.75
	*−34° 41′	15	. .	. .	. .	. .	. .	. .	21.0	23.9	25.4	27.0	28.4	16 25.14	− 41.08	4.58	9 15 39.48	1.68
	α Hydræ	16	59.0	1.1	2.1	12.0	13.1	14.1	15.4	16.4	36.1	37.2	39.2	21 14.15	+ 0.01	4.58	. . . .	1.39
	ψ Argus	17	18.4	21.3	22.7	35.4	36.7	38.1	39.6	41.0	53.6	55.0	57.6	25 38.13	− 0.16	4.58	9 25 33.39	1.44
	O. Arg. S. 9956	18	35.4	38.0	39.1	49.4	50.4	51.6	53.0	54.1	. .	. .	. .	32 46.38	+ 5.37	4.58	9 32 47.17	1.95
	*−24° 34′	19	. .	. .	. .	13.1	14.2	15.6	16.9	18.4	28.8	30.0	32.1	41 21.14	− 5.55	4.58	9 41 11.01	1.90
	21 Leonis	20	. .	. .	. .	49.0	50.1	51.3	52.5	53.6	3.5	4.6	6.9	43 56.44	5.01	4.58	9 43 46.85	2.66
	*−39° 20′	21	. .	. .	. .	25.6	26.9	28.4	30.0	31.4	. .	. .	. .	47 28.46	− 0.16	4.58	9 47 23.72	1.38
	*+13° 33′	22	25.2	27.3	28.4	38.5	39.5	40.6	41.8	43.0	52.8	53.9	56.0	56 40.64	+ 0.10	4.58	9 56 36.16	2.60
	Weisse 680	23	. .	. .	. .	41.6	42.6	43.8	45.0	46.1	. .	. .	. .	39 43.82	0.03	4.57	11 39 39.28	1.94
	β Leonis	24	12.5	14.7	15.8	25.8	26.9	28.1	29.3	30.4	40.4	41.5	43.5	42 28.08	0.11	4.57	. . . .	2.02
	B. A. C. 4021	25	17.3	19.5	20.6	30.4	31.4	32.5	33.5	34.7	44.4	45.5	47.6	47 32.49	+ 0.06	4.57	11 47 27.98	2.39
	*−33° 18′	†26	. .	. .	. .	48.9	50.0	51.1	52.3	53.5	. .	. .	. .	48 51.16	− 0.12	4.57	11 48 46.47	1.41
	O. Arg. S. 11827	27	37.5	39.8	40.9	. .	. .	. .	. .	. .	6.4	7.5	9.9	53 53.67	0.06	4.57	11 53 49.04	1.67
	O. Arg. S. 11828	28	50.4	52.5	53.8	. .	. .	. .	. .	. .	19.1	20.2	22.7	54 6.45	0.06	4.57	11 54 1.82	1.67
	*−30° 13′	29	16.2	18.5	19.9	30.7	31.8	33.1	34.4	35.7	47.3	48.4	50.7	59 33.34	− 0.10	4.57	11 59 28.67	1.49
	Weisse 16	30	25.0	27.0	28.1	7.9	9.0	10.1	11.3	12.4	22.0	23.2	25.3	3 10.12	+ 0.08	4.57	12 3 5.63	1.94
	*+23° 54′	31	. .	52.4	53.6	4.0	5.0	6.2	7.4	8.6	19.4	20.5	. .	12 6.34	0.15	4.57	12 12 1.92	1.90
	Radcliffe 2860	32	. .	. .	. .	40.0	42.6	45.5	48.2	50.9	. .	. .	. .	18 45.44	+ 0.62	4.57	12 18 41.49	0.92
	B. A. C. 4198	33	. .	. .	. .	5.0	6.1	7.4	8.8	9.9	19.6	20.9	23.0	21 12.59	− 5.21	4.57	12 21 2.81	1.72
	O. Arg. S. 12232	34	44.0	46.1	47.5	58.7	59.9	1.3	2.6	3.7	4.6	5.9	8.2	26 1.14	0.10	4.57	12 25 56.47	1.52
	Lacaille 5214	35	. .	. .	. .	2.3	3.6	5.1	6.6	7.9	20.5	21.7	24.4	29 11.51	6.57	4.57	12 29 0.37	1.30
	B. A. C. 4262	36	34.7	37.4	38.7	51.3	52.6	53.9	55.6	56.9	9.3	10.8	13.4	32 54.05	0.16	4.57	12 32 49.32	1.30
	Lacaille 5257	37	24.4	26.5	28.0	38.5	39.7	41.0	42.3	43.4	54.2	55.4	57.6	36 41.00	0.08	4.57	12 36 36.35	1.69
	*+14° 28′	38	46.0	48.5	49.6	59.7	0.7	1.8	3.0	4.1	14.1	15.3	17.3	40 1.83	0.10	4.57	12 39 57.36	1.81
	*−38° 33′	39	21.6	24.4	25.6	38.0	39.1	40.7	42.3	43.5	6.0	7.1	9.8	45 40.74	0.15	4.56	12 45 36.03	1.35
	*−38° 44′	40	. .	. .	. .	32.5	33.7	36.6	56.6	59.0	0.7	2.4	4.0	47 50.69	33.49	4.56	12 47 12.64	1.33
	*−38° 44′	41	16.7	19.1	20.5	. .	. .	. .	. .	. .	51.3	52.9	55.3	47 35.97	0.15	4.56	12 47 31.26	1.33
	*+12° 50′	42	. .	. .	. .	0.9	2.0	3.1	4.2	5.2	15.2	16.4	18.4	1 8.18	5.01	4.56	13 0 58.61	1.75
	*+12° 50′	43	. .	. .	. .	6.3	7.4	8.6	9.7	10.8	20.7	21.8	23.9	1 13.65	− 5.01	4.56	13 1 4.08	1.75
	θ Virginis	44	1.0	2.9	4.2	13.9	14.9	16.0	17.1	18.2	28.0	29.1	31.1	3 16.04	+ 0.02	4.56	. . . .	1.76
	Weisse 44	45	35.5	37.7	38.9	48.7	49.8	50.9	52.1	53.1	3.1	4.3	6.3	4 50.95	+ 0.09	4.56	13 4 46.48	1.74
	Polaris, S. P.	46	. .	. .	. .	4.5	49.5	39.0	28.5	7.5	. .	. .	. .	10 37.80	− 11.95	4.56	. . . .	56.57
17 Y.	ο Ursæ Majoris	47	. .	58.7	1.0	20.9	23.0	25.5	28.0	30.2	50.2	52.3	. .	19 25.53	+ 0.53	4.37	8 19 21.69	5.14
	υ³ Cancri	48	33.5	35.7	37.0	47.4	48.6	50.0	51.2	52.5	3.0	4.1	6.4	23 49.95	0.16	4.37	8 23 45.74	3.45
	38 Cancri	49	59.3	1.6	2.9	13.0	14.2	15.5	16.7	17.8	28.1	29.2	31.4	32 15.43	+ 0.13	− 4.37	8 32 11.19	+ 3.28

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 16, 11.4	− 4.57	+ 0.004	+ 0.25	+ 0.04

26. Very faint.

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Corrections. Inst.	Corrections. Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 17 Y.	γ Cancri	1	30.4	32.6	33.8	44.1	45.3	46.6	47.9	49.0	59.4	0.6	2.8	35 46.59	+ 0.14	− 4.37	8 35 42.36	+ 3.30
	ε Hydræ, (Comp.)	2	. .	. .	. .	. .	. .	. .	25.2	27.7	28.8	30.1	31.4	40 28.64	− 33.83	4.38	8 39 50.43	2.94
	ε Hydræ	3	. .	. .	. .	52.6	53.7	54.9	56.0	57.1	6.8	7.9	9.9	39 59.86	− 4.94	4.38	8 39 50.54	2.93
	ρ Ursæ Majoris	4	5.4	10.9	14.0	40.0	42.4	45.8	48.9	51.7	17.8	20.8	26.1	50 45.80	+ 0.73	4.38	8 50 42.15	5.42
	κ Cancri	5	28.3	30.4	31.5	41.4	42.4	43.6	44.8	45.9	55.7	56.8	59.0	0 43.62	0.09	4.38	9 0 39.33	2.90
	*+19° 57′	6	48.2	50.4	51.5	1.8	2.9	4.2	5.5	6.5	. .	. .	. .	13 58.88	+ 5.42	4.38	9 13 59.92	3.00
	27 Hydræ	7	. .	. .	. .	. .	. .	. .	40.7	43.1	44.4	45.7	47.0	14 44 18	− 34.00	4.38	9 14 5.80	2.41
	*−36° 7′	8	5.8	8.2	9.7	21.5	22.7	24.3	25.8	27.0	39.0	40.3	42.9	25 24.29	− 0.14	4.38	9 25 19.77	1.61
	O. Arg. N. 10356	9	12.5	16.3	18.0	34.9	36.7	38.7	40.8	42.6	59.1	1.0	4.7	47 38.66	+ 0.43	4.39	9 47 34.70	3.54
	Weisse (2) 1003	10	. .	. .	. .	42.6	44.0	46.8	8.3	11.6	13.5	15.2	17.0	49 2.38	− 36.19	4.39	9 48 21.80	3.22
	*+21° 13′	11	35.2	37.5	38.7	48.9	49.9	51.3	52.6	53.7	4.1	5.2	7.4	58 51.32	+ 0.14	4.39	9 58 47.07	2.72
	η Leonis	12	0.5	2.8	3.9	13.9	15.0	16.3	17.5	18.6	28.7	29.8	31.0	0 16 26	+ 0.12	4.39	10 0 11.99	2.65
	Weisse (2) 1321	13	. .	. .	. .	. .	. .	. .	58.2	0.8	2.0	3.5	4.8	3 1 86	− 35.91	4.39	10 2 21.56	2.69
	*−37° 25′	14	17.5	20.1	21.5	33.7	34.8	36.4	37.9	39.2	51.5	52.7	55.5	6 36 44	0.14	4.39	10 6 31.91	1.42
	Weisse 115	15	. .	. .	. .	26.7	27.8	29.9	46.5	49.0	50.2	51.6	52.8	8 41 81	− 26.54	4.39	10 8 10.88	2.52
	*+2° 8′±	16	. .	. .	. .	29.6	30.7	31.9	33.1	34.2	. .	. .	. .	17 31.90	+ 0.05	4.40	10 17 27.55	2.32
	*+2° 6′±	17	. .	. .	. .	42.4	43.5	44.8	46.0	46.9	. .	. .	. .	17 44.72	0.05	4.40	10 17 40.37	2.32
	O. Arg. N. 10911	18	23.9	26.9	28.5	42.1	43.5	45.2	46.9	48.4	1.9	3.4	6.3	24 45.18	+ 0.31	4.40	10 24 41.09	2.83
	*−37° 26′	19	28.1	30.7	32.0	44.1	45.3	46.9	48.4	49.5	2.0	3.4	5.8	28 46.93	− 0.14	4.40	10 28 42.39	1.37
	φ³ Hydræ	20	1.7	3.9	5.0	15.0	16.1	17.3	18.6	19.7	29.7	30.9	33.0	32 17.35	− 0.03	4.40	10 32 12.92	1.94
	Weisse 600	21	28.5	30.7	32.0	41.8	42.9	44.1	45.3	46.5	56.4	57.4	59.6	34 44.11	+ 0.11	4.40	10 34 39.82	2.40
	Lacaille 4419	22	59.8	2.1	3.3	14.7	15.8	17.3	18.6	19.9	31.2	32.4	34.9	37 17.27	0.11	4.40	10 37 12.76	1.56
	*+10° 28′	23	1.6	3.7	4.8	14.7	15.8	17.0	18.2	19.3	29.1	30.1	32.3	42 16.96	+ 0.08	4.40	10 42 12.64	2.31
	*−29° 17′	24	13.5	16.0	17.3	28.3	29.4	30.8	32.2	33.4	44.4	45.7	48.0	43 30.82	− 0.10	4.40	10 43 26.32	1.60
	O. Arg. S. 10936	25	. .	. .	. .	2.8	3.9	5.4	6.6	7.8	19.0	20.1	22.4	46 11.00	5.81	4.40	10 46 0.79	1.59
	O. Arg. S. 10941	26	. .	. .	. .	37.5	38.6	41.0	58.4	1.1	2.6	4.0	5.4	46 53.58	29.97	4.40	10 46 19.21	1.59
	*−29° 37′	27	. .	. .	. .	24.7	27.6	28.9	30.4	31.7	. .	. .	. .	47 28.66	38.81	4.40	10 46 45.45	1.58
	*−34° 11′	28	42.6	45.1	46.5	58.3	59.4	0.8	2.3	3.5	15.2	16.5	18.8	53 0.82	− 0.13	4.40	10 52 56.29	1.44
	*+ 9° 20′	29	21.2	23.4	24.4	34.2	35.3	36.6	37.8	38.8	48.5	49.6	51.6	55 36.49	+ 0.08	4.40	10 55 32.17	2.25
	O. Arg. S. 11114	30	13.8	16.2	17.5	28.7	29.8	31.1	32.5	33.7	44.8	46.1	48.5	59 31.15	− 0.10	4.40	10 59 26.65	1.56
	Weisse (2) 74	31	10.5	13.2	14.7	26.6	27.8	29.4	30.8	32.1	44.1	45.4	48.0	5 29.33	+ 0.17	4.41	11 5 25.09	2.47
	Weisse (2) 80	32	54.9	56.4	58.1	59.7	2.3	. .	17.0	20.0	21.5	23.1	24.7	5 39.77	− 0.26	4.41	11 5 35.10	2.47
	δ Crateris	33	37.6	39.8	41.0	50.9	51.9	53.1	54.4	55.5	5.4	6.5	8.6	12 53.15	− 0.02	4.41	11 12 48.72	1.85
	Weisse (2) 312	34	30.2	32.6	33.9	45.3	46.6	48.0	49.4	50.5	1.8	3.0	5.6	17 47.90	+ 0.20	4.41	11 17 43.69	2.26
	*+31° 46′.5	35	. .	. .	. .	. .	. .	. .	31.2	34.0	35.4	37.0	38.6	18 35.24	− 39.39	4.41	11 17 51.44	2.26
	Weisse 365	36	32.4	34.5	35.7	45.2	46.3	47.6	48.7	49.8	59.4	0.4	2.5	21 47.50	+ 0.06	4.41	11 21 43.15	2.06
	*−29° 33′	37	. .	24.5	25.7	37.0	38.1	39.5	40.7	42.0	53.2	54.4	. .	24 39.46	− 0.10	4.41	11 24 34.95	1.53
	*+ 2° 4′	38	38.7	40.7	41.8	51.5	52.5	53.7	54.9	56.0	5.5	6.7	8.7	26 53.70	+ 0.05	4.41	11 26 49.34	2.03
	Weisse 495	39	10.1	12.2	13.4	23.0	24.1	25.3	26.6	27.6	37.5	38.5	40.6	29 25.35	+ 0.07	4.41	11 29 21.01	2.07
	*−38° 32′	40	59.9	2.5	3.9	16.3	17.6	19.1	20.7	22.1	34.4	35.8	38.5	32 19.16	− 0.15	4.41	11 32 14.60	1.26
	Weisse 605	41	. .	. .	. .	28.7	29.7	30.7	31.9	33.1	42.7	43.9	46.0	35 35.84	− 4.93	4.41	11 35 26.50	1.99
	Weisse 673	42	17.4	19.5	20.7	30.3	31.4	32.5	33.6	34.8	44.4	45.6	47.7	39 32.54	+ 0.02	4.41	11 39 28.15	1.91
	B. A. C. 3992	43	44.0	46.2	47.4	57.3	58.3	59.5	0.7	1.8	11.9	13.0	15.2	41 59.57	− 0.11	4.41	11 41 55.27	2.05
	B. A. C. 4015	44	5.9	. .	9.7	21.0	22.1	23.7	25.0	26.1	38.1	. .	41.6	46 23.69	− 0.12	4.42	11 46 19.15	1.42
	*+11° 5′	45	48.4	50.5	51.7	1.5	2.6	3.8	4.9	6.0	16.0	17.1	19.0	49 3.77	+ 0.09	4.42	11 48 59.44	2.00
	Lalande 22565	46	50.4	52.9	54.3	6.0	7.2	8.7	10.1	11.5	23.1	24.3	27.0	53 8.68	0.22	4.42	11 53 4.48	1.99
	Weisse 926	47	. .	23.3	24.5	34.3	35.4	36.6	37.9	38.9	48.8	49.9	. .	54 36.62	+ 0.09	4.42	11 54 32.29	1.99
	*−30° 40′	48	40.4	42.8	44.2	55.3	56.5	58.0	59.3	0.4	11.7	13.0	15.4	0 57.91	− 0.10	4.42	12 0 53.39	1.47
	B. A. C. 4098	49	33.8	36.5	37.9	50.0	51.2	52.7	54.3	55.6	7.6	9.0	11.7	3 53.75	0.14	4.42	12 3 49.19	1.32
	Lacaille 5063	50	13.9	16.4	17.6	29.3	30.5	31.9	33.2	34.4	46.1	47.5	49.9	6 31.88	− 0.12	− 4.42	12 6 27.34	+ 1.42

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 17, 10.6	− 4.40	− 0.013	+ 0.25	+ 0.04

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Corrections: Inst.	Corrections: Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 17 Y.	Weisse 177 . .	1	21.4	23.6	24.7	34.2	35.2	36.4	37.6	38.8	. .	. .	. .	12 31.49	+ 5.01	− 4.42	12 12 32.08	+ 2.87
	Weisse 193 . .	2	. .	. .	. .	18.2	19.2	20.4	21.7	22.7	. .	. .	. .	13 20.44	+ 0.07	4.42	12 13 16.09	1.89
	*+ 6° 27′ . . .	3	. .	. .	. .	34.2	35.2	36.5	37.6	38.6	48.2	49.3	51.5	13 41.39	− 4.94	4.42	12 13 32.03	1.89
	Lacaille 5134 . .	†4	4.8	7.6	9.0	21.2	22.4	24.0	25.3	26.7	39.1	40.4	43.1	17 23.96	0.15	4.42	12 17 19.39	1.31
	Weisse 311 . .	5	. .	. .	. .	18.8	19.8	21.0	22.2	23.3	33.3	34.4	36.5	20 26.16	− 5.03	4.42	12 20 16.71	1.88
	*+5° 27′ . . .	6	30.7	32.8	34.0	43.6	44.6	45.9	47.1	48.0	57.7	58.9	0.8	24 45.83	+ 0.06	4.42	12 24 41.47	1.86
	O. Arg. S. 12243 .	7	45.2	47.5	48.6	59.2	0.3	1.5	2.8	3.9	4.5	5.6	7.8	27 1.54	− 0.06	4.42	12 26 57.06	1.63
	*−33° 1′ . . .	8	. .	. .	. .	12.9	14.2	15.7	17.1	18.5	29.9	31.3	33.7	29 21.66	− 6.05	4.42	12 29 11.19	1.45
	*+13° 29′ . .	9	2.9	5.0	6.2	16.1	17.1	18.3	19.5	20.6	30.6	31.7	33.9	32 18.35	+ 0.10	4.43	12 32 14.02	1.84
	Weisse 583 . .	10	32.9	35.0	36.2	45.6	46.7	48.0	49.1	50.1	59.7	0.8	2.9	35 47.91	0.05	4.43	12 35 43.53	1.82
	B. A. C. 4282 . .	11	0.2	3.0	4.7	18.2	19.7	21.5	23.1	24.6	38.0	39.4	42.5	38 21.35	0.31	4.43	12 38 17.23	1.50
	*+18° 27′ . . .	12	10.3	12.5	13.7	23.8	24.9	26.2	27.4	28.5	38.7	39.8	42.1	42 26.17	0.12	4.43	12 42 21.86	1.79
	Lacaille 5301 . .	13	29.4	31.8	33.0	44.2	45.4	46.8	48.2	49.4	. .	. .	. .	44 41.02	5.66	4.43	12 44 42.25	1.53
	Lacaille 5302 . .	14	. .	. .	. .	6.2	7.4	10.0	27.6	30.3	31.6	33.1	34.7	45 22.61	30.28	4.43	12 44 47.90	1.52
	Weisse 820 . .	15	47.7	50.0	51.1	0.6	1.7	2.8	4.0	5.1	14.8	15.8	17.8	49 2.85	+ 0.03	4.43	12 48 58.45	1.78
	*−14° 57′ . . .	16	. .	8.9	10.0	20.1	21.2	22.5	23.7	24.8	34.9	36.0	. .	57 22.46	− 0.02	4.43	12 57 18.01	1.72
	*+12° 47′ . . .	17	59.1	1.4	2.5	12.3	13.5	14.6	15.9	16.9	. .	. .	. .	1 9.52	+ 5.20	4.43	13 1 10.29	1.75
	Weisse 1047 . .	18	. .	. .	. .	36.4	37.5	38.8	40.1	41.1	50.9	52.0	54.2	1 43.88	− 5.01	4.43	13 1 34.44	1.75
	Weisse 1054 . .	19	. .	. .	. .	3.2	4.4	6.5	22.0	24.5	25.8	27.2	28.4	2 17.75	26.79	4.43	13 1 46.53	1.74
	Weisse 44 . . .	20	. .	. .	. .	48.6	49.6	50.9	52.1	53.2	3.0	4.1	6.1	4 55.95	− 5.01	4.43	13 4 46.51	1.74
	Lalande 24615 .	21	52.5	55.1	56.5	8.5	9.7	11.2	12.7	13.9	25.7	27.2	29.7	9 11.15	+ 0.23	4.43	13 9 6.95	1.46
	Polaris, S. P. . .	22	. .	. .	. .	. .	. .	36.0	27.5	8.5	. .	. .	. .	11 24.00	− 58.26	4.43	. . . .	55.87
	Lacaille 5503 . .	23	. .	16.3	17.6	29.3	30.5	32.0	33.3	34.8	46.6	48.0	. .	14 32.04	0.13	4.43	13 14 27.48	1.50
	*−34° 59′ . . .	24	17.7	20.1	21.5	33.3	34.6	36.1	37.5	38.7	50.4	51.8	54.4	20 36.01	− 0.13	4.44	13 20 31.44	1.52
	Weisse (2) 437 .	25	57.7	0.2	1.6	13.8	15.0	16.6	18.1	19.3	31.4	32.7	35.3	23 16.52	+ 0.24	4.44	13 23 12.32	1.36
	75 Virginis . . .	26	. .	. .	. .	. .	. .	. .	28.9	31.6	32.8	33.1	34.4	26 32.16	− 34.80	4.44	13 25 52.92	1.73
	ζ Virginis . . .	27	51.9	53.9	55.1	4.7	5.6	6.9	8.1	9.1	18.8	19.9	22.0	28 6.91	+ 0.04	4.44	13 28 2.51	1.73
	Weisse 501 . .	28	25.4	27.4	28.6	38.3	39.4	40.5	41.6	42.6	52.4	53.4	55.5	30 40.46	+ 0.02	4.44	13 30 36.04	1.83
	Lacaille 5655 . .	29	25.7	28.0	29.3	40.4	41.5	42.9	44.3	45.4	56.6	57.8	0.1	35 42.91	− 0.10	4.44	13 35 38.37	1.64
	*−35° 54′ . . .	30	. .	. .	. .	41.8	43.0	44.5	46.0	47.4	59.2	0.5	3.2	36 50.70	6.28	4.44	13 36 39.98	1.56
	Lacaille 5682 . .	31	10.9	13.7	14.8	26.7	28.0	29.5	30.9	32.1	44.1	45.3	47.8	41 29.44	0.13	4.44	13 41 24.87	1.59
	O. Arg. S. 13177 .	32	10.3	12.8	14.0	24.8	25.9	27.4	28.6	29.7	40.8	41.9	44.1	43 27.30	0.09	4.44	13 43 22.77	1.68
	O. Arg. S. 13182 .	33	. .	. .	. .	54.3	55.4	57.7	15.0	17.8	19.2	20.6	. .	44 8.57	− 27.76	4.44	13 43 36.37	1.68
	Weisse 797 . .	34	. .	. .	. .	33.2	34.3	35.5	36.7	37.8	. .	. .	. .	47 35.50	+ 0.08	4.44	13 47 31.14	1.66
	Weisse 798 . .	35	. .	. .	. .	45.0	46.1	47.4	48.5	49.5	59.2	0.5	2.7	47 52.36	− 4.99	4.44	13 47 42.93	1.66
21 E.	ε Leonis	36	. .	. .	. .	25.4	26.5	27.9	29.3	30.4	41.0	42.1	44.4	38 33.38	5.28	3.02	9 38 25.08	2.98
	Lacaille 4021 . .	37	42.4	44.9	46.3	57.8	59.0	0.3	1.7	2.8	14.4	15.6	18.2	42 0.31	0.13	3.02	9 41 57.16	1.74
	4 Sextantis . . .	38	. .	. .	. .	42.2	43.3	44.4	45.6	46.7	56.4	57.4	59.5	43 49.44	− 4.91	3.02	9 43 41.51	2.59
	Weisse 1011 . .	39	32.5	34.6	35.6	45.4	46.4	47.5	48.6	49.7	59.7	0.7	2.7	47 47.58	+ 0.09	3.02	9 47 44.65	2.62
	*−27° 45′ . . .	40	. .	. .	. .	46.6	47.6	50.2	7.3	9.9	11.3	12.9	14.2	49 2.50	− 29.51	3.02	9 48 29.97	1.87
	Weisse (2) 1259 .	41	. .	. .	. .	48.4	49.7	51.4	53.0	54.1	. .	. .	. .	59 51.32	+ 0.30	3.01	9 59 48.61	2.07
	Weisse 94 . . .	42	26.3	27.4	28.7	30.0	32.2	. .	. .	. .	. .	. .	. .	6 28.92	33.86	3.01	10 6 59.77	2.59
	Weisse 96 . . .	43	37.8	39.1	40.6	42.0	44.1	. .	. .	. .	. .	. .	. .	6 40.72	+ 33.86	3.01	10 7 11.57	2.59
	Lacaille 4196 . .	44	24.0	26.2	27.5	39.0	40.2	41.6	42.9	44.4	55.6	57.0	59.4	7 41.62	− 0.13	3.01	10 7 38.48	1.66
	*−10° 5′ . . .	45	. .	. .	. .	39.7	40.7	42.1	43.1	44.1	. .	. .	. .	19 41.94	0.00	3.00	10 19 38.94	2.15
	Rumker 3203 . .	46	3.0	4.8	6.0	26.1	27.2	28.4	29.5	30.7	40.8	41.8	44.0	21 28.39	+ 0.14	3.00	10 21 25.53	2.55
	Weisse 517 . .	47	41.1	43.4	44.4	53.9	55.0	56.1	57.3	58.4	8.0	9.1	11.3	29 56.18	0.03	3.00	10 29 53.21	2.21
	B. A. C. 3649 . .	48	38.9	40.9	42.2	51.8	52.8	54.0	55.2	56.2	5.9	7.1	9.2	32 54.02	+ 0.10	3.00	10 32 51.12	2.40
	*−36° 13′ . . .	49	46.0	48.8	50.3	. .	3.4	4.6	5.9	. .	19.3	20.5	23.2	37 4.67	− 0.15	3.00	10 37 1.52	1.45
	l Leonis	50	10.6	12.8	13.9	23.7	24.7	25.8	27.0	28.2	38.0	39.1	41.2	42 25.91	+ 0.11	− 2.99	10 42 23.03	+ 2.40

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1869. h.	s.	s.	s.	s.
Apr. 17, 10.6	− 4.40	− 0.013	+ 0.25	+ 0.04

4. Very nebulous appearance.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 21 E.	B. A. C. 3737	1	. .	. .	. .	. .	. .	. .	31.6	34.1	35.3	36.4	37.7	48 35.02	− 33.80	− 2.99	10 47 58.23	+ 2.28
	O. Arg. N. 11258	2	. .	. .	. .	25.5	26.9	28.7	30.5	32.3	. .	. .	. .	49 28.78	+ 0.40	2.99	10 49 26.19	2.66
	β Ursæ Majoris	3	31.3	34.7	36.9	54.6	56.5	58.7	0.9	3.0	20.7	22.5	26.4	53 58.75	0.55	2.99	10 53 56.31	2.66
	Weisse 1006	4	43.0	45.1	46.3	56.0	57.1	58.1	59.3	0.3	10.2	11.2	13.3	56 58.17	+ 0.10	2.99	10 56 55.28	2.27
	*−40° 11′	5	36.5	39.4	40.6	53.4	54.5	56.0	57.5	58.7	11.6	13.2	15.7	1 56.10	− 0.18	2.99	11 1 52.93	1.26
	*+59° 24′	6	. .	. .	. .	59.7	1.4	3.7	6.1	8.1	. .	. .	. .	8 3.80	+ 0.59	2.98	11 8 1.41	2.42
	Weisse (2) 182	7	. .	. .	. .	54.1	55.2	56.7	58.1	59.4	11.8	12.9	15.1	11 2.91	− 5.88	2.98	11 10 54.05	2.37
	Lalande 21645	8	45.5	47.5	48.6	58.5	59.5	0.7	2.0	3.1	12.8	14.0	16.1	14 0.75	0.01	2.98	11 13 57.76	1.92
	O. Arg. S. 11374	9	8.0	10.1	11.3	22.2	23.3	24.5	25.8	26.9	37.6	38.7	41.0	19 24.49	0.08	2.98	11 19 21.43	1.68
	Weisse 421	10	. .	. .	. .	0.5	1.4	3.1	18.6	21.0	22.1	23.4	24.8	27 14.36	26.18	2.98	11 26 45.20	1.96
	Lacaille 4825	11	6.0	8.6	10.0	22.5	23.9	25.4	26.8	28.2	40.9	42.2	44.8	32 25.39	0.18	2.97	11 32 22.24	1.27
	B. A. C. 3963	12	. .	. .	. .	1.4	2.7	5.3	23.7	26.5	28.0	29.5	31.0	34 18.51	31.52	2.97	11 33 44.02	1.44
	Lacaille 4881	13	33.4	35.9	37.1	47.8	49.0	50.5	51.8	52.9	3.8	4.9	7.1	39 50.38	− 0.09	2.97	11 39 47.32	1.60
	β Leonis	14	. .	. .	. .	24.0	25.1	26.4	27.7	28.8	. .	. .	. .	42 26.40	+ 0.13	2.97	11 42 23.56	2.05
	Lalande 22566	15	59.0	1.5	2.9	14.6	15.9	17.4	18.8	20.0	. .	. .	. .	53 11.26	+ 6.30	2.96	11 53 14.60	2.02
	*−25° 48′	16	35.2	37.3	38.7	49.5	50.5	51.7	53.1	54.2	4.8	6.0	8.5	11 51.77	− 0.08	2.95	12 11 48.74	1.60
	*−28° 57′	17	20.8	23.0	24.4	35.3	36.5	37.8	39.2	40.3	51.3	52.6	55.0	14 37.84	− 0.10	2.95	12 14 34.79	1.54
	Lalande 23219	18	50.5	52.5	53.8	3.4	4.3	5.5	6.8	7.7	17.4	18.5	20.5	18 5.54	+ 0.03	2.95	12 18 2.62	1.83
	β Corvi	19	. .	. .	. .	48.0	49.1	51.3	7.9	10.4	11.8	13.1	14.4	28 3.25	− 28.27	2.94	12 27 32.04	1.73
	Weisse 510	20	20.6	22.7	24.0	. .	. .	. .	. .	. .	47.6	48.7	50.7	31 35.72	+ 0.06	2.94	12 31 32.84	1.84
	B. A. C. 4254	21	30.5	32.4	33.8	. .	. .	. .	. .	. .	57.6	58.6	0.7	31 45.60	+ 0.06	2.94	12 31 42.72	1.84
	*−34° 39′	22	23.0	25.5	26.7	38.5	39.7	41.2	42.5	43.8	55.6	56.9	59.4	36 41.16	− 0.14	2.94	12 36 38.08	1.43
	*+14° 28′	23	18.9	21.1	22.4	32.3	33.3	34.4	35.6	36.6	46.7	47.7	50.0	40 34.45	+ 0.13	2.94	12 40 31.64	1.71
	Weisse 743	24	25.5	27.6	28.8	38.5	39.6	40.9	42.1	43.2	53.0	54.1	56.2	44 40.86	− 0.11	2.94	12 44 37.81	1.74
	O. Arg. S. 12538	25	0.3	2.4	3.6	14.0	15.1	16.3	17.4	18.7	29.0	30.1	32.5	50 16.31	0.06	2.93	12 50 13.32	1.65
	O. Arg. S. 12564	26	15.2	17.7	18.9	29.1	30.1	31.4	32.7	33.8	44.3	45.4	47.6	52 31.47	0.06	2.93	12 52 28.48	1.65
	Lacaille 5387	27	52.5	54.5	56.0	6.8	7.9	9.3	10.5	11.7	22.7	23.8	26.0	58 9.25	− 0.10	2.93	12 58 6.22	1.58
	Weisse 1047	28	21.9	24.0	25.2	34.7	35.9	37.3	38.5	39.4	49.3	50.4	52.6	1 37.20	+ 0.12	2.93	13 1 34.39	1.73
	θ Virginis	29	59.4	1.2	2.6	12.1	13.2	14.4	15.6	16.6	26.4	27.4	29.4	3 14.39	+ 0.03	2.93	13 3 11.49	1.75
	Polaris, S. P.	30	. .	. .	. .	6.0	52.0	40.0	28.5	7.5	. .	. .	. .	10 38.80	− 13.85	2.92	. . . .	55.80
22 Y.	Weisse (2) 837	31	10.7	13.2	14.4	25.2	26.3	27.7	29.1	30.3	41.1	42.3	44.7	40 27.73	+ 0.19	3.04	9 40 24.88	3.04
	Weisse (2) 867	32	38.5	40.7	41.9	52.0	53.1	54.2	55.6	56.7	6.9	7.9	10.2	41 54.34	+ 0.13	3.04	9 41 51.43	2.86
	*−37° 47′	33	. .	. .	. .	36.2	39.3	40.9	42.4	44.0	. .	. .	. .	48 40.56	− 42.70	3.04	9 47 54.82	1.56
	Lacaille 4135	34	37.5	40.3	41.7	54.1	55.4	57.0	58.6	59.8	12.2	13.6	16.4	58 56.96	0.13	3.04	9 58 53.79	1.46
	Weisse 1279	35	. .	. .	. .	49.6	50.8	52.9	8.7	11.0	12.4	13.7	15.0	1 4.26	26.66	3.04	10 0 34.56	2.66
	*−29° 45′	36	18.2	20.6	21.7	33.0	34.2	35.6	37.0	38.1	49.2	50.3	52.8	7 35.52	− 0.08	3.04	10 7 32.40	1.76
	γ¹ Leonis	37	32.2	34.6	35.8	45.9	47.0	48.4	49.7	50.8	1.0	2.1	4.3	12 48.35	+ 0.14	3.04	10 12 45.45	2.70
	O. Arg. N. 10861	38	45.9	50.6	53.3	15.8	18.2	21.3	23.9	26.4	49.1	51.7	56.6	21 21.16	+ 0.63	3.04	10 21 18.75	3.38
	Lacaille 4317	39	30.4	32.7	33.9	44.6	45.7	47.1	48.3	49.5	0.2	1.4	3.7	24 47.05	− 0.06	3.04	10 24 43.95	1.81
	*−33° 48′	40	50.9	53.4	54.7	6.5	7.7	8.9	10.2	11.4	23.1	24.6	27.9	26 9.03	0.10	3.04	10 26 5.89	1.58
	*−35° 42′	41	23.0	25.6	27.0	38.8	40.1	41.5	43.0	44.4	56.3	57.5	0.1	29 41.57	0.11	3.04	10 29 38.42	1.51
	φ³ Hydræ	42	0.2	2.5	3.6	13.6	14.7	15.9	17.1	18.3	28.4	29.4	31.6	32 15.94	− 0.01	3.04	10 32 12.89	2.00
	33 Sextantis	43	33.0	35.1	36.2	45.8	46.9	48.1	49.2	50.3	59.8	0.9	3.0	34 48.03	+ 0.05	3.04	10 34 45.04	2.25
	*+36° 20′	44	19.6	20.8	22.3	23.8	25.0	. .	59.8	2.8	4.3	5.9	7.5	37 43.18	− 20.65	3.04	10 37 19.49	2.69
	Weisse (2) 830	45	38.0	40.5	42.0	54.0	55.2	56.8	58.2	59.5	11.6	12.8	15.4	41 56.73	+ 0.24	3.05	10 41 53.92	2.65
	O. Arg. N. 11258	46	. .	. .	. .	46.5	48.2	51.4	13.9	17.5	19.4	21.3	23.1	50 7.66	− 38.46	3.05	10 49 26.15	2.67
	β Ursæ Majoris	47	31.0	34.9	36.8	54.8	56.7	58.8	1.0	3.0	20.7	22.8	26.5	53 58.82	+ 0.46	3.05	10 53 56.23	2.67
	Weisse 1025	48	28.8	31.0	32.1	42.0	43.1	44.2	45.4	46.6	56.4	57.5	59.6	57 44.25	+ 0.11	3.05	10 57 41.31	2.31
	Weisse 1060	49	. .	. .	. .	55.6	56.7	58.8	14.4	16.9	18.2	19.5	20.8	0 10.12	− 26.64	3.05	10 59 40.43	2.30
	Weisse (2) 98	50	20.5	22.6	23.8	34.1	35.1	36.4	37.6	38.9	49.1	50.4	52.6	6 36.46	+ 0.15	− 3.05	11 6 33.56	+ 2.33

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 21, 11.5	− 2.97	+ 0.028	+ 0.29	+ 0.05

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 22 Y.	Lacaille 4669 . .	1	5.1	7.8	9.2	21.4	22.6	24.1	25.6	27.0	39.0	40.5	43.1	9 24.13	− 0.12	− 3.05	11 9 20.96	+ 1.37
	δ Crateris . . .	2	36.1	38.4	39.6	49.5	50.5	51.8	53.0	54.0	3.9	5.0	7.2	12 51.73	− 0.01	3.05	11 12 48.67	1.90
	Weisse (2) 257, (1st *)	3	..	..	..	0.9	2.1	3.6	5.2	6.5	..	..	..	15 3.66	+ 0.25	3.05	11 15 0.86	2.36
	Weisse (2) 257 (2d *)	4	44.8	47.6	48.9	..	..	..	..	..	19.0	20.3	22.9	15 3.92	+ 0.25	3.05	11 15 1.12	2.36
	B. A. C. 3927 . .	5	10.9	13.8	15.0	27.7	28.9	30.5	31.9	33.4	45.8	47.3	50.1	26 30.48	− 0.13	3.05	11 26 27.30	1.28
	Lacaille 4792 . .	6	33.3	35.8	37.1	48.7	49.8	51.6	52.9	54.2	6.0	7.3	9.9	28 51.51	0.11	3.05	11 28 48.35	1.43
	Lacaille 4837 . .	7	..	..	..	32.1	33.2	34.6	36.2	37.7	..	..	..	33 34.76	0.12	3.05	11 33 31.59	1.35
	*−37° 23′ . . .	8	17.1	20.0	21.5	..	..	..	..	..	51.2	52.6	55.2	33 36.27	− 0.12	3.05	11 33 33.10	1.35
	*+36° 10′ . . .	9	45.3	48.0	49.4	1.2	2.5	4.0	5.6	6.8	18.8	20.0	22.4	49 4.00	+ 0.24	3.06	11 49 1.18	2.06
	Weisse (2) 954 .	10	..	..	..	32.7	34.0	35.4	36.9	38.2	..	..	..	49 35.44	0.24	3.06	11 49 32.62	2.06
	Lalande 22565 .	11	49.1	51.5	52.7	4.5	5.6	7.2	8.7	9.8	21.5	22.8	25.4	53 7.16	+ 0.23	3.06	11 53 4.33	2.03
	Lalande 22566 .	12	..	..	..	31.7	33.0	35.5	54.1	57.0	58.5	0.1	1.6	53 48.94	− 31.43	3.06	11 53 14.45	2.03
	*−32° 19′ . . .	13	..	9.3	10.6	21.8	22.9	24.6	25.9	27.3	38.5	39.8	..	2 24.52	0.09	3.06	12 2 21.37	1.48
	*−39° 50′ . . .	14	..	..	..	43.2	46.5	48.0	49.8	51.4	..	..	..	4 47.78	43.95	3.06	12 4 0.77	1.28
	Lacaille 5097 . .	15	29.0	31.4	32.7	44.0	45.3	46.6	48.0	49.1	0.4	1.9	4.2	12 46.60	− 0.09	3.06	12 12 43.45	1.49
	Weisse 291. . .	16	55.2	57.4	58.6	..	9.2	10.4	11.6	12.6	..	..	..	19 5.00	+ 5.42	3.06	12 19 7.36	1.84
	*+5° 27′ . . .	17	..	33.3	34.4	44.1	45.1	46.4	47.6	48.6	58.3	59.3	..	24 46.34	+ 0.07	3.06	12 24 43.35	1.87
	Lacaille 5214 . .	18	44.1	46.9	48.3	0.7	2.1	3.7	5.1	6.5	18.8	20.1	23.0	29 3.57	− 0.13	3.06	12 29 0.38	1.32
	Lacaille 5238 . .	19	45.2	48.2	49.7	2.7	4.3	5.9	7.5	8.9	22.3	23.6	26.6	34 5.90	0.16	3.06	12 34 2.68	1.20
	O. Arg. S. 12390 .	20	7.6	10.0	11.1	22.2	23.3	24.7	26.1	27.5	38.3	39.5	41.9	38 24.75	0.13	3.06	12 38 21.56	1.55
	28 Comæ	21	..	..	..	..	..	..	16.0	18.6	19.9	21.1	22.3	42 19.58	34.61	3.06	12 41 41.91	1.81
	*−32° 26′ . . .	22	6.7	9.3	10.6	22.0	23.2	24.7	26.0	27.3	38.6	39.7	42.4	50 24.59	− 0.09	3.07	12 50 21.43	1.50
	Weisse 1036 . .	23	..	48.0	49.3	59.2	0.2	1.3	2.6	3.7	13.6	14.8	..	1 1.41	+ 0.11	3.07	13 0 58.45	1.74
	θ Virginis, (Comp.) .	24	38.5	39.7	41.0	42.2	44.5	..	44.7	47.1	48.3	49.6	50.9	3 14.65	− 0.32	3.07	13 3 11.26	1.76
	θ Virginis . . .	25	59.4	1.5	2.6	12.2	13.2	14.4	15.6	16.7	26.4	27.4	29.5	3 14.45	+ 0.03	3.07	13 3 11.41	1.75
	*−35° 15′ . . .	26	9.6	12.3	13.6	25.4	26.6	28.1	29.6	30.7	42.7	43.8	46.5	6 28.08	− 0.11	3.07	13 6 24.90	1.47
	Weisse 145. . .	27	3.0	5.1	6.2	15.8	16.9	18.0	19.2	20.3	29.8	30.8	33.0	10 18.01	+ 0.06	3.07	13 10 15.00	1.75
	Weisse 169. . .	28	19.2	21.4	22.5	32.2	33.3	34.4	35.7	36.7	46.4	47.4	49.5	11 34.43	+ 0.03	3.07	13 11 31.39	1.74
	*−34° 59′ . . .	29	16.3	19.0	20.3	31.9	33.1	34.5	35.9	37.2	49.1	50.3	52.9	20 34.59	− 0.11	3.07	13 20 31.41	1.51
	Weisse 426. . .	30	..	25.3	26.4	36.2	37.2	38.4	39.6	40.6	50.4	51.5	..	26 38.40	+ 0.02	3.07	13 26 35.35	1.73
	Polaris, S. P. . .	31	..	..	..	..	..	..	5.0	32.0	20.0	22.0	7.0	33 17.20	−22 52.16	3.07	. . . .	55.60
	Lacaille 5682 . .	32	9.7	12.3	13.5	25.4	26.7	28.1	29.5	30.8	42.6	43.8	46.2	41 28.05	0.11	3.07	13 41 24.87	1.56
	O. Arg. S. 13177 .	33	..	11.0	12.4	23.5	24.6	25.9	27.2	28.4	39.4	41.5	..	43 25.99	0.07	3.08	13 43 22.84	1.65
	O. Arg. S. 13182 .	34	..	..	..	53.0	54.1	56.5	13.7	16.5	17.8	19.2	20.6	44 8.92	29.43	3.08	13 43 36.41	1.65
	*−30° 19′ . . .	35	10.9	13.3	14.6	25.9	26.9	28.4	29.7	30.8	42.1	43.2	45.8	50 28.33	0.08	3.08	13 50 25.17	1.64
	*−38° 47′ . . .	36	39.3	42.0	43.4	55.7	56.8	58.5	0.1	1.5	13.7	15.1	17.9	53 58.55	0.13	3.08	13 53 55.34	1.55
	Lacaille 5798, (1st *)	37	..	..	..	18.8	20.0	21.5	23.0	24.3	..	..	..	56 21.52	0.12	3.08	13 56 18.32	1.59
	Lacaille 5798, (2d *)	38	4.8	7.5	8.8	..	..	..	..	..	38.5	39.8	42.4	56 23.63	0.12	3.08	13 56 20.43	1.59
	*+23° 50′ . . .	49	..	..	..	3.6	4.8	6.9	23.8	26.3	27.7	29.0	30.4	0 19.06	− 28.27	3.08	13 59 47.71	1.44
	α Bootis	40	29.5	31.8	33.0	43.2	44.2	45.4	46.8	47.9	58.2	59.4	1.4	9 45.53	+ 0.14	3.08	14 9 42.59	1.43
	*−38° 6′ . . .	41	33.7	36.2	37.6	49.8	51.0	52.6	54.2	55.6	7.8	9.0	11.7	13 52.65	− 0.12	3.08	14 13 49.45	1.63
24	*−37° 12′ ± . .	42	47.7	50.5	51.7	..	..	..	44.2	47.5	48.9	50.6	52.2	40 26.66	20.26	2.99	9 40 3.41	1.65
	*−37° 12′ ± . .	43	..	..	..	12.1	13.3	14.9	16.5	17.8	..	..	..	40 14.92	0.10	2.99	9 40 11.83	1.65
	O. Arg. S. 10122 .	44	7.2	9.6	10.8	21.4	22.5	23.8	25.0	26.2	36.9	38.0	40.2	42 23.78	− 0.04	2.99	9 42 20.75	2.03
	*+44° 33′ . . .	45	..	15.9	17.6	31.0	32.5	34.1	35.7	37.3	51.0	52.5	..	47 34.18	+ 0.28	2.98	9 47 31.48	3.38
	Weisse (2) 1030 .	46	9.2	11.7	13.0	23.8	25.0	26.4	27.8	29.0	39.9	41.1	43.6	49 26.41	0.17	2.98	9 49 23.60	3.00
	21 Sextantis . . .	47	25.2	27.3	28.5	38.0	39.1	..	41.4	42.6	52.4	53.3	55.5	7 40.33	0.02	2.96	10 7 37.39	2.29
	γ^1 Leonis	48	32.3	34.5	35.6	45.9	46.9	48.3	49.5	50.5	0.8	2.1	4.3	12 48.25	0.13	2.96	10 12 45.42	2.72
	26 Sextantis . . .	49	44.1	46.1	47.3	56.9	57.9	59.1	0.3	1.4	11.0	12.1	14.2	19 59.13	+ 0.05	− 2.95	10 19 56.23	+ 2.35

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 22, 12.2	− 3.06	− 0.010	+ 0.24	+ 0.05

DATE.		OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
				I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Apr. 24 Y.		Weisse 425 . .	1	2.8	5.0	6.1	15.9	16.8	18.1	19.2	20.3	30.1	31.1	33.3	25 18.06	+ 0.09	− 2.94	10 25 15.21	+ 2.48
		Weisse 456 .	2	47.4	49.4	50.6	0.2	1.2	2.3	3.5	4.6	14.3	15.3	17.5	27 2.39	+ 0.04	2.94	10 26 59.49	2.27
		O. Arg. S. 10775 .	3	25.2	27.6	28.9	39.9	40.9	42.4	43.7	44.9	55.7	57.0	59.4	31 42.33	− 0.05	2.94	10 31 39.34	1.75
		*−35° 50′ . . .	4	38.2	40.6	42.0	54.0	55.1	56.6	58.1	59.3	11.3	12.7	15.0	34 56.63	0.09	2.93	10 34 53.61	1.52
		*−35° 26′ . . .	5	. .	21.9	23.4	35.4	36.5	38.0	39.5	40.7	52.7	53.9	. .	41 38.00	0.09	2.93	10 41 34.98	1.52
		O. Arg. S. 10907 .	6	. .	. .	. .	4.1	5.1	6.5	8.0	9.2	20.3	21.5	24.0	43 12.34	5.80	2.92	10 43 3.62	1.67
		O. Arg. S. 10944 .	7	13.6	15.9	17.1	. .	. .	. .	. .	. .	43.4	44.6	47.0	46 30.27	− 0.04	2.92	10 46 27.31	1.77
		Lacaille 4519 . .	8	26.4	28.8	30.1	41.5	42.5	43.9	45.3	46.5	. .	. .	. .	49 38.12	+ 5.74	2.92	10 49 40.94	1.63
	δ	Leonis	9	55.8	58.1	59.3	9.6	10.6	12.0	13.3	14.4	24.6	25.8	28.1	7 11.96	+ 0.14	2.90	11 7 9.20	2.35
		Lacaille 4680 . .	10	. .	. .	. .	39.7	41.0	42.5	43.9	45.2	57.5	58.8	1.5	10 48.76	− 6.38	2.90	11 10 39.48	1.39
		Lacaille 4703 . .	11	40.7	43.3	44.9	57.5	58.7	0.3	1.9	3.0	15.8	17.2	19.9	13 0.29	− 0.11	2.89	11 12 57.29	1.31
		Weisse 258. . .	12	7.3	9.4	10.5	20.1	21.2	22.4	23.6	24.7	34.4	35.3	37.4	16 22.39	+ 0.07	2.89	11 16 19.57	2.15
		B. A. C. 3937 . .	13	10.6	13.0	14.3	25.2	26.3	27.6	29.0	30.2	. .	. .	. .	29 22.02	+ 5.83	2.87	11 29 24.98	2.23
	β	Leonis	14	24.0	25.1	26.3	27.6	28.8	. .	57.6	0.2	1.5	2.7	4.1	42 43.79	− 17.38	2.86	11 42 23.55	2.07
		Weisse (2) 1067 .	15	41.8	44.4	45.8	57.9	59.1	0.6	1.9	3.3	15.5	16.8	19.4	55 0.59	+ 0.22	2.84	11 54 57.97	2.03
		*−32° 19′ . . .	16	6.7	8.9	10.4	21.8	22.9	24.4	25.7	26.9	38.5	39.6	42.2	2 24.36	− 0.07	2.83	12 2 21.46	1.49
	12	Virginis . . .	17	34.3	36.4	37.5	47.3	48.2	49.4	50.7	51.8	1.6	2.6	4.9	6 49.52	+ 0.09	2.83	12 6 46.78	1.96
	8	Comæ Berenices .	18	29.4	31.7	32.9	43.4	44.4	45.7	47.0	48.1	58.8	59.8	2.2	12 45.76	+ 0.15	2.82	12 12 43.09	1.94
		B. A. C. 4153 . .	19	. .	. .	. .	45.6	46.7	48.2	49.5	50.7	1.5	2.7	5.0	13 53.74	− 5.44	2.82	12 13 45.48	1.92
		O. Arg. S. 12124 .	20	19.9	22.3	23.5	34.0	35.1	36.5	37.8	39.0	49.5	50.8	53.1	16 36.50	0.04	2.82	12 16 33.64	1.61
		O. Arg. S. 12165 .	21	2.8	5.3	6.5	17.3	18.3	19.7	21.1	22.4	33.1	34.2	36.5	20 19.75	− 0.05	2.81	12 20 16.89	1.59
		O. Arg. N. 12726 .	22	33.2	37.9	40.2	2.7	5.1	7.8	10.8	13.0	35.8	38.1	42.7	26 7.94	+ 0.55	2.81	12 26 5.68	0.93
		*−33° 1′ . . .	23	56.2	58.7	0.0	11.4	12.6	14.0	15.4	16.6	28.2	29.4	32.0	29 14.05	− 0.08	2.80	12 29 11.17	1.48
		Lalande 23666 .	24	31.2	34.0	35.3	47.0	48.1	49.6	51.1	52.5	4.0	5.3	7.9	33 49.64	+ 0.21	2.80	12 33 47.05	1.73
		B. A. C. 4298 . .	25	. .	. .	. .	58.3	4.8	12.7	20.8	27.4	. .	. .	. .	41 12.80	+ 1.71	2.79	12 41 11.72	3.55
		*−27° 15′ . . .	26	0.7	3.1	4.3	15.1	16.2	17.6	18.9	20.1	30.8	32.1	34.5	47 17.58	− 0.05	2.78	12 47 14.75	1.58
		*−32° 26′. . .	27	6.5	9.0	10.3	21.8	22.9	24.4	25.7	26.9	38.6	39.7	42.3	50 24.37	− 0.07	2.78	12 50 21.52	1.50
		*+13° 1′ . . .	28	22.1	24.3	25.5	. .	. .	. .	. .	. .	49.5	50.7	53.0	3 37.52	+ 0.10	2.77	13 3 34.85	1.74
		Weisse 87 . . .	29	48.0	50.1	51.2	1.1	2.2	3.4	4.5	5.5	15.3	16.4	18.6	7 3.30	+ 0.01	2.76	13 7 0.55	1.73
	57	Virginis . . .	30	42.4	44.6	45.7	56.1	57.1	58.3	59.5	0.6	10.9	11.9	14.3	8 58.31	− 0.02	2.76	13 8 55.53	1.68
		Lacaille 5478 . .	31	58.2	0.6	1.9	12.6	13.6	15.2	16.5	17.6	28.5	29.7	31.9	11 15.12	− 0.05	2.76	13 11 12.31	1.59
		*+12° 56′ . . .	32	51.6	53.7	54.8	4.7	5.6	6.9	8.1	9.3	19.2	20.3	22.5	14 6.97	+ 0.10	2.75	13 14 4.32	1.70
		Polaris, S. P. . .	33	. .	. .	. .	. .	. .	. .	. .	. .	45.0	28.0	55.0	19 42.67	− 9 17.39	2.75	. . . .	55.03
		*−1° 38′ . . .	34	. .	3.6	4.7	14.3	15.3	16.6	17.8	18.8	28.4	29.5	. .	26 16.56	+ 0.04	2.74	13 26 13.86	1.72
	ζ	Virginis . . .	35	50.1	52.2	53.3	3.0	3.9	5.1	6.3	7.4	16.9	18.0	20.1	28 5.12	+ 0.05	2.74	13 28 2.43	1.70
		Lacaille 5635 . .	36	37.4	39.9	40.9	51.8	53.0	54.3	55.7	56.7	7.6	8.8	10.9	32 54.27	− 0.05	2.73	13 32 51.49	1.63
		Weisse (2) 749 .	37	. .	. .	. .	54.3	55.5	56.9	58.3	59.7	11.5	12.8	15.4	37 3.05	5.91	2.73	13 36 54.41	1.30
		Lacaille 5682 . .	38	9.4	12.0	13.4	24.9	26.3	27.8	29.3	30.4	42.2	43.5	46.0	41 27.75	0.08	2.72	13 41 24.95	1.55
		B. A. C. 4613 . .	39	. .	. .	. .	4.7	5.9	7.1	8.3	9.6	. .	. .	. .	43 7.12	0.02	2.72	13 43 4.38	1.69
		Weisse (2) 976. .	40	. .	. .	. .	48.8	50.1	51.6	53.2	54.3	6.6	7.9	10.6	45 57.89	6.11	2.72	13 45 49.06	1.18
		Lacaille 5758 . .	41	41.6	44.3	45.4	57.6	58.9	0.5	2.0	3.3	15.5	16.8	19.5	49 0.49	0.09	2.72	13 48 57.68	1.53
		*+11° 58′ . . .	42	. .	. .	. .	15.4	16.7	18.9	34.6	37.1	38.3	39.6	40.9	52 30.19	− 26.49	2.71	13 52 0.99	1.61
		Weisse (2) 1201 .	43	. .	14.2	15.4	26.0	27.1	28.4	29.7	30.9	41.5	42.6	. .	55 28.42	+ 0.15	2.71	13 55 25.86	1.45
		*+23° 50′ . . .	44	33.9	36.1	37.3	47.9	49.0	50.4	51.6	52.6	3.2	4.3	6.5	59 50.25	0.15	2.70	13 59 47.70	1.43
	α	Bootis	45	29.4	31.4	32.6	42.7	43.9	45.2	46.5	47.5	57.7	58.9	1.1	9 45.17	0.13	2.69	14 9 42.61	1.41
May 4	μ	Leonis	46	26.7	29.0	30.3	41.0	42.2	43.5	44.8	46.0	56.7	57.9	0.3	45 43.49	0.25	24.93	9 45 18.81	3.18
		*−7° 36′ . . .	47	5.0	7.1	8.3	17.9	19.0	20.1	21.3	22.4	32.1	33.2	35.2	22 20.15	0.02	24.93	10 21 55.24	2.35
		Lalande 20419. .	48	51.6	53.7	54.9	4.4	5.6	6.8	7.9	9.1	18.7	19.8	22.0	26 6.77	0.02	24.93	10 25 41.86	2.33
		Weisse 520. . .	49	50.1	51.3	52.8	54.0	56.1	11.3	13.4	14.7	. .	. .	. .	30 0.46	+ 26.11	24.93	10 30 1.64	2.24
		Weisse 526. . .	50	. .	. .	. .	48.7	49.8	51.8	7.5	9.8	11.1	12.4	13.7	31 3.10	− 26.33	−24.93	10 30 11.84	+ 2.28

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Apr. 24, 12.1	− 2.83	+ 0.067	+ 0.21	+ 0.05

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 4	*−29° 46′ . . .	1	37.6	39.1	40.6	42.0	44.2	1.3	3.9	5.4	. .	. .	. .	42 49.26	+ 29.35	−24.93	10 42 53.68	+ 1.82
Y.	*−29° 17′ . . .	2	33.8	36.2	37.6	48.5	49.6	51.0	52.2	53.4	4.7	5.9	8.2	43 51.01	− 0.12	24.93	10 43 25.96	1.83
	*− 0° 39′ . . .	3	8.8	10.9	12.1	21.6	22.6	23.8	25.1	26.2	35.7	36.9	38.9	47 23.87	+ 0.07	24.93	10 46 59.01	2.33
	B. A. C. 3737 . .	4	. .	. .	. .	34.9	36.1	38.1	53.4	55.9	57.0	58.4	59.5	48 49.16	− 26.07	24.93	10 47 58.16	2.42
	Carrington 1637 .	5	. .	. .	. .	56.1	2.6	11.8	19.5	26.7	. .	. .	. .	54 11.34	+ 2.90	24.93	10 53 49.31	4.01
	Lacaille 4570 . .	6	6.9	9.2	10.6	21.2	22.4	23.7	25.0	26.2	37.0	38.2	40.5	57 23.72	− 0.10	24.93	10 56 58.69	1.84
	*+68° 15′ . . .	7	. .	. .	. .	30.2	32.5	35.8	39.1	42.1	. .	. .	. .	6 35.94	+ 1.07	24.93	11 6 12.08	2.88
	*+68° 14′ . . .	8	15.5	18.0	21.1	24.5	27.2	. .	43.0	49.3	52.8	56.2	59.5	8 6.71	− 44.30	24.93	11 6 57.48	2.86
	*+68° 18′ . . .	9	. .	. .	. .	. .	. .	. .	44.5	50.5	53.9	57.5	0.7	9 53.42	− 1 29.95	24.93	11 7 58.54	2.83
	*+ 9° 53′ . . .	10	5.6	7.9	9.0	18.7	19.7	20.8	21.9	22.9	33.0	34.1	36.1	14 20.88	+ 0.13	24.93	11 13 56.08	2.31
	Weisse 235 . .	11	13.2	15.5	16.7	26.4	27.4	28.6	29.8	30.8	40.6	41.7	43.9	15 28.60	0.13	24.93	11 15 3.80	2.30
	τ Leonis	12	22.7	24.7	25.8	35.5	36.5	37.7	38.9	40.0	49.5	50.6	52.7	21 37.69	+ 0.09	24.93	11 21 12.85	2.21
	Lacaille 4805 . .	13	19.3	21.8	22.9	34.6	35.8	37.2	38.6	39.9	51.5	52.7	55.3	30 37.24	− 0.15	24.93	11 30 12.16	1.59
	*−5° 23′ . . .	†14	24.8	26.0	27.2	28.3	29.5	. .	57.4	0.3	1.5	2.7	3.9	33 44.16	− 16.87	24.93	11 33 2.36	2.06
	Weisse (2) 793 .	15	. .	. .	. .	36.3	37.4	38.7	39.9	41.1	. .	. .	. .	41 38.63	+ 0.21	24.93	11 41 13.96	2.21
	93 Leonis	16	23.0	25.3	26.5	. .	. .	. .	. .	. .	51.7	52.8	55.1	41 39.07	0.21	24.93	11 41 14.35	2.21
	*−9° 51′ . . .	17	7.3	9.6	10.7	20.3	21.3	22.6	23.8	24.8	34.8	35.8	37.9	56 22.63	+ 0.01	24.94	11 55 57.70	1.92
	*−9° 55′ . . .	18	52.8	54.0	55.4	56.7	58.8	. .	59.8	2.1	3.4	4.7	6.0	56 29.37	− 0.34	24.94	11 56 4.09	1.92
	O. Arg. S. 1944 .	19	46.5	. .	48.8	0.7	2.0	3.2	4.6	5.8	16.7	. .	20.0	3 3.14	0.10	24.94	12 2 38.10	1.67
	Lacaille 5065 . .	20	44.5	. .	48.2	0.6	1.8	3.3	4.8	6.2	18.5	. .	22.4	7 3.37	− 0.19	24.94	12 6 38.24	1.42
	8 Comæ Berenices .	21	51.4	53.8	54.9	5.5	6.5	7.9	9.1	10.3	20.8	21.9	24.2	13 7.85	+ 0.23	24.94	12 12 43.14	2.00
	*−32° 51′ . . .	22	54.2	56.5	58.0	9.5	10.6	11.9	13.5	14.8	26.5	27.6	30.2	16 12.12	− 0.14	24.94	12 15 47.04	+ 1.54
	Carrington 1849 .	23	. .	. .	. .	32.0	46.5	5.0	23.5	38.0	. .	. .	. .	20 5.00	+ 6.10	24.94	12 19 46.16	− 6.82
	O. Arg. S. 12269 .	24	20.8	23.1	24.5	34.9	35.9	37.4	38.7	39.8	50.5	51.6	53.9	29 37.37	− 0.08	24.94	12 29 12.35	+ 1.66
	O. Arg. S. 12238 .	25	26.1	28.4	29.7	40.5	41.6	42.9	44.3	45.5	56.3	57.4	59.8	34 42.95	0.10	24.94	12 34 17.91	1.64
	*−36° 31′ . . .	26	7.6	10.1	11.5	33.5	34.7	36.4	37.8	39.0	51.3	52.5	55.0	37 36.31	− 0.17	24.94	12 37 11.20	1.45
	*+18° 27′ . . .	27	30.7	32.9	34.1	44.4	45.3	46.5	47.8	48.9	59.1	0.2	2.3	42 46.56	+ 0.19	24.94	12 42 21.81	1.84
	Lalande 23919. .	28	. .	. .	. .	. .	. .	. .	2.0	5.0	6.5	8.1	9.7	44 6.26	− 41.27	24.94	12 43 0.05	1.70
	*−27° 18′ . . .	29	59.5	0.8	2.4	3.8	6.2	. .	13.8	16.5	17.8	19.3	20.8	47 40.09	0.49	24.94	12 47 14.66	1.61
	*−27° 15′ . . .	30	23.3	25.8	27.1	37.8	38.8	40.2	41.4	42.7	53.7	55.0	57.3	47 40.28	0.10	24.94	12 47 15.24	1.61
	Lacaille 5347 . .	31	52.9	55.7	57.3	10.6	11.8	13.5	15.2	16.5	29.7	31.2	34.0	52 13.49	0.23	24.94	12 51 48.32	1.29
	ψ Hydræ	32	10.3	12.7	13.9	24.2	25.4	26.6	27.9	29.1	39.6	40.7	43.1	2 26.68	0.07	24.94	13 2 1.67	1.65
	θ Virginis . . .	33	. .	. .	. .	48.2	49.4	51.4	6.7	9.1	10.4	11.7	12.8	4 2.46	− 26.07	24.94	13 3 11.45	1.76
	Weisse 81 . . .	34	46.9	49.2	50.3	59.8	0.9	2.2	3.3	4.4	14.0	15.1	17.2	7 2.12	+ 0.05	24.94	13 6 37.23	1.75
	*+33° 11′ . . .	35	20.0	22.7	24.0	35.3	36.6	38.0	39.6	40.7	52.3	53.5	55.9	11 38.05	+ 0.31	24.94	13 11 13.42	1.53
	Weisse 222 . .	36	52.4	54.7	55.7	5.6	6.6	7.9	9.1	10.2	19.9	21.1	23.1	15 7.85	0.00	24.94	13 14 42.91	1.71
	Polaris, S. P. .	37	. .	. .	. .	. .	. .	. .	. .	. .	16.5	1.0	26.0	20 14.50	− 9 23.52	24.94	. . . .	+ 50.99
	B. A. C. 4527 . .	38	58.4	9.4	15.0	7.5	11.8	19.0	25.4	30.7	22.7	28.9	40.0	26 18.98	+ 2.23	24.94	13 25 56.27	− 3.88
	O. Arg. S. 13005 .	39	12.7	15.2	16.5	26.8	28.0	29.2	30.5	31.5	42.1	43.3	45.6	31 29.22	− 0.07	24.94	13 31 4.21	+ 1.64
	Weisse 630 . .	40	29.5	31.5	32.8	42.6	43.7	45.0	46.2	47.2	57.1	58.2	0.3	37 45.92	0.00	24.94	13 37 20.98	1.68
	*−37° 36′ . . .	41	40.5	43.2	44.6	56.7	57.9	59.6	1.1	2.4	14.5	15.9	18.5	40 59.54	− 0.18	24.94	13 40 34.42	1.48
	Weisse (2) 894 .	42	3.5	5.8	7.0	17.4	18.5	19.7	20.9	22.1	32.7	33.6	36.0	43 19.75	+ 0.22	24.94	13 42 55.03	1.49
	*−36° 40′ . . .	43	3.2	5.9	7.2	19.3	20.4	21.9	23.2	24.7	36.8	38.1	40.7	11 21.95	− 0.17	24.94	14 10 56.84	1.55
	O. Arg. S. 13589 .	44	58.8	0.9	2.0	12.1	13.3	14.5	15.6	16.7	27.0	28.2	30.4	17 14.50	0.04	24.94	14 16 49.52	1.66
	Lacaille 5963 . .	45	12.7	15.6	16.6	28.9	30.1	31.6	33.1	34.3	46.8	48.1	51.0	23 31.71	0.19	24.95	14 23 6.57	1.61
	Lacaille 6109 . .	46	2.4	4.9	6.4	17.7	18.8	20.3	21.7	22.8	34.2	35.6	37.9	42 20.25	0.14	24.95	14 41 55.16	1.67
	B. A. C. 4901 . .	47	46.8	49.4	50.8	2.7	4.0	5.6	7.0	8.3	20.5	21.8	24.4	45 5.57	0.18	24.95	14 44 40.44	1.64
	Lacaille 6152 . .	48	35.9	38.6	40.1	51.6	52.7	54.1	55.7	56.9	8.6	9.8	12.4	48 54.22	0.15	24.95	14 48 29.12	1.68
	Lacaille 6186 . .	49	3.4	6.1	7.6	19.8	21.0	22.5	24.1	25.4	37.6	38.8	41.3	53 22.51	− 0.18	24.95	14 52 57.38	1.67
	*+10° 26′ . . .	50	. .	19.8	20.9	30.6	31.7	32.9	34.1	35.2	45.0	46.1	. .	56 32.92	+ 0.13	−24.95	14 56 8.10	+ 1.45

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 4, 13.0	− 24.94	− 0.004	+ 0.35	+ 0.07

14. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May. 4	B. A. C. 4963 . .	1	42.9	45.2	46.4	57.0	58.0	59.2	0.7	1.8	12.4	13.3	15.8	58 59.34	− 0.08	−24.95	14 58 34.31	+ 1.72
Y.	B. A. C. 4972 . .	2	48.5	50.7	51.8	2.4	3.5	4.9	6.2	7.4	17.8	19.0	21.4	0 4.87	0.08	24.95	14 59 39.84	1.72
	*−37° 0′ . . .	†3	. .	. .	. .	50.3	51.8	54.1	13.6	16.5	18.1	19.8	21.3	4 8.19	32.75	24.95	15 3 10.49	1.71
	O. Arg. S. 14402 .	4	25.2	27.6	28.7	39.0	40.1	41.3	42.6	43.8	54.0	55.2	57.4	8 41.35	0.05	24.95	15 8 16.35	1.73
	O. Arg. S. 14421 .	5	. .	. .	. .	21.6	22.8	24.1	25.5	26.7	37.8	39.1	41.5	10 29.89	5.86	24.95	15 9 59.08	1.75
	*−30° 0′ . . .	6	. .	. .	. .	49.5	50.7	53.1	10.7	13.6	14.7	16.1	17.6	11 5.75	30.15	24.95	15 10 10.65	1.75
	*−31° 51′ . . .	7	21.1	23.7	24.9	36.3	37.4	38.8	40.3	41.5	52.7	54.0	56.6	15 38.85	− 0.13	24.95	15 15 13.77	1.76
	μ^1 Bootis	8	39.7	42.4	43.7	55.8	57.2	58.8	0.2	1.5	13.7	15.0	17.6	19 58.69	+ 0.37	24.95	15 19 34.11	0.68
	*−31° 51′ . . .	9	. .	. .	. .	58.8	0.1	2.5	20.5	23.2	24.7	26.2	27.7	23 15.46	− 30.76	24.95	15 22 19.75	1.79
	B. A. C. 5117 . .	10	18.5	20.6	21.9	32.4	33.6	35.0	36.3	37.4	48.0	49.2	51.4	26 34.94	0.08	24.95	15 26 9.91	1.78
	O. Arg. S. 14674 .	11	29.7	32.0	33.1	43.9	44.9	46.3	47.6	48.6	59.2	0.3	2.6	26 46.20	− 0.08	24.95	15 26 21.17	1.78
	ζ Cor. Borealis, (1st*)	12	33.7	36.4	37.7	. .	. .	. .	. .	. .	7.4	8.5	11.3	34 52.50	+ 0.36	24.95	15 34 27.91	0.68
	ζ Cor. Borealis, (2d*)	13	. .	. .	. .	50.0	51.2	52.7	54.4	55.7	. .	. .	. .	34 52.80	0.36	24.95	15 34 28.21	0.68
	α Serpentis . . .	14	0.3	2.3	3.4	13.2	14.2	15.4	16.6	17.6	27.3	28.4	30.4	38 15.37	0.11	24.95	15 38 50.53	1.50
5	ρ Leonis	15	5.4	7.5	8.5	18.2	19.2	20.4	21.6	22.7	32.4	33.5	35.8	26 20.47	0.13	25.37	. . . .	2.60
E.	48 Leonis	16	8.5	10.6	11.7	21.4	22.5	23.7	24.8	25.8	. .	. .	. .	28 18.62	5.14	25.37	10 27 58.39	2.56
	35 Leonis	17	. .	. .	. .	12.7	13.9	15.3	16.8	18.2	. .	. .	. .	29 15.38	0.36	25.37	10 28 50.37	2.98
	38 Leonis	18	44.0	46.6	47.9	0.3	1.7	3.2	4.7	6.0	18.4	19.7	22.4	32 3.17	0.38	25.37	10 31 38.18	2.99
	*−37° 35′ . . .	19	52.4	53.7	55.5	57.2	59.7	. .	. .	. .	. .	. .	. .	42 55.70	41.44	25.37	10 43 11.77	1.62
	B. A. C. 3719 . .	20	35.4	36.7	38.5	39.8	42.4	. .	. .	. .	. .	. .	. .	43 38.56	39.30	25.37	10 43 52.49	1.74
	Weisse 957 . .	21	2.8	4.8	5.9	15.5	16.6	17.8	19.0	20.1	29.7	30.7	32.7	54 17.78	+ 0.10	25.38	10 53 52.50	1.89
	Lacaille 4667 . .	22	. .	. .	. .	19.6	20.9	22.4	24.0	25.3	37.5	38.8	41.3	9 28.72	− 6.57	25.38	11 8 56.77	1.51
	Lacaille 4672 . .	23	45.3	47.9	49.5	1.5	2.7	4.4	5.8	7.2	19.4	20.9	23.4	10 4.36	− 0.19	25.38	11 9 38.79	1.51
	Weisse 211 . .	24	26.0	27.2	28.5	29.9	32.2	. .	. .	. .	. .	. .	. .	13 28.76	+ 33.97	25.38	11 13 37.35	2.03
	Weisse (2) 246. .	25	31.4	33.9	35.4	47.3	48.5	50.0	51.5	52.8	4.8	6.0	8.7	14 50.03	0.35	25.38	11 14 25.00	2.53
	*+1° 30′ . .	26	44.4	45.5	46.9	48.2	50.2	. .	. .	. .	. .	. .	. .	28 47.04	26.10	25.39	11 28 47.75	2.16
	Weisse (2) 540 .	27	45.2	47.6	48.8	59.5	0.7	2.1	3.3	4.5	15.2	16.4	18.5	30 1.98	+ 0.22	25.39	11 29 36.81	2.32
	*−34° 49′ . . .	28	. .	. .	. .	1.5	2.5	3.9	5.5	6.5	18.3	19.5	22.2	31 9.99	− 6.22	25.39	11 30 38.38	1.57
	Carrington 1741 .	29	. .	. .	. .	0.6	6.6	15.0	22.6	29.9	. .	. .	. .	34 14.94	+ 2.77	25.39	11 33 52.32	1.46
	β Leonis	30	33.3	35.2	36.5	46.5	47.6	48.8	50.1	51.1	1.0	2.2	4.4	42 48.79	0.17	25.39	. . . .	2.16
10	δ Leonis	31	11.0	13.1	14.3	24.8	26.0	27.3	28.5	29.7	39.9	41.1	43.3	7 27.18	0.04	18.26	. . . .	2.54
	O. Arg. N. 11619 .	32	59.6	5.8	8.8	36.9	39.5	43.0	46.6	49.6	. .	. .	. .	9 28.72	0.70	18.26	11 9 11.16	3.10
	Weisse 488. . .	33	42.8	44.1	45.3	46.6	49.2	. .	. .	. .	. .	. .	. .	28 45.60	+ 34.46	18.26	11 29 1.80	2.03
	Weisse (2) 534. .	34	. .	. .	. .	57.6	59.0	1.4	18.1	20.5	21.6	23.3	24.6	30 13.26	− 28.82	18.25	11 29 26.19	2.40
	*+71° 19′ . . .	35	. .	. .	. .	. .	. .	. .	34.1	40.6	44.5	49.1	52.4	31 44.14	1 41.88	18.25	11 29 44.01	2.50
	Weisse 562 . .	36	7.3	9.3	10.3	20.0	21.1	22.3	23.5	24.5	33.9	35.0	37.3	33 22.23	− 0.09	18.25	11 33 3.89	2.10
	*−25° 11′ . . .	37	8.9	10.4	11.7	13.0	15.6	. .	. .	. .	. .	. .	. .	40 11.92	+ 36.93	18.25	11 40 30.60	1.81
	O. Arg. S. 11656 .	38	23.3	24.6	26.0	27.3	29.9	. .	. .	. .	. .	. .	. .	40 26.22	36.93	18.25	11 40 44.90	1.81
	Weisse (2) 793. .	39	16.3	18.3	19.5	. .	. .	. .	. .	. .	44.8	46.0	48.3	41 32.20	0.04	18.25	11 41 13.99	2.28
	93 Leonis	40	. .	. .	. .	30.3	31.4	32.7	33.9	34.9	. .	. .	. .	41 32.64	0.04	18.25	11 41 14.43	2.28
	*−34° 9′ . . .	41	17.3	18.4	19.8	21.4	24.5	. .	. .	. .	. .	. .	. .	55 20.28	+ 40.34	18.25	11 55 42.37	1.60
	Lacaille 5044 . .	42	47.0	49.2	50.4	0.9	2.1	3.4	4.7	5.7	16.3	17.6	19.9	4 3.38	− 0.26	18.25	12 3 44.87	1.77
	η Virginis . . .	43	16.7	18.8	19.9	29.5	30.5	31.6	32.8	33.9	43.5	44.7	46.7	13 31.69	− 0.09	18.25	. . . .	1.98
	*−28° 57′ . . .	44	36.3	38.6	39.8	50.8	52.0	53.4	54.8	55.9	. .	. .	. .	14 47.70	+ 5.39	18.25	12 14 34.84	+ 1.67
	B. A. C. 4166 . .	45	. .	. .	. .	. .	34.6	44.9	56.5	5.7	40.6	50.5	11.3	16 43.44	− 56.55	18.25	12 15 28.64	− 2.38
	Weisse 510 . .	46	36.1	38.2	39.3	48.9	50.0	51.1	52.3	53.3	2.9	4.0	6.1	31 51.11	− 0.07	18.24	12 31 32.80	+ 1.91
	11 Canum Venat. .	47	36.4	39.4	41.2	55.7	57.3	59.1	0.9	2.3	17.3	18.8	22.2	42 59.15	+ 0.27	18.24	12 42 41.18	1.55
	α Canum Venat. .	48	53.8	56.4	57.9	10.2	11.5	13.0	14.5	16.0	28.3	29.8	32.5	50 13.08	+ 0.18	18.24	. . . .	1.65
	Polaris, S. P. . .	†49	. .	. .	. .	31.0	10.5	56.0	48.5	30.0	. .	. .	. .	. . . .	− 11.52	−18.24	. . . .	+ 48.00

3. Faint.
49. Faint and unsteady.
May 6. Image west 0r.14. Clamp east.
Image west 0r.36. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 5, 11.0	− 25.38	− 0.020	+ 0.35	+ 0.07
10, 12.0	− 18.25	+ 0.010	+ 0.35	− 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 11	ρ Leonis	†1	57.7	59.9	1.0	10.7	11.7	13.0	14.2	15.2	25.0	26.1	28.2	26 12.97	− 0.12	−17.61	10 25 55.24	+ 2.68
Y.	50 Leonis	2	55.4	57.6	58.7	8.7	9.8	11.0	12.3	13.4	23.5	24.5	26.7	32 11.05	0.15	17.61	10 31 53.29	2.75
	42 Ursæ Majoris .	3	56.6	0.6	2.8	22.0	24.2	26.7	29.1	31.1	50.3	52.6	56.8	43 26.62	0.47	17.62	10 43 8.53	3.44
	Weisse (2) 944 .	4	22.7	25.4	26.7	39.0	40.2	41.8	43.3	44.5	56.6	58.2	0.7	47 41.74	0.23	17.62	10 47 23.89	2.91
	Weisse (2) 1112 .	5	9.5	12.3	13.6	25.6	27.0	28.5	30.1	31.2	43.1	44.4	47.0	56 28.39	− 0.23	17.62	10 56 10.54	2.81
	Lacaille 4667 . .	6	55.3	58.0	59.2	11.6	12.9	14.4	16.0	17.2	29.5	30.9	33.7	9 14.43	+ 0.02	17.62	11 8 56.83	1.61
	Lacaille 4672 . .	7	. .	. .	. .	53.4	54.9	56.3	57.8	59.1	11.3	12.7	15.4	10 2.61	− 6.34	17.62	11 9 38.65	1.61
	τ Leonis	8	15.5	17.6	18.7	. .	. .	. .	. .	. .	. .	. .	. .	21 17.27	+ 13.19	17.62	11 21 12.84	2.28
	*+71° 17′ . . .	9	. .	. .	. .	55.0	58.2	1.9	5.7	8.8	. .	. .	. .	30 1.92	− 0.78	17.62	11 29 43.52	2.55
	*+71° 13′ . . .	10	. .	. .	. .	50.7	53.8	57.5	1.3	4.5	. .	. .	. .	30 57.56	0.78	17.62	11 30 39.16	2.52
	β Leonis	11	25.7	27.9	28.9	38.9	40.0	41.2	42.5	43.5	53.4	54.5	56.7	42 41.20	0.14	17.62	11 42 23.44	2.22
	O. Arg. S. 11848 .	12	42.3	44.4	45.6	56.4	57.6	58.7	0.0	1.3	12.0	13.2	15.6	55 58.83	0.02	16.62	11 55 41.19	1.78
	*−9° 54′ . . .	13	. .	. .	. .	. .	. .	. .	51.9	54.3	55.5	56.9	58.1	56 55.34	33.52	17.62	11 56 4.20	+ 1.98
	Groombridge 1860	14	. .	. .	. .	47.5	59.0	19.0	46.0	6.0	19.0	33.0	44.5	12 4.25	4 16.92	17.62	12 7 29.71	− 2.33
	O. Arg. S. 12173 .	15	37.3	40.3	41.6	52.6	53.8	55.1	56.5	57.7	8.7	10.0	12.5	20 55.15	0.01	17.62	12 20 37.52	+ 1.66
	Weisse (2) 602 .	16	46.7	49.3	50.7	2.7	3.9	5.5	7.1	8.4	20.4	21.7	24.4	29 5.53	0.23	17.62	12 28 47.68	1.89
	Weisse 564 . .	17	. .	57.0	58.1	7.7	8.7	9.9	11.1	12.2	21.9	22.9	. .	35 9.94	− 0.10	17.62	12 34 52.22	1.91
	*−36° 31′ . . .	18	10.3	12.8	13.9	. .	. .	. .	. .	. .	. .	. .	. .	37 12.33	+ 16.52	17.62	12 37 11.23	1.50
	*−38° 47′ . . .	19	29.4	32.2	33.5	46.1	47.4	48.9	50.4	51.8	3.8	5.6	8.2	47 48.85	+ 0.02	17.62	12 47 31.25	1.44
	*−14° 17′ . . .	20	15.2	17.4	18.6	28.3	29.4	30.7	31.9	33.0	42.8	43.9	46.2	51 30.67	− 0.05	17.62	12 51 13.00	1.76
	*−36° 42′ . . .	21	23.5	25.7	26.8	39.2	40.4	41.9	43.4	44.5	56.6	57.9	0.6	4 41.86	+ 0.01	17.62	13 4 24.25	1.48
	Lacaille 5454 . .	22	24.8	27.3	28.4	38.7	40.0	41.3	42.6	43.8	54.2	55.4	57.7	7 41.29	− 0.02	17.62	13 7 23.65	1.65
	Weisse 218 . .	23	. .	. .	. .	35.0	36.1	37.3	38.5	39.4	. .	. .	. .	14 37.26	0.09	17.62	13 14 19.55	1.75
	69 Virginis . . .	24	31.7	33.9	35.0	45.0	46.1	47.3	48.6	49.6	59.6	0.7	3.0	20 47.32	0.04	17.62	13 20 29.66	1.70
	O. Arg. S. 12908 .	25	22.0	24.2	25.5	35.9	37.1	38.3	39.6	40.7	51.1	52.4	54.7	23 38.32	− 0.02	17.62	13 23 20.68	1.64
	*−34° 58′ . . .	26	18.3	19.9	21.4	22.8	25.5	. .	39.3	41.7	43.3	44.9	46.4	28 2.35	+ 0.43	17.62	13 27 45.16	1.51
	B. A. C. 4548 . .	27	23.0	25.2	26.4	37.5	38.6	40.0	41.4	42.4	53.6	54.9	57.1	31 40.01	− 0.01	17.62	13 31 22.38	1.59
	Polaris, S. P. . .	28	. .	. .	. .	. .	. .	. .	. .	. .	55.0	45.0	38.0	34 46.00	23 58.06	17.62	. . . .	47.35
	Weisse 694 . .	29	14.0	16.1	17.1	26.9	28.0	29.3	30.5	31.5	41.0	42.3	44.3	41 29.18	0.07	17.62	13 41 11.49	1.68
	Weisse (2) 930 .	30	. .	. .	. .	36.4	37.8	40.5	58.9	1.7	3.1	4.9	6.5	44 53.72	32.39	17.62	13 44 3.71	1.23
	Lacaille 5763 . .	31	8.3	10.6	11.8	22.6	23.8	25.2	26.5	27.6	38.5	39.7	41.9	49 25.14	− 0.01	17.62	13 49 7.51	1.60
	*−38° 36′ . . .	32	25.8	28.3	29.6	41.9	43.1	44.8	46.3	47.7	0.1	1.6	4.0	53 44.84	+ 0.02	17.62	13 53 27.24	1.48
	*− 6° 11′ . . .	33	35.1	36.2	37.4	38.5	39.5	. .	7.4	9.4	10.5	11.9	13.2	2 53.91	− 16.64	17.62	14 2 19.65	1.64
	O. Arg. N. 14432 .	34	. .	. .	. .	49.8	51.5	53.5	55.5	57.0	. .	. .	. .	11 53.46	0.37	17.62	14 11 35.47	0.43
	ι Bootis	35	36.8	40.2	41.9	. .	. .	. .	. .	. .	10.4	12.1	15.5	11 56.15	0.37	17.62	14 11 38.16	0.43
	B. A. C. 4752 . .	36	37.0	. .	42.0	57.6	59.3	1.4	3.3	4.9	20.4	. .	25.6	13 1.28	0.37	17.62	14 12 43.29	0.41
	O. Arg. S. 13584 .	37	45.1	47.3	48.5	58.7	59.8	1.0	2.2	3.3	13.6	14.7	17.0	17 1.02	− 0.03	17.62	14 16 43.37	1.63
	O. Arg. S. 13589 .	38	28.7	30.0	31.3	32.6	35.2	. .	38.7	41.0	42.2	43.8	45.0	17 6.85	+ 0.34	17.62	14 16 49.57	1.63
	*+1° 38′ . . .	39	. .	13.2	14.3	24.0	24.9	26.0	27.1	28.1	37.7	39.0	. .	29 26.05	− 0.09	17.62	14 29 8.34	1.55
	ε Bootis	40	. .	. .	. .	48.5	49.8	52.2	8.7	11.2	12.5	14.1	15.5	40 4.06	29.06	17.62	14 39 17.38	1.14
	Lacaille 6113 . .	41	14.2	16.7	18.0	28.6	29.9	31.4	32.7	33.8	44.9	46.0	48.4	42 31.33	0.01	17.62	14 42 13.70	1.63
	Rumker 4840 . .	42	21.3	23.5	24.5	34.0	35.1	36.4	37.6	38.5	48.3	49.4	51.4	46 36.36	0.09	17.62	14 46 18.65	1.53
	Lacaille 6162 . .	43	27.3	29.7	30.8	41.7	43.0	44.4	45.7	47.0	57.8	59.0	1.5	49 44.35	0.01	17.62	14 49 26.72	1.64
	Weisse (2) 1146 .	44	. .	6.2	7.8	20.4	21.9	23.5	25.1	26.5	38.9	40.3	. .	53 23.40	0.27	17.62	14 53 5.51	0.65
	Σ Cat.Gen.1683, 1st*	45	40.5	42.5	43.6	. .	. .	. .	. .	. .	7.3	8.4	10.5	57 55.47	0.11	17.62	14 57 37.74	1.46
	Σ Cat.Gen.1683, 2d *	46	. .	. .	. .	53.4	54.5	55.7	56.9	57.9	. .	. .	. .	57 55.68	0.11	17.62	14 57 37.95	1.46
	O. Arg. S. 14277 .	47	40.1	42.6	43.8	54.4	55.5	56.8	58.2	59.4	10.1	11.3	13.7	0 56.90	0.02	17.62	15 0 39.26	1.66
	B. A. C. 5027 . .	48	11.0	13.2	15.5	25.1	26.2	27.6	28.9	29.9	40.3	41.5	43.8	9 27.55	0.02	17.62	15 9 9.91	1.67
	O. Arg. S. 14421 .	49	. .	. .	. .	30.5	31.8	34.1	51.3	53.8	55.1	56.7	58.0	10 46.41	− 29.54	−17.62	15 9 59.25	+ 1.68

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 11, 13.2	− 17.62	− 0.002	− 0.17	− 0.09

1. Cloudy.
11^h a. m., May 11. Reduced azimuth correction slightly.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.
May 11	*−31° 51′ . . .	1	13.7	16.2	17.6	28.8	29.9	31.5	32.8	34.0	45.3	46.6	49.1	15 31.41	0.00	−17.62	15 15 13.79	+ 1.68
Y.	Lacaille 6372 . .	2	56.2	58.6	0.0	12.0	13.2	14.8	16.2	17.4	29.4	30.7	33.4	18 14.72	+ 0.01	17.62	15 17 57.11	1.68
	Lacaille 6388 . .	3	49.3	51.9	53.4	5.6	6.8	8.3	10.0	11.2	23.4	24.9	27.4	21 8.38	0.02	17.62	15 20 50.78	1.69
	Lacaille 6410 . .	4	1.9	4.5	5.9	18.1	19.4	20.9	22.3	23.6	35.8	37.1	39.7	24 20.84	0.02	17.62	15 24 3.24	1.70
	B. A. C. 5133 . .	5	15.7	18.3	19.4	30.4	31.6	33.0	34.3	35.5	46.4	47.6	50.1	28 32.94	+ 0.01	17.62	15 28 15.31	1.71
	O. Arg. S. 14787 .	6	47.2	49.6	50.7	0.6	1.6	3.0	4.3	5.4	15.4	16.6	17.8	35 2.93	− 0.04	17.62	15 34 45.27	1.67
	Lalande 28607. .	7	7.4	9.5	10.5	20.4	21.6	22.8	23.9	24.9	34.7	35.8	37.8	36 22.66	0.06	17.62	15 36 4.98	1.62
	O. Arg. S. 14882 .	8	19.7	21.8	22.9	33.1	34.3	35.5	36.7	37.8	48.0	49.1	51.3	40 35.47	0.03	17.62	15 40 17.82	1.70
	O. Arg. S. 41909 .	9	30.5	32.7	33.8	44.0	45.1	46.4	47.6	48.7	58.9	0.1	2.4	41 46.38	0.03	17.62	15 41 28.73	1.70
	*−18° 34′ . . .	10	27.2	29.4	30.5	40.7	41.7	43.0	44.2	45.3	55.5	56.6	58.8	46 42.99	0.03	17.62	15 46 25.34	1.70
	O. Arg. S. 15067 .	11	34.0	36.3	37.4	47.4	48.4	49.8	51.0	52.0	2.2	3.3	5.4	50 49.75	0.04	17.62	15 50 32.09	1.70
	Lalande 29146 .	†12	39.0	41.6	43.0	55.3	56.6	58.1	59.7	0.9	13.2	14.5	17.1	53 58.09	0.25	17.62	15 53 40.22	0.50
	B. A. C. 5333 . .	13	11.9	13.9	15.1	25.4	26.5	27.8	28.9	30.2	40.4	41.5	43.7	58 27.75	0.03	17.63	15 58 10.09	1.73
	O. Arg. S. 15225 .	14	. .	. .	. .	37.9	39.1	41.6	57.3	59.7	0.8	2.2	3.6	59 52.78	− 27.71	17.63	15 59 7.44	1.76
	O. Arg. S. 15227 .	15	10.8	13.3	14.3	24.7	25.8	27.0	28.3	29.5	. .	. .	. .	59 21.71	+ 5.37	17.63	15 59 9.45	1.76
	δ Ophiuchi . . .	16	33.2	35.3	36.4	46.0	47.1	48.3	49.4	50.5	0.0	1.2	3.3	7 48.25	− 0.08	17.63	16 7 30.54	1.57
	*+38° 1′ . . .	17	13.7	16.3	17.5	29.8	31.2	32.8	34.3	35.5	47.7	49.2	51.7	13 32.70	0.25	17.63	16 13 14.82	0.46
13	ε Bootis	18	18.1	20.6	21.7	32.6	33.7	35.1	36.5	37.6	48.5	49.7	52.0	39 35.10	0.21	17.46	. . . .	1.13
	Weisse 787. . .	19	11.2	13.4	14.5	24.2	25.3	26.5	27.7	28.7	38.3	39.4	41.6	43 26.44	0.07	17.46	14 43 8.91	1.58
	Weisse 793. . .	20	. .	. .	. .	. .	. .	. .	19.1	21.5	22.7	24.1	25.3	44 22.54	33.70	17.46	14 43 31.38	1.60
	O. Arg. S. 14094 .	21	58.3	0.5	1.7	12.2	13.2	14.4	15.7	16.8	27.0	28.2	30.5	50 14.41	0.03	17.46	14 49 56.92	1.63
	Weisse (2) 1154 .	22	. .	. .	. .	33.9	. .	. .	. .	40.3	. .	. .	. .	53 37.10	0.33	17.46	14 53 19.31	0.50
	Weisse (2) 1162 .	23	. .	. .	. .	. .	. .	. .	. .	. .	9.7	11.2	14.2	54 11.70	18.73	17.46	14 53 35.51	0.50
	*+43° 52′ . . .	24	. .	. .	. .	29.4	30.8	32.4	34.0	35.8	. .	. .	. .	54 32.48	0.33	17.46	14 54 14.69	0.50
	Weisse (2) 1183 .	25	. .	. .	. .	. .	. .	. .	. .	. .	57.0	59.2	1.8	54 59.33	18.72	17.46	14 54 23.15	0.50
	Weisse 1110 . .	26	49.4	51.8	52.8	2.5	3.6	4.8	5.9	7.0	16.5	17.6	19.7	0 4.69	0.08	17.46	14 59 47.15	1.53
	Weisse 10 . . .	27	46.1	48.2	49.3	58.9	59.9	1.1	2.3	3.3	12.8	14.0	16.2	3 1.10	0.08	17.46	15 2 43.56	1.55
	Dorpat 1914 . .	28	53.7	55.8	57.0	6.6	7.7	8.9	10.1	11.2	21.0	21.9	24.0	5 8.90	0.08	17.46	15 4 51.36	1.55
	δ Bootis	29	14.5	16.9	18.3	29.8	31.1	32.5	33.9	35.1	46.7	48.0	50.7	10 32.50	0.24	17.46	15 10 14.80	0.81
	Lalande 27907 .	30	52.8	55.2	56.2	6.5	7.7	8.9	10.1	11.2	21.7	22.9	25.2	13 8.95	0.02	17.46	15 12 51.47	1.65
	*−13° 20′ . . .	31	40.7	42.9	44.0	53.6	54.8	56.2	57.4	58.4	8.2	9.4	11.6	15 56.11	− 0.05	17.46	15 15 38.60	1.61
	Lacaille 6376 . .	32	56.0	58.5	59.8	11.9	13.2	14.7	16.2	17.5	29.5	30.7	33.2	19 14.65	+ 0.03	17.46	15 18 57.22	1.67
	*−33° 8′ . . .	33	26.8	29.3	30.5	41.9	43.2	44.8	46.2	47.3	58.7	0.1	2.7	22 44.68	+ 0.02	17.46	15 22 27.24	1.68
	ζ^4 Libræ	34	34.8	37.0	38.2	48.1	49.2	50.5	51.8	52.9	2.9	4.0	6.1	25 50.50	− 0.04	17.46	15 25 33.00	1.64
	*−32° 12′ . . .	35	34.0	36.4	37.6	. .	. .	. .	. .	. .	5.5	6.8	9.2	28 51.58	+ 0.02	17.46	15 28 34.14	1.70
	*−32° 9′ . . .	36	51.2	52.3	53.8	55.3	56.6	. .	29.0	31.5	32.9	34.6	35.8	29 13.30	− 19.43	17.46	15 28 36.41	1.70
	τ^6 Serpentis . . .	37	1.3	3.4	4.4	14.5	15.6	16.8	18.0	19.1	29.1	30.4	32.6	35 16.84	0.16	17.46	15 34 59.22	1.21
	Weisse 14851 . .	38	40.7	42.9	44.0	54.3	55.3	56.6	57.8	58.8	9.0	10.3	12.6	38 56.57	0.03	17.46	15 38 39.08	1.67
	ε Serpentis . . .	39	21.4	23.6	24.5	34.2	35.1	36.4	37.7	38.7	48.3	49.4	51.5	44 36.44	0.11	17.46	. . . .	1.42
	4 Scorpii	40	38.0	40.3	41.5	52.2	53.3	54.7	56.0	57.1	8.0	9.1	11.4	47 54.69	− 0.01	17.46	15 47 37.22	1.73
	B. A. C. 5297 . .	41	33.9	36.4	37.5	48.6	49.8	51.1	52.5	53.7	4.7	5.9	8.3	51 51.13	+ 0.01	17.46	15 51 33.68	1.79
	O. Arg. S. 15147 .	42	10.3	12.6	13.9	24.3	25.5	26.7	28.0	29.1	39.6	41.0	43.2	55 26.75	− 0.01	17.46	15 55 9.28	1.73
	O. Arg. S. 15040 .	43	46.8	48.9	50.2	. .	. .	. .	. .	. .	15.5	16.7	18.8	0 2.82	0.03	17.46	15 59 45.33	1.72
	O. Arg. S. 15042 .	44	2.2	3.5	4.9	6.0	7.2	. .	36.6	38.9	40.2	41.6	42.9	0 22.40	17.62	17.46	15 59 47.32	1.72
	48 Serpentis . . .	45	36.5	38.8	39.8	49.7	50.8	52.1	53.3	54.4	4.4	5.7	7.9	5 52.13	− 0.16	17.46	16 5 34.51	1.17
	Lalande 29766 .	46	54.1	55.5	57.1	58.8	1.7	. .	. .	. .	. .	. .	. .	13 57.44	+ 42.47	17.46	16 14 22.45	0.44
	*+38° 1′ . . .	47	13.5	16.2	17.6	29.8	31.0	32.6	34.1	35.4	. .	. .	. .	13 26.28	+ 6.03	17.46	16 13 14.85	+ 0.44
	η Draconis . . .	48	. .	. .	. .	29.0	31.5	33.8	36.6	38.4	59.0	1.1	5.6	22 44.38	− 11.09	17.46	16 22 15.83	− 2.31
	ζ Ophiuchi . . .	49	. .	. .	. .	28.0	29.2	31.3	46.1	48.4	49.6	51.0	52.3	30 41.99	− 26.06	−17.46	. . . .	+ 1.64

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 13, 15.6	− 17.46	+ 0.003	− 0.20	− 0.09

12. Seconds obtained from observation of June 17, 1868.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 15	42 Ursæ Majoris . .	1	55.6	59.7	1.9	21.0	23.1	25.6	27.9	29.9	49.1	51.3	55.7	43 25.53	— 0.53	—16.43	10 43 8.57	+ 3.56
Y.	B. A. C. 3726 . .	2	32.1	34.2	35.2	44.9	45.9	47.1	48.4	49.4	59.0	0.1	2.1	45 47.13	0.10	16.43	10 45 30.60	2.50
	δ Leonis	3	9.5	11.8	12.9	23.2	24.3	25.6	26.9	27.9	38.3	39.4	41.7	7 25.59	0.18	16.42	11 7 8.99	2.60
	Rumker 3497 . .	4	28.0	32.5	34.5	54.4	56.8	59.2	1.6	3.7	23.4	25.9	30.1	9 59.10	0.55	16.42	11 9 42.13	3.08
	*+71° 17′ . . .	5	. .	. .	. .	53.4	57.0	0.6	4.7	7.6	. .	. .	. .	30 0.66	0.87	16.42	11 29 43.37	2.75
	*+71° 13′ . . .	6	. .	. .	. .	49.5	52.5	56.2	0.1	3.2	. .	. .	. .	30 56.30	0.87	16.42	11 30 39.01	+ 2.72
	Groombridge 1860	7	. .	. .	. .	27.0	37.0	49.5	1.0	11.0	. .	. .	. .	7 49.10	2.88	16.41	12 7 29.81	— 0.91
	*—25° 53′ . . .	8	4.8	7.1	8.4	19.0	20.1	21.6	22.8	23.9	34.7	35.8	38.3	14 21.50	0.01	16.41	12 14 5.08	+ 1.76
	O. Arg. S. 12101 .	9	. .	. .	. .	58.3	59.5	1.7	18.0	20.3	21.7	23.1	24.5	15 13.39	28.46	16.41	12 14 28.52	1.76
	B. A. C. 4184 . .	10	. .	42.7	44.0	54.7	55.8	57.2	58.4	59.6	10.2	11.4	. .	18 57.11	0.19	16.41	12 18 40.51	2.06
	*—35° 16′ . . .	11	. .	. .	. .	34.1	35.7	36.9	38.4	39.4	50.9	52.2	55.0	22 42.82	— 6.06	16.41	12 22 20.35	1.58
	*—32° 30′ . . .	12	46.1	48.5	49.9	1.1	2.3	3.8	5.2	6.3	17.9	19.0	21.8	27 3.81	+ 0.02	16.40	12 26 47.43	1.63
	Lacaille 5254 . .	13	16.7	19.5	20.8	33.3	34.7	36.2	37.7	39.0	51.5	52.8	55.6	36 36.16	+ 0.05	16.40	12 36 19.81	1.47
	28 Comæ	14	56.0	57.2	58.5	59.7	0.7	. .	29.1	31.2	32.4	34.0	35.1	42 15.39	— 17.15	16.40	12 41 41.84	1.91
	B. A. C. 4331 . .	15	39.0	41.9	43.2	56.7	58.0	59.8	1.2	2.7	15.8	17.4	20.5	48 59.65	+ 0.07	16.40	12 48 43.32	1.36
	Lacaille 5342 . .	16	47.2	49.9	51.2	3.4	4.8	6.3	7.7	9.2	21.6	23.0	25.5	51 6.35	0.04	16.40	12 50 49.99	1.49
	B. A. C. 4405 . .	17	. .	42.7	44.3	57.2	58.5	0.0	1.4	2.9	15.7	17.3	. .	4 0.00	+ 0.06	16.39	13 3 43.67	1.41
	B. A. C. 4423 . .	18	. .	. .	. .	17.2	18.5	19.7	20.8	21.9	31.7	32.8	35.0	6 24.70	— 5.23	16.39	13 6 3.08	1.78
	O. Arg. S. 12733 .	19	52.2	54.3	55.4	6.9	8.0	9.4	10.7	12.0	22.9	24.3	26.5	8 9.33	+ 0.01	16.39	13 7 52.95	1.51
	Weisse 181. . .	20	13.6	15.5	16.6	26.2	27.2	28.4	29.7	30.8	40.2	41.3	43.3	12 28.44	— 0.08	16.39	13 12 11.97	1.77
	B. A. C. 4455 . .	21	. .	. .	. .	20.1	21.3	23.5	38.5	40.8	41.9	43.4	44.7	13 34.28	26.12	16.39	13 12 51.77	1.75
	O. Arg. N. 13647 .	22	57.7	2.6	4.6	25.4	27.5	. .	32.6	34.8	55.4	58.0	1.7	22 30.03	— 0.57	16.39	13 22 13.07	0.48
	*—36° 53′ . . .	23	30.4	33.0	34.2	46.3	47.7	49.0	50.6	51.8	3.8	5.1	7.9	27 49.07	+ 0.04	16.39	13 27 32.72	1.50
	83 Virginis . . .	24	28.4	30.6	31.7	41.6	42.7	44.0	45.2	46.3	56.0	57.3	59.5	37 43.94	— 0.04	16.38	13 37 27.52	1.68
	O. Arg. S. 13158 .	25	48.1	50.5	51.7	2.0	3.2	4.4	5.7	6.8	17.1	18.3	20.7	42 4.41	— 0.02	16.38	13 41 48.01	1.64
	Lacaille 5699 . .	26	. .	55.3	56.6	7.6	9.0	10.4	11.9	13.1	24.1	25.4	. .	43 10.38	+ 0.01	16.38	13 42 54.01	1.58
	η Bootis	27	28.8	30.9	32.2	42.2	43.4	44.7	46.0	47.2	57.3	58.5	0.6	48 44.71	— 0.17	16.38	13 48 28.16	1.52
	Lalande 25674. .	28	14.8	17.2	18.4	28.8	30.0	31.3	32.7	33.8	44.0	45.4	47.7	51 31.28	0.19	16.38	13 51 14.71	1.45
	O. Arg. S. 13438 .	29	. .	. .	. .	8.7	9.9	11.2	12.5	13.7	24.5	25.6	27.8	4 16.74	5.54	16.38	14 3 54.82	1.61
	Weisse 209. . .	30	52.4	54.5	55.5	5.1	6.3	7.4	8.7	9.7	19.2	20.4	22.5	13 7.43	0.08	16.38	14 12 50.97	1.61
	*+49° 26′ . . .	†31	. .	. .	. .	. .	. .	. .	. .	. .	34.5	36.5	39.5	23 36.83	20.77	16.37	14 22 59.69	0.47
	*+ 0° 11′ . . .	32	58.0	59.9	1.0	10.7	11.7	12.9	14.1	15.2	24.8	25.8	27.9	39 12.91	0.09	16.37	14 38 56.45	1.53
	Weisse 748 . .	33	54.2	56.2	57.3	7.0	8.1	9.3	10.5	11.4	21.0	22.2	24.3	41 9.23	0.09	16.37	14 40 52.77	1.53
	α^2 Libræ	34	40.6	42.8	43.9	53.8	54.8	56.1	57.3	58.3	8.6	9.8	11.8	43 56.16	0.04	16.37	14 43 39.75	+ 1.61
	β Ursæ Minoris . .	35	31.5	39.2	43.0	19.7	23.7	28.0	33.0	36.7	12.7	17.1	25.0	51 28.14	— 1.07	16.37	14 51 10.70	— 3.96
	*—31° 56′ . . .	36	47.0	49.3	50.6	1.8	3.0	4.4	5.8	7.0	18.6	19.8	22.2	59 4.50	+ 0.02	16.36	14 58 48.16	+ 1.62
	*—31° 59′ . . .	37	26.4	28.7	29.8	58.0	59.3	1.5	19.4	22.0	23.5	25.1	26.3	2 1.82	— 17.64	16.36	15 1 27.82	1.62
	δ Bootis	38	13.5	15.9	17.2	28.9	30.2	31.6	32.9	34.1	45.6	47.0	49.3	10 31.47	— 0.25	16.36	15 10 14.86	0.82
	Lacaille 6354 . .	39	19.6	22.2	23.6	35.4	36.6	38.0	39.5	40.6	52.3	53.6	56.0	15 37.95	+ 0.03	16.36	15 15 21.62	1.97
	O. Arg. S. 14548 .	40	56.7	59.0	0.3	11.0	12.2	13.6	14.8	16.0	26.9	28.2	30.5	19 13.56	0.00	16.36	15 18 57.20	1.65
	B. A. C. 5109 . .	41	7.7	10.0	11.2	21.1	22.3	23.6	24.8	25.8	36.1	37.2	39.4	25 23.56	— 0.03	16.36	15 25 7.17	1.64
	ζ^4 Libræ	42	. .	. .	. .	. .	. .	. .	20.4	22.8	24.0	25.6	26.8	26 23.92	— 34.40	16.36	15 25 33.16	1.62
	*—32° 3′ . . .	43	17.6	19.9	21.2	32.6	33.8	35.1	36.5	37.6	49.1	50.3	53.0	29 35.15	+ 0.02	16.35	15 29 18.82	1.68
	Lalande 28641. .	44	35.5	38.1	39.5	51.5	52.8	54.4	56.0	57.1	9.3	10.6	13.3	35 54.37	— 0.27	16.35	15 35 37.75	0.56
	O. Arg. S, 14835 .	45	46.5	48.7	50.0	0.5	1.7	3.0	4.2	5.3	15.9	17.2	19.3	38 2.94	— 0.02	16.35	15 37 46.57	1.67
	Lacaille 6555 . .	46	16.9	19.3	20.6	32.1	33.3	34.7	36.2	37.4	48.8	50.0	52.4	43 34.70	+ 0.02	16.35	15 43 18.37	1.71
	*—18° 34′ . . .	47	25.8	28.0	29.2	39.5	40.5	41.8	43.0	44.1	54.2	55.4	57.6	46 41.74	— 0.03	16.35	15 46 25.36	1.66
	Weisse 976 . .	†48	27.1	29.5	30.6	40.5	41.7	42.8	44.1	45.3	. .	. .	. .	52 37.70	+ 5.01	16.35	15 52 26.36	1.60
	Weisse 1057 . .	49	. .	. .	. .	46.7	47.8	49.1	50.4	51.4	. .	. .	. .	56 49.08	— 0.14	16.35	15 56 32.59	1.28
	Lalande 29306. .	50	45.7	48.0	49.2	59.1	0.2	1.5	2.8	3.8	14.0	15.1	17.3	0 1.52	0.04	16.35	15 59 45.13	1.67
	κ Herculis . . .	51	12.1	14.2	15.4	. .	. .	. .	59.4	1.7	3.0	4.4	5.7	2 44.49	— 16.53	—16.35	16 2 11.61	+ 1.15

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 15, 13.9	— 16.38	+ 0.016	— 0.20	— 0.09

31. Very faint.
48. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. May 15 Y.	B. A. C. 5368	1	. .	. .	. .	26.2	27.1	28.3	29.6	30.8	. .	. .	. .	2 28.40	− 0.16	−16.35	16 2 11.89	+ 1.15
	δ Ophiuchi	2	32.1	34.1	35.0	44.7	45.8	47.0	48.2	49.3	58.9	0.1	2.0	7 47.02	0.08	16.34	16 7 30.60	1.52
	*+37° 46′	3	30.4	31.5	32.9	33.4	34.9	. .	10.6	13.3	14.8	16.6	18.1	13 53.65	21.12	16.34	16 13 16.19	0.43
	Lalande 29766	4	. .	. .	. .	. .	. .	. .	17.1	19.8	21.4	23.3	24.6	15 21.24	42.15	16.34	16 14 22.75	0.41
17 E.	δ Leonis	5	8.8	11.1	12.3	22.6	23.6	25.0	26.3	27.4	37.7	38.9	41.0	7 24.97	0.18	15.89	. . . .	2.62
	Weisse 137	6	2.0	3.9	5.0	14.7	15.7	16.9	18.1	19.1	28.7	29.9	31.9	10 16.90	0.08	15.89	11 10 0.93	2.33
	*+8° 40′	7	. .	49.0	50.1	59.9	0.9	2.0	3.3	4.2	14.0	15.0	. .	56 2.04	0.12	15.89	11 55 46.03	2.18
	Weisse 947	8	. .	6.9	8.0	. .	. .	. .	. .	. .	32.0	33.2	. .	56 20.02	0.13	15.89	11 56 4.00	2.18
	o Virginis	9	34.0	36.1	37.1	46.8	47.9	49.0	50.3	51.4	0.9	2.1	4.2	58 49.07	− 0.13	15.89	. . . .	2.11
	c Virginis	10	22.4	23.6	24.9	26.2	28.5	. .	. .	. .	. .	. .	. .	13 25.12	+ 33.63	15.89	12 13 42.86	2.06
	Lacaille 5109	11	9.5	12.3	13.4	26.4	27.9	29.4	31.1	32.4	45.4	46.7	49.6	14 29.46	+ 0.06	15.89	12 14 13.63	1.46
	Weisse (2) 320	12	59.9	2.1	3.3	14.2	15.4	16.7	18.0	19.1	29.9	31.1	33.5	16 16.65	− 0.21	15.89	12 16 0.55	2.10
	4 Cañum Venat.	13	. .	. .	. .	34.2	35.4	37.0	38.6	40.0	. .	. .	. .	17 37.04	0.32	15.89	12 17 20.83	2.04
	Lacaille 5144	14	. .	. .	. .	42.2	43.4	44.4	45.8	46.9	57.8	59.0	1.2	18 50.09	− 5.59	15.89	12 18 28.61	1.75
	*−37° 12′	15	54.7	57.3	58.6	10.7	12.0	13.6	15.1	16.3	28.4	29.8	32.4	22 13.54	+ 0.04	15.89	12 21 57.69	1.56
	*−36° 28′	16	8.6	11.4	12.4	24.4	. .	27.2	. .	30.0	42.0	43.2	45.9	37 27.23	+ 0.04	15.89	12 37 11.38	1.55
	*+14° 15′	17	. .	. .	. .	49.9	51.0	53.0	8.4	10.5	11.9	13.2	14.4	39 4.04	− 26.53	15.89	12 38 21.62	1.95
	Lacaille 5291	18	25.5	28.0	29.4	40.8	42.2	43.7	45.2	46.3	57.9	59.1	1.6	42 43.61	+ 0.03	15.89	12 42 27.75	1.59
	Weisse 835	19	24.1	25.5	26.8	28.0	30.5	. .	. .	. .	. .	. .	. .	49 26.98	33.56	15.89	12 49 44.65	1.87
	*−32° 24′	20	19.8	22.2	23.4	34.9	36.0	37.4	38.9	40.2	51.4	52.7	55.1	50 37.45	+ 0.02	15.89	12 50 21.58	1.60
	Lacaille 5428	21	33.0	35.2	36.4	47.0	48.4	49.6	51.0	52.1	2.7	3.9	6.3	4 49.60	− 0.01	15.89	13 4 33.70	1.67
	B. A. C. 4433	22	. .	. .	. .	. .	. .	. .	43.0	45.9	47.5	49.4	50.8	8 47.32	− 43.87	15.89	13 7 47.56	1.52
	O. Arg. S. 12802	23	18.9	21.0	22.3	33.2	34.3	35.6	36.9	38.1	48.9	50.1	52.5	13 35.62	0.00	15.89	13 13 19.73	1.64
	Lacaille 5553	24	49.3	51.6	53.0	3.5	4.8	6.0	7.3	8.5	19.3	20.4	22.7	21 6.04	0.00	15.89	13 20 50.15	1.64
	*−34° 29′	25	14.2	16.4	17.7	29.9	31.0	32.4	34.0	35.2	46.7	48.0	50.5	24 32.36	+ 0.03	15.89	13 24 16.50	1.54
	Polaris, S. P.	26	. .	. .	. .	. .	. .	. .	24.5	3.5	54.0	45.0	37.5	33 44.90	−22 55.08	15.89	. . . .	43.85
	*−30° 17′	27	59.2	0.6	2.3	3.6	6.4	24.0	26.4	27.6	. .	. .	. .	50 11.26	+ 30.14	15.89	13 50 25.51	1.58
	*−36° 43′	28	9.5	11.7	13.5	25.5	27.0	28.4	29.8	31.2	43.0	44.4	46.9	51 28.26	+ 0.04	15.89	13 51 12.41	+ 1.51
	*+75° 27′	29	. .	. .	. .	56.7	0.1	5.0	10.3	14.0	. .	. .	. .	55 5.22	− 1.13	15.89	13 54 48.20	− 2.58
	*+75° 25′	30	. .	. .	. .	44.5	48.2	52.8	57.6	2.0	. .	. .	. .	55 53.02	1.13	15.89	13 55 36.00	− 2.59
	O. Arg. S. 13432	31	. .	. .	. .	44.4	45.6	46.9	48.2	49.3	. .	. .	. .	3 52.38	5.48	15.89	14 3 31.01	+ 1.61
	α Bootis	32	42.9	45.0	46.1	56.3	57.4	58.7	0.0	1.1	11.4	12.5	14.6	9 58.73	0.17	15.89	. . . .	1.34
20 Y.	o Virginis	33	34.4	36.5	37.5	47.2	48.3	49.5	50.8	51.7	1.4	2.6	4.7	58 49.51	− 0.12	16.34	11 58 33.05	2.14
	*−39° 49′	†34	57.8	0.2	1.5	. .	. .	. .	. .	. .	32.3	33.7	36.1	4 16.93	+ 0.02	16.34	12 4 0.61	+ 1.58
	B. A. C. 4166	35	. .	. .	. .	23.5	34.0	46.0	57.5	7.0	. .	. .	. .	15 45.60	− 2.42	16.34	12 15 26.84	− 0.79
	*−29° 24′	36	. .	. .	. .	25.3	26.4	27.7	29.0	30.1	. .	. .	. .	27 27.70	0.01	16.34	12 27 11.35	+ 1.72
	O. Arg. S. 12258	37	. .	. .	. .	37.7	38.9	41.3	57.6	59.9	1.3	2.8	4.1	28 52.95	0.02	16.34	12 28 36.59	+ 1.77
	B. A. C. 4281	38	. .	. .	. .	22.5	34.0	45.0	57.0	8.0	. .	. .	. .	37 45.30	2.54	16.34	12 37 26.42	− 3.23
	O. Arg. S. 12444	39	7.2	9.3	10.5	21.3	22.4	23.6	25.0	26.1	36.8	37.8	39.8	42 23.62	− 0.02	16.34	12 42 7.26	+ 1.74
	Lacaille 5320	40	47.6	50.3	51.7	4.4	5.7	7.5	9.1	10.5	23.3	24.8	27.6	48 7.50	+ 0.03	16.34	12 47 51.19	1.46
	*−39° 19′	41	38.8	41.2	42.5	55.2	56.5	58.0	59.5	0.9	13.4	14.7	17.4	51 58.01	0.02	16.34	12 51 41.69	1.51
	Polaris, S. P.	42	23.5	47.0	36.0	. .	. .	. .	. .	. .	. .	. .	. .	1 35.50	+ 9 16.31	16.34	. . . .	42.23
	62 Virginis	43	29.9	32.1	33.2	42.9	44.0	45.1	46.4	47.4	57.3	58.4	0.5	13 45.20	− 0.06	16.35	13 13 28.79	1.73
	α Virginis	44	20.4	22.3	23.4	33.2	34.4	35.6	36.9	37.8	47.6	48.6	50.7	18 35.54	0.06	16.35	13 18 19.13	1.75
	Weisse 318	45	49.5	51.7	52.8	2.4	3.5	4.6	5.8	6.8	16.4	17.4	19.7	21 4.60	− 0.09	16.35	13 20 48.16	1.76
	Weisse 458	46	11.3	13.4	14.4	24.1	25.2	26.3	27.5	28.6	. .	. .	. .	28 21.35	+ 4.89	16.35	13 28 9.89	1.72
	Weisse 461	47	. .	. .	. .	. .	. .	. .	10.1	12.4	13.6	15.0	16.2	29 13.46	− 33.33	16.35	13 28 23.78	1.71
	Weisse 472	48	. .	. .	. .	. .	. .	. .	28.2	30.5	31.7	33.2	34.5	29 31.62	33.34	16.35	13 28 41.93	1.71
	O. Arg. S. 13149	49	7.7	10.3	11.4	22.6	23.9	25.2	26.6	27.8	38.8	40.0	42.5	41 25.16	0.01	16.35	13 41 8.80	1.59
	*−35° 56′	50	. .	. .	. .	17.8	19.1	20.6	22.2	23.4	35.2	36.5	39.2	42 26.75	− 6.14	−16.35	13 42 4.26	+ 1.52

34. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 17, 12.4	− 15.89	0.00	− 0.20	− 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
May 20 Y.	Rumker 4483 . .	1	33.0	35.2	36.2	46.0	47.1	48.3	49.6	50.5	0.4	1.6	3.8	44 48.34	− 0.13	−16.35	13 44 31.86	+ 1.51
	*+66° 39′ . . .	2	28.3	33.6	36.4	0.7	3.2	6.4	9.2	12.0	36.3	38.9	44.0	47 6.27	− 0.60	16.35	13 46 49.32	− 0.37
	*−35° 32′ . . .	3	37.2	39.7	40.9	52.8	54.1	55.6	56.9	58.2	10.2	11.4	14.0	54 55.55	+ 0.01	16.35	13 54 39.21	+ 1.53
	*− 6° 9′ . . .	4	33.9	35.0	36.2	37.4	38.5	. .	5.9	8.1	9.4	10.8	12.0	2 52.72	− 16.63	16.35	14 2 19.74	1.63
	Weisse (2) 245 .	5	2.2	5.1	6.6	19.3	20.8	22.3	23.9	25.2	37.8	39.3	42.1	12 22.24	0.26	16.35	14 12 5.63	0.95
	ε Bootis	6	. .	. .	. .	. .	. .	. .	7.6	10.0	11.3	12.9	14.3	40 11.22	37.40	16.35	14 39 17.47	1.12
	59 Hydræ	7	55.9	58.2	59.3	10.2	11.3	12.6	13.9	14.9	25.9	27.2	29.6	51 12.64	0.02	16.35	14 50 56.27	+ 1.59
	Groombridge 2210	8	. .	. .	. .	37.0	54.0	14.0	34.0	49.5	. .	. .	. .	56 13.70	4.09	16.35	14 55 53.26	− 16.61
	B. A. C. 4982 . .	9	. .	. .	. .	30.0	38.0	47.5	58.0	5.5	. .	. .	. .	59 47.80	2.05	16.35	14 59 29.40	− 12.26
	b Bootis	10	. .	. .	. .	15.8	17.1	19.3	35.8	38.3	39.6	41.1	42.4	3 31.18	28.83	16.35	15 2 46.00	+ 1.03
	β Libræ	11	0.7	2.7	3.8	13.6	14.6	15.8	16.9	18.1	27.7	28.9	31.0	10 15.80	0.06	16.35	15 9 59.39	1.54
	Lalande 27880. .	12	1.5	3.6	4.8	14.9	16.0	17.3	18.7	19.7	29.9	31.0	32.1	12 17.23	0.04	16.35	15 12 0.84	1.59
	*−13° 20′ . . .	13	39.5	41.7	42.8	52.6	. .	54.9	. .	57.2	7.2	8.3	10.5	15 54.97	0.05	16.36	15 15 38.56	1.56
	ε Libræ	14	8.9	10.9	11.9	21.8	22.9	24.2	25.4	26.4	36.0	37.1	39.4	17 24.08	0.06	16.36	15 17 7.66	1.54
	*−31° 51′ . . .	15	18.6	21.2	22.3	33.6	34.8	36.3	37.6	39.0	50.3	51.7	54.1	22 36.32	0.00	16.36	15 22 19.96	1.62
	ν¹ Bootis	16	11.8	14.6	16.0	28.6	30.0	31.6	33.4	34.7	47.5	48.9	51.8	26 31.54	0.26	16.36	15 26 14.92	0.41
	*−32° 3′ . . .	18	17.6	20.0	21.3	32.6	33.8	35.2	36.5	37.7	49.3	50.6	52.9	29 35.23	0.00	16.36	15 29 18.87	1.63
	Lalande 28641. .	18	35.4	38.0	39.4	51.5	52.8	54.3	55.8	57.0	9.2	10.7	13.2	35 54.30	0.24	16.36	15 35 37.70	0.54
	ε Serpentis . . .	19	20.3	22.4	23.3	32.9	34.0	35.3	36.6	37.5	47.1	48.3	50.3	44 35.27	0.10	16.36	15 44 18.81	1.36
	κ Coronæ Borealis .	20	17.4	20.1	21.5	33.4	34.6	36.1	37.7	38.9	50.8	52.1	54.6	46 36.11	0.23	16.36	15 46 19.52	0.55
22	8 Draconis . . .	21	55.8	0.3	3.3	27.0	29.4	32.4	35.5	38.1	1.5	4.1	9.7	50 32.46	0.79	15.05	12 50 16.62	1.02
	θ Virginis . . .	22	11.4	13.5	14.6	24.4	. .	26.6	. .	28.6	38.4	39.6	41.7	3 26.53	− 0.07	15.04	. . . .	1.83
	Polaris, S. P. . .	23	. .	. .	. .	7.0	47.5	38.5	26.0	10.0	. .	. .	. .	10 37.80	+ 14.04	15.03	. . . .	40.87
	Weisse (2) 866. .	24	18.1	20.8	22.1	34.5	35.8	37.4	39.1	40.4	52.3	53.8	56.6	42 37.35	− 0.32	15.01	13 42 22.02	1.29
	Lacaille 6099 . .	25	1.8	4.0	5.2	15.9	17.3	18.7	19.9	21.1	31.9	33.2	35.5	40 18.59	+ 0.03	14.97	14 40 3.65	1.59
	Weisse 748. . .	26	. .	. .	. .	19.7	21.0	23.1	37.8	40.0	41.1	42.4	43.7	41 33.60	− 25.66	14.97	14 40 52.97	1.51
	58 Hydræ	27	35.9	38.5	39.7	50.4	51.7	53.0	54.4	55.5	6.3	7.4	9.8	42 52.96	+ 0.03	14.97	14 42 38.02	1.58
	*+37° 8′ . . .	28	34.0	36.6	37.8	50.0	51.2	53.0	54.5	55.8	7.5	8.9	11.8	44 52.83	− 0.31	14.97	14 44 37.55	0.83
	59 Hydræ	29	54.5	56.8	57.9	8.8	10.0	. .	12.7	13.7	24.6	25.8	28.1	51 11.29	+ 0.03	14.97	14 50 56.35	1.58
	β Libræ	30	59.1	1.4	2.5	12.0	12.9	14.3	15.6	16.7	26.3	27.2	29.3	10 14.30	− 0.05	14.95	. . . .	+ 1.53
	B. A. C. 5064 . .	31	16.4	19.7	21.3	36.6	38.3	40.1	41.8	43.6	58.7	0.4	3.6	15 40.05	0.45	14.95	15 15 24.65	− 0.07
	ι Draconis . . .	32	49.3	53.4	55.7	14.8	16.7	19.0	21.3	23.5	42.4	44.6	48.5	22 19.02	6.60	14.95	15 22 3.47	0.92
	Radcliffe 3398 . .	33	25.1	28.8	30.6	47.6	49.5	51.8	53.9	55.4	12.6	14.6	18.1	25 51.64	− 0.53	14.95	15 25 36.16	− 0.56
	B. A. C. 5142 . .	34	15.4	17.6	18.8	29.4	30.6	32.0	33.4	34.5	45.3	46.4	48.7	29 32.01	+ 0.03	14.94	15 29 17.10	+ 1.61
	O. Arg. N. 15839 .	35	. .	. .	. .	38.7	41.8	45.4	48.5	51.7	. .	. .	. .	57 45.22	− 0.95	14.91	15 57 29.36	− 3.40
	O. Arg. N. 15864 .	36	14.0	19.6	22.7	51.0	54.0	57.4	1.1	4.0	32.6	35.7	42.2	58 57.66	0.96	14.91	15 58 41.79	− 3.43
	δ Ophiuchi . . .	37	30.7	32.7	33.8	43.4	44.5	45.6	46.8	47.9	57.6	58.7	0.7	7 45.67	0.08	14.90	. . . .	+ 1.44
25	η Virginis	38	10.3	12.4	13.5	23.0	24.2	25.4	26.6	27.7	37.2	38.3	40.4	13 25.36	0.09	12.06	12 13 13.21	2.10
	O. Arg. S. 12254 .	39	53.4	55.6	56.7	7.1	8.3	9.6	10.9	11.9	22.3	23.4	25.7	28 9.54	0.12	12.05	12 27 57.37	1.85
	O. Arg. S. 12523 .	40	37.5	39.9	41.1	51.8	53.0	54.2	55.6	56.7	7.4	8.7	11.2	48 54.28	0.12	12.03	12 48 42.13	1.75
	Weisse 857. . .	41	1.6	3.8	4.7	14.7	15.8	17.1	18.3	19.4	29.2	30.4	32.6	51 17.05	0.10	12.03	12 51 4.92	1.85
	θ Virginis . . .	42	8.5	10.7	11.7	21.2	22.4	23.5	24.8	25.7	35.5	36.6	38.6	3 23.56	− 0.09	12.02	13 3 11.45	1.86
	Polaris, S. P. . .	43	. .	. .	. .	20.0	58.0	50.0	38.0	22.0	. .	. .	. .	10 49.60	+ 1.61	12.01	. . . .	38.50
	*−26° 36′ . . .	†44	. .	. .	. .	58.4	59.7	1.9	18.3	20.4	22.0	23.4	24.7	29 13.60	− 28.72	11.99	13 28 32.89	1.66
	Weisse (2) 894. .	45	50.8	52.9	54.2	4.7	5.9	7.1	8.4	9.4	19.8	21.0	23.4	43 7.05	0.08	11.98	13 42 54.99	1.65
	Weisse 731 . .	46	. .	. .	. .	. .	. .	. .	4.6	6.8	8.1	9.5	10.7	44 7.94	33.86	11.98	13 43 22.10	1.69
	Weisse (2) 984. .	47	4.8	7.5	8.7	20.6	21.8	23.4	24.9	26.1	38.1	39.5	42.1	46 23.41	0.08	11.98	13 46 11.35	1.32
	*−35° 32′ . . .	48	33.0	35.5	36.6	48.5	49.8	51.3	52.7	54.2	5.9	7.2	9.9	54 51.33	0.14	11.97	13 54 39.22	1.54
	α Bootis	49	38.7	41.0	42.1	52.2	53.4	54.7	56.0	57.1	7.2	8.4	10.6	9 54.67	0.08	11.96	14 9 42.63	1.38
	Lacaille 6100 . .	50	23.2	25.6	26.9	38.9	40.1	41.7	43.2	44.4	56.1	57.5	0.1	40 41.61	− 0.14	−11.93	14 40 29.54	+ 1.54

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
May 20, 14.2	− 16.35	− 0.005	− 0.16	− 0.09
22, 14.8	− 14.97	+ 0.040	− 0.25	− 0.09

44. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. May 25 Y.	Weisse (2) 936 .	1	. .	43.8	44.9	56.9	58.3	59.7	1.3	2.5	14.6	16.0	. .	43 59.78	— 0.08	—11.93	14 43 47.77	+ 0.86
	*+43° 52′ . . .	2	. .	. .	. .	18.0	19.6	21.3	22.8	24.3	. .	. .	. .	54 21.20	0.08	11.92	14 54 9.20	0.51
	Weisse 1072 . .	3	45.9	48.1	49.2	. .	. .	. .	. .	. .	13.3	14.4	16.6	58 1.25	0.10	11.92	14 57 49.23	1.54
	O. Arg. S. 14435 .	4	58.5	59.7	1.0	2.5	3.7	. .	35.6	38.3	39.6	41.1	42.5	11 20.25	19.22	11.90	15 10 49.13	1.58
	*−24° 31′ . . .	†5	. .	. .	. .	. .	. .	. .	17.4	19.5	20.9	22.4	23.6	13 20.76	36.36	11.90	15 12 32.50	1.58
	O. Arg. S. 14508 .	6	. .	45.2	46.4	57.3	58.5	59.7	1.1	2.4	12.8	14.3	. .	15 59.74	0.12	11.90	15 15 47.72	1.58
	Radcliffe 3387 . .	7	48.2	51.1	52.4	6.0	7.6	9.1	10.7	12.2	25.6	27.2	30.2	22 9.12	0.08	11.89	15 21 57.15	0.27
	Lalande 28347. .	8	18.2	20.9	22.1	34.1	. .	37.0	. .	39.9	51.8	53.3	55.9	26 37.02	0.08	11.89	15 26 25.05	0.58
	*−22° 10′ . . .	†9	. .	. .	. .	38.8	40.0	42.1	57.9	0.1	. .	. .	. .	29 47.78	21.96	11.89	15 29 13.93	1.57
	*−17° 17′ . . .	10	35.1	37.3	38.5	48.3	49.7	51.0	52.2	53.2	3.5	4.7	6.8	35 50.94	0.11	11.88	15 35 38.95	1.55
	O. Arg. S. 14855 .	11	53.4	55.6	56.7	7.5	8.7	10.0	11.2	12.3	23.2	24.3	26.4	39 9.94	0.12	11.88	15 38 57.94	1.59
	O. Arg. S. 14861 .	12	. .	. .	. .	36.9	38.1	40.3	56.5	59.2	0.3	1.7	3.1	39 52.01	28.48	11.88	15 39 11.65	1.59
	B. A. C. 5258 . .	13	29.0	31.4	32.6	43.3	44.5	45.8	47.2	48.4	59.1	0.3	2.8	46 45.85	0.12	11.87	15 46 33.86	1.60
	4 Scorpii	14	32.5	34.9	. .	46.8	48.0	49.3	50.6	51.7	. .	3.7	6.0	47 49.28	0.12	11.87	15 47 37.29	1.60
	ε Coronæ Borealis .	15	6.5	8.9	10.1	21.0	22.2	23.5	24.7	26.0	36.7	38.0	40.4	52 23.45	0.08	11.86	15 52 11.51	0.81
	O. Arg. S. 15183 .	16	5.3	7.4	8.3	19.6	20.5	21.6	22.8	23.9	34.4	35.6	37.9	57 21.57	0.12	11.86	15 57 9.59	1.60
	O. Arg. S. 15292 .	17	44.6	47.0	48.2	58.9	0.0	1.3	2.7	3.8	14.6	15.8	18.2	2 1.37	0.12	11.86	16 1 49.39	+ 1.62
	O. Arg. N. 16014 .	18	45.8	51.7	54.9	24.1	27.5	31.2	34.1	37.5	6.6	10.4	16.6	8 30.95	0.13	11.85	16 8 18.97	— 3.74
	*+79° 34′ . . .	19	. .	. .	. .	39.3	44.9	50.9	57.8	3.4	. .	. .	. .	12 51.26	0.23	11.85	16 12 39.18	9.36
	*+79° 34′ . . .	20	51.8	4.1	8.6	. .	. .	. .	. .	. .	20.7	26.7	38.0	13 15.00	0.23	11.85	16 13 2.92	— 9.37
	O. Arg. S. 15612 .	21	27.5	29.7	30.9	41.3	42.5	43.8	45.1	46.2	56.7	58.0	0.2	17 43.81	0.12	11.84	16 17 31.85	+ 1.63
	Weisse (2) 616 .	22	. .	. .	. .	58.8	0.1	1.7	3.3	4.6	16.8	18.2	20.9	21 8.05	6.41	11.84	16 20 49.80	0.30
	Weisse (2) 787 .	23	14.6	17.4	18.8	31.1	32.5	33.9	35.5	36.7	49.0	50.3	53.1	26 33.90	0.08	11.84	16 26 21.98	0.29
	Weisse (2) 889 .	24	17.4	19.9	21.4	33.2	34.5	36.0	37.6	38.7	50.7	52.0	54.4	29 35.98	0.08	11.83	16 29 24.07	0.39
	O. Arg. S. 15812 .	25	7.2	9.6	10.7	21.5	22.7	23.9	25.2	26.5	37.2	38.5	40.7	32 23.97	0.12	11.83	16 32 12.02	1.67
	*+38° 26′ . . .	26	6.9	9.7	11.0	23.2	24.5	26.2	27.7	29.0	41.3	42.6	45.4	35 26.14	0.08	11.83	16 35 14.23	0.28
	Lacaille 6984 . .	27	58.7	1.2	2.5	13.6	14.8	16.2	17.5	18.9	30.1	31.3	33.9	40 16.25	0.13	11.82	16 40 4.30	1.72
	B. A. C. 5672 . .	28	20.5	22.7	24.0	35.4	36.5	38.0	39.4	40.6	51.7	53.2	55.5	47 37.95	— 0.13	11.82	16 47 26.00	1.74
	*+38° 22′ . . .	29	. .	. .	. .	59.6	1.0	2.5	4.1	5.4	17.5	18.9	21.6	53 8.82	+ 6.26	11.81	16 53 3.27	0.21
	B. A. C. 5748 . .	30	. .	. .	. .	29.6	30.6	31.8	33.0	34.1	43.8	44.9	47.1	57 36.86	— 5.17	11.81	16 57 19.88	1.55
	B. A. C. 5796 . .	31	46.5	48.9	50.1	0.9	2.2	3.5	4.9	6.1	16.9	18.2	20.6	6 3.53	0.13	11.80	17 5 51.60	1.76
	38 Ophiuchi . . .	32	28.4	30.6	31.9	42.8	43.8	45.1	46.5	47.5	58.3	59.4	1.8	9 45.10	0.12	11.80	17 9 33.18	1.76
	B. A. C. 5839 . .	33	13.9	16.1	17.3	27.4	28.5	29.8	30.9	32.0	42.1	43.3	45.5	12 29.71	0.11	11.79	17 12 17.81	1.66
	b Ophiuchi . . .	34	19.7	22.0	23.1	33.8	34.8	36.2	37.5	38.6	49.1	50.3	52.6	18 36.15	— 0.12	11.79	17 18 24.24	1.75
26 E.	Polaris, S. P. . .	35	. .	. .	. .	12.5	57.0	45.5	36.5	19.5	. .	. .	. .	10 46.20	+ 5.05	11.29	. . . .	37.71
	α Virginis . . .	36	15.3	17.4	18.4	28.2	29.2	30.4	31.7	32.7	42.4	43.5	45.6	18 30.44	— 0.09	11.29	. . . .	1.78
	Weisse (2) 899 .	37	43.2	44.3	45.6	47.0	49.5	5.5	7.6	9.0	. .	. .	. .	42 53.96	+ 27.33	11.28	13 43 10.01	+ 1.60
	*+77° 52′ . . .	38	. .	. .	. .	. .	. .	. .	16.8	25.5	32.2	38.8	44.8	46 31.62	— 2 36.75	11.28	13 43 43.59	— 2.67
	*+77° 51′ . . .	39	41.6	50.6	56.2	42.6	46.9	51.8	57.7	2.8	47.4	52.8	2.6	46 52.09	0.57	11.28	13 46 40.24	— 2.79
June 3 Y.	B. A. C. 5266 . .	40	43.8	46.0	47.2	57.9	59.1	0.5	1.9	3.0	13.6	14.8	17.2	48 0.45	0.05	13.02	15 47 47.38	+ 1.54
	ε Coronæ Borealis .	41	7.8	10.3	11.4	22.2	23.5	24.8	26.2	27.2	37.9	39.4	41.6	52 24.75	0.15	13.02	. . . .	0.78
	Lacaille 6658 . .	42	54.8	57.6	58.8	11.0	12.4	13.8	15.4	16.7	28.7	30.1	32.8	56 13.83	0.04	13.02	15 56 0.77	1.56
	δ Ophiuchi . . .	43	28.9	30.9	32.1	41.6	42.7	43.9	45.1	46.2	55.7	56.8	59.0	7 43.90	0.09	13.02	. . . .	+ 1.34
	η Ursæ Minoris .	44	. .	46.7	51.0	31.4	34.9	40.3	45.2	49.1	29.3	33.6	. .	21 40.17	0.74	13.02	16 21 26.41	— 6.37
5	ε Bootis	45	13.8	16.3	17.4	28.3	29.5	31.0	32.2	33.3	44.2	45.4	47.8	39 30.84	0.15	13.23	14 39 17.46	+ 1.16
	Weisse (2) 936 .	46	. .	46.2	47.3	59.5	0.7	2.1	3.6	4.9	17.0	18.4	. .	44 2.19	0.18	13.23	14 43 47.78	0.92
	B. A. C. 4906 . .	47	. .	. .	. .	. .	. .	. .	11.9	14.5	16.0	18.0	19.5	46 15.98	41.90	13.23	14 45 20.85	0.87
	Weisse (2) 1154 .	48	. .	. .	. .	29.5	30.9	32.4	34.1	35.7	. .	. .	. .	53 32.52	0.21	13.24	14 53 19.07	0.58
	Weisse (2) 1162 .	49	. .	. .	. .	45.5	46.9	48.6	50.3	51.5	. .	. .	. .	53 48.56	0.21	13.24	14 53 35.11	0.58
	*+43° 51′ . . .	50	7.1	9.7	11.2	. .	. .	. .	. .	. .	43.9	46.0	48.7	54 27.77	— 0.21	—13.24	14 54 14.32	+ 0.57

5. Faint.
9. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n.	c
1869. h.	s.	s.	s.	s.
May 25, 14.5	— 11.94	+ 0.054	+ 0.05	— 0.09
26, 13.3	— 11.29	+ 0.030	— 0.03	— 0.09
June 3, 16.1	— 13.02	0.000	— 0.09	— 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 5	Weisse (2) 1183 .	1	. .	. .	. .	33.2	34.8	36.3	38.1	39.6	. .	. .	. .	54 36.40	— 0.21	—13.24	14 54 22.95	+ 0.57
Y.	O. Arg. S. 14257 .	2	20.4	22.9	24.1	35.0	36.2	37.6	38.9	40.1	51.0	52.3	54.7	59 37.56	0.05	13.24	14 59 24.27	1.56
	Weisse 1144 . .	3	31.6	33.7	34.8	44.8	45.8	47.0	48.2	49.2	59.0	0.1	2.2	1 46.95	0.07	13.24	15 1 33.64	1.52
	O. Arg. S. 14511 .	4	50.1	52.5	53.7	4.3	5.3	6.7	8.0	9.3	19.9	21.5	23.6	16 6.81	0.05	13.24	15 15 53.52	+ 1.54
	11 Ursæ Minoris . .	5	. .	. .	. .	22.3	25.7	29.6	33.7	37.2	8.8	12.6	19.2	17 46.14	16.94	13.24	15 17 15.96	— 3.17
	γ Ursæ Minoris . .	6	24.9	31.4	35.4	6.8	10.2	14.0	18.0	21.2	53.0	56.5	3.3	21 14.06	0.58	13.24	15 21 0.24	— 3.27
	*—38° 39′ . . .	7	. .	. .	. .	11.6	13.1	14.5	16.0	17.4	29.7	31.0	33.8	29 20.89	6.41	13.24	15 29 1.24	+ 1.52
	α Serpentis . . .	8	48.8	51.0	52.2	. .	. .	. .	. .	. .	15.9	17.0	19.1	38 4.00	0.10	13.25	15 37 50.65	1.27
	*—25° 33′ . . .	†9	. .	55.8	56.9	7.5	8.6	9.8	11.0	12.2	23.4	24.5	. .	45 9.97	0.05	13.25	15 44 56.67	1.53
	ξ Lupi, (1st *) . .	10	29.0	31.3	32.4	. .	. .	. .	. .	. .	1.1	2.4	4.7	48 46.82	0.05	13.25	15 48 33.52	1.54
	ξ Lupi, (2d *) . .	11	. .	. .	. .	44.9	46.0	47.5	48.9	50.0	. .	. .	. .	48 47.46	0.05	13.25	15 48 34.16	1.54
	Lacaille 6641 . .	12	27.8	30.2	31.7	43.5	44.8	46.2	47.9	49.0	1.0	2.3	4.9	53 46.30	0.04	13.25	15 53 33.01	1.54
	Weisse 1081 . .	13	44.3	46.3	47.4	. .	. .	. .	. .	. .	11.1	12.2	14.4	57 59.28	0.10	13.25	15 57 45.93	1.21
	Weisse 1086 . .	14	53.4	55.5	56.5	. .	. .	. .	. .	. .	20.3	21.5	23.5	58 8.45	— 0.10	13.25	15 57 55.10	1.21
	O. Arg. S. 15295 .	15	30.6	31.9	33.4	34.6	36.8	. .	39.7	42.0	43.4	44.8	46.0	2 8.32	+ 0.30	13.25	16 1 55.37	1.47
	O. Arg. S. 15300 .	16	54.7	56.9	58.0	8.1	9.2	10.5	11.7	12.8	22.5	23.8	26.2	2 10.40	— 0.06	13.25	16 1 57.09	+ 1.47
	O. Arg. N. 16014 .	17	47.2	53.0	56.3	25.7	28.5	32.3	36.0	39.2	7.8	11.3	18.0	8 32.30	0.53	13.26	16 8 18.51	— 3.64
	Weisse 221. . .	18	16.4	18.5	19.6	29.3	30.4	31.5	32.7	33.8	43.5	44.6	46.6	12 31.54	0.11	13.26	16 12 18.17	+ 1.14
	B. A. C. 5741 . .	19	18.6	21.2	22.6	33.7	35.0	36.4	37.9	39.0	50.3	51.6	53.8	17 36.37	0.05	13.26	16 17 23.06	1.62
	Weisse (2) 616. .	20	44.0	46.6	48.0	0.3	1.6	3.2	4.7	5.9	18.3	19.6	22.4	21 3.15	0.18	13.26	16 20 49.71	0.24
	Weisse (2) 787. .	21	16.2	18.8	20.2	32.3	33.8	35.4	36.8	38.2	50.4	51.7	54.3	26 35.28	0.18	13.26	16 26 21.84	0.21
	O. Arg. S. 15782 .	22	27.8	30.0	31.5	42.5	43.7	45.2	46.5	47.6	57.9	59.5	2.3	30 44.95	0.05	13.26	16 30 31.64	1.56
	B. A. C. 5589 . .	23	. .	. .	. .	24.9	26.0	27.4	28.8	30.0	. .	. .	. .	35 27.42	0.05	13.26	16 35 14.11	1.57
	O. Arg. S. 16078 .	24	17.0	19.3	20.4	31.0	32.3	33.6	34.9	36.0	46.7	48.0	50.3	46 33.59	— 0.05	13.26	16 46 20.28	1.55
	O. Arg. S. 16082 .	25	4.3	5.6	7.0	8.4	11.1	. .	17.9	20.0	21.4	22.9	24.3	46 44.29	+ 0.34	13.26	16 46 31.37	1.55
	O. Arg. S. 16163 .	26	31.0	33.4	34.7	45.3	46.5	47.8	49.2	50.4	1.0	2.3	4.7	50 47.85	— 0.05	13.27	16 50 34.53	1.57
	O. Arg. S. 16213 .	27	28.8	31.3	32.5	42.6	43.7	45.1	46.3	47.4	57.6	59.0	0.9	53 45.02	0.06	13.27	16 53 31.69	+ 1.51
	ε Ursæ Minoris . .	28	. .	. .	. .	35.3	42.9	52.0	0.8	8.1	. .	. .	. .	59 51.82	1.33	13.27	. . . .	— 14.62
	Groombridge 2418	29	. .	. .	. .	8.9	13.0	20.0	11.8	19.1	23.0	28.4	32.3	4 57.06	1 30.03	13.27	17 3 13.76	— 5.46
	a^1 Herculis . . .	30	40.2	42.3	43.4	53.4	54.5	55.7	56.9	58.0	7.8	9.0	11.3	8 55.68	0.12	13.27	17 8 42.29	+ 0.93
	O. Arg. S. 16600 .	31	34.6	36.7	38.1	48.4	49.5	51.0	52.3	53.4	3.7	5.0	7.3	11 50.91	0.06	13.27	17 11 37.58	1.56
	*—27° 53′ . . .	32	1.2	3.7	5.0	15.6	17.0	18.2	19.7	20.8	31.7	32.9	35.2	14 18.27	0.05	13.27	17 14 4.95	1.61
	Lacaille 7268 . .	33	. .	. .	. .	33.7	35.0	36.3	37.7	39.0	50.7	51.9	54.6	16 42.36	6.08	13.27	17 16 23.01	1.66
	Lacaille 7269 . .	34	. .	. .	. .	. .	. .	. .	19.0	21.5	23.0	24.8	26.2	17 22.90	39.97	13.27	17 16 29.66	1.66
	O. Arg. S. 16802 .	35	42.7	44.9	46.2	57.6	58.9	0.1	1.5	2.6	13.9	15.3	17.7	20 0.13	0.05	13 27	17 19 46.81	1.64
	*—31° 46′ . . .	36	. .	. .	. .	19.6	20.9	22.4	23.7	24.8	. .	. .	. .	23 22.28	0.05	13.27	17 23 4.96	1.66
	*—32° 26′ . . .	37	46.2	48.8	50.1	1.4	2.6	4.0	5.4	6.6	18.0	19.5	21.8	26 4.04	0.05	13.28	17 25 50.71	1.67
	B. A. C. 5925 . .	38	. .	. .	. .	38.5	39.7	42.2	59.8	2.3	3.8	5.5	6.9	26 54.84	30.35	13.28	17 26 11.21	1.67
	*—20° 36′ . . .	39	41.7	44.0	45.2	55.5	56.6	58.0	59.3	0.3	10.5	11.7	14.1	29 57.90	0.06	13.28	17 29 44.56	1.56
	O. Arg. S. 17063 .	40	. .	5.9	7.0	17.2	18.3	19.5	20.7	21.7	31.9	33.1	. .	33 19.48	0.06	13.28	17 33 6.14	1.53
	O. Arg. S. 17068 .	41	. .	. .	. .	55.9	57.0	59.4	14.8	17.2	18.3	19.7	21.0	34 10.41	26.96	13.28	17 33 30.17	1.53
	Weisse 713. . .	42	27.9	29.9	31.1	40.8	41.9	43.0	44.2	45.3	54.7	55.9	58.0	37 42.97	0.08	13.28	17 37 29.61	1.49
	Lacaille 7443 . .	43	. .	. .	. .	33.5	34.8	36.4	38.0	39.2	51.6	52.9	55.6	40 42.75	6.43	13.28	17 40 23.04	1.76
	B. A. C. 6029 . .	44	. .	. .	. .	42.3	43.5	44.9	46.4	47.6	. .	. .	. .	43 44.94	— 0.05	13.28	17 43 31.61	1.73
	*—36° 55′ . . .	45	29.0	30.4	32.0	33.4	36.2	. .	47.0	49.6	51.0	52.6	54.0	47 11.52	+ 0.39	13.28	17 46 58.63	1.76
	*—36° 57′ . . .	46	0.4	2.8	4.0	15.4	16.5	17.9	19.4	20.5	32.0	33.2	34.6	47 17.88	— 0.04	13.28	17 47 4.56	1.76
	O. Arg. S. 17419 .	47	37.5	39.7	41.1	51.7	53.0	54.3	55.6	56.9	7.5	8.8	11.2	50 54.30	0.05	13.28	17 50 40.97	1.67
	O. Arg. S. 17503 .	48	18.6	20.5	21.7	31.8	32.9	34.1	35.3	36.4	46.4	47.5	49.7	54 34.08	0.07	13.28	17 54 20.73	1.54
	Weisse 1174 . .	49	51.4	53.6	54.6	4.3	5.3	6.6	7.8	8.8	18.4	19.5	21.6	57 6.54	0.10	13.28	17 56 53.16	1.23
	Weisse (2) 44 . .	50	29.2	31.7	33.0	45.1	46.4	47.9	49.3	50.5	2.6	4.0	6.6	2 47.85	— 0.18	—13.28	18 2 34.39	+ 0.13

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 5, 16.4	— 13.26	— 0.015	— 0.09	— 0.09

9. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. June 5 Y.	μ Sagittarii . . .	1	55.0	57.1	58.3	8.7	9.8	11.1	12.4	13.4	23.8	24.9	27.1	6 11.05	− 0.06	−13.28	18 5 57.71	+ 1.63
	B. A. C. 6192 . .	2	10.4	13.0	14.1	25.7	27.1	28.4	29.9	31.1	42.6	44.0	46.6	9 28.45	0.05	13.29	18 9 15.11	1.79
	*−26° 31′, (1st *) .	3	30.3	32.8	34.0	45.0	46.1	47.2	48.5	49.6	0.4	1.5	3.7	14 47.19	− 0.05	13.29	18 14 33.85	1.73
	*−26° 31′, (2d *) .	4	2.5	3.7	5.1	6.6	9.2	. .	16.3	18.6	20.1	21.8	23.2	14 42.71	+ 0.34	13.29	18 14 29.76	1.73
	• O. Arg. S. 18198 .	5	48.3	50.4	51.7	2.0	3.1	4.4	5.8	6.8	17.1	18.3	20.5	18 4.40	− 0.06	13.29	18 17 51.05	+ 1.66
	δ Ursæ Minoris .	6	. .	. .	. .	. .	. .	. .	35.0	10.5	31.0	55.5	13.5	24 29.10	− 9 19.85	13.29	. . . .	− 38.94
11 E.	B. A. C. 4897 . .	7	. .	. .	. .	7.3	8.5	9.7	11.1	12.7	. .	. .	. .	44 9.86	+ 0.12	10.39	14 43 59.59	+ 0.91
	O. Arg. N. 15005 .	8	. .	. .	. .	. .	. .	. .	9.4	14.0	16.1	18.7	21.3	55 15.90	− 65.30	10.39	14 54 0.21	− 0.29
	*+59° 7′ . . .	9	. .	. .	. .	47.0	49.4	53.4	22.7	27.7	30.0	32.3	35.1	55 14.70	− 50.42	10.39	14 54 13.89	− 0.29
	O. Arg. S. 14459 .	10	13.0	15.3	16.5	26.5	27.6	28.8	30.2	31.3	41.5	42.8	45.0	12 28.95	+ 0.03	10.39	15 12 18.59	+ 1.53
	O. Arg. S. 14511 .	11	47.2	49.5	50.7	1.4	2.6	4.0	5.3	6.4	17.4	18.5	20.8	16 3.98	0.02	10.38	15 15 53.62	+ 1.54
	*+55° 49′ . . .	12	. .	. .	. .	18.8	20.4	22.7	24.7	26.4	. .	. .	. .	17 22.60	0.18	10.38	15 17 12.40	− 0.32
	μ¹ Bootis	13	25.6	28.2	29.5	41.8	43.0	44.5	46.0	47.3	59.5	0.8	3.4	19 44.51	+ 0.11	10.38	. . . .	+ 0.63
	Lacaille 6582 . .	14	38.0	39.4	41.3	42.8	45.5	. .	. .	. .	. .	. .	. .	46 41.40	− 42.69	10.38	15 45 48.33	1.51
	*−16° 50′ . . .	15	25.6	26.9	28.0	29.2	31.3	. .	. .	. .	. .	. .	. .	47 28.20	+ 34.47	10.38	15 47 52.29	1.46
	Cor.Borealis,(Var.*)	16	47.0	49.4	50.5	1.0	2.1	3.4	4.8	5.9	16.8	17.9	20.3	54 3.55	0.08	10.38	15 53 53.25	0.79
	β¹ Scorpii	17	45.9	47.9	49.0	59.4	0.4	1.6	2.9	4.0	14.2	15.3	17.4	58 1.64	0.03	10.38	. . . .	1.50
12 Y.	B. A. C. 4979 . .	18	11.0	13.2	14.5	25.2	26.2	27.6	28.8	30.0	40.8	42.0	44.4	1 27.61	+ 0.02	13.16	15 1 14.47	1.56
	O. Arg. S. 14297 .	19	. .	. .	. .	. .	. .	. .	21.4	24.0	25.4	26.7	28.1	2 25.12	− 36.19	13.16	15 1 35.77	1.56
	β Libræ	20	57.2	59.4	0.5	10.2	11.1	12.4	13.6	14.6	24.4	25.5	27.6	10 12.41	+ 0.04	13.16	. . . .	1.49
	*+37° 40′ . . .	21	. .	. .	. .	. .	. .	. .	. .	29.6	31.1	32.9	39.4	20 33.25	− 43.48	13.15	15 19 36.62	0.65
	Lalande 28347 .	22	19.2	21.8	23.4	35.4	36.6	38.1	39.6	41.0	53.0	54.4	56.9	26 38.13	+ 0.11	13.15	15 26 25.09	0.55
	Lalande 28391,(1st*)	23	16.7	19.0	20.3	31.2	32.3	33.5	34.7	35.9	46.6	48.0	50.1	28 33.48	+ 0.08	13.15	15 28 20.41	0.90
	Lalande 28391,(2d *)	24	. .	55.2	56.9	58.1	0.4	. .	8.0	10.6	12.0	13.5	. .	28 34.34	− 0.30	13.15	15 28 20.89	0.90
	*−2° 38′ . . .	25	33.2	35.4	36.6	46.2	47.2	48.4	49.6	50.6	0.2	1.4	3.4	46 48.38	+ 0.05	13.15	15 46 35.28	1.34
	Lalande 29306 .	26	. .	. .	. .	56.1	57.2	58.5	59.7	0.8	10.9	12.2	14.2	0 3.70	− 5.19	13.15	15 59 45.36	1.45
	Lalande 29654 .	27	28.9	31.5	33.0	45.3	46.5	48.0	49.6	50.8	3.2	4.5	7.2	8 48.05	+ 0.12	13.15	16 8 35.02	0.29
	*+37° 46′ . . .	28	10.7	13.0	14.5	26.8	28.1	29.6	31.0	32.3	. .	. .	. .	13 23.25	+ 6.40	13.15	16 13 16.50	0.30
	O. Arg. S. 15615 .	29	. .	. .	. .	1.1	2.4	4.5	21.2	23.8	25.2	26.5	27.8	18 16.56	− 28.25	13.15	16 17 35.16	1.47
	O. Arg. S. 15671 .	30	0.7	2.9	4.2	. .	. .	. .	. .	. .	30.3	31.4	33.6	22 17.18	+ 0.03	13.14	16 22 4.07	1.48
	22 Scorpii	31	13.9	16.0	17.3	. .	. .	. .	. .	. .	43.4	44.7	46.9	22 30.37	0.03	13.14	16 22 17.26	1.48
	B. A. C. 5589 . .	†32	10.0	12.4	13.7	25.0	26.2	27.6	28.9	30.1	41.6	42.7	44.9	35 27.55	0.02	13.14	16 35 14.43	1.51
	μ¹ Scorpii	33	56.4	59.2	0.6	12.6	13.9	15.6	17.0	18.3	30.5	31.7	34.5	43 15.48	+ 0.02	13.14	16 43 2.36	1.54
	μ² Scorpii	34	. .	. .	. .	40.6	41.9	43.5	44.9	46.2	58.5	59.7	2.4	43 49.71	− 6.27	13.14	16 43 30.30	1.54
	*−31° 6′ . . .	35	42.2	44.7	46.0	57.4	58.5	59.8	1.2	2.6	13.8	15.0	17.4	46 59.87	+ 0.02	13.14	16 46 46.75	1.52
	B. A. C. 5718 . .	36	22.0	24.6	25.7	37.2	38.4	39.8	41.2	42.6	54.0	55.1	57.4	53 39.82	0.02	13.14	16 53 26.70	+ 1.53
	ε Ursæ Minoris .	37	. .	. .	. .	33.2	40.5	49.2	58.6	6.5	. .	. .	. .	59 49.60	0.81	13.14	. . . .	− 14.44
	Groombridge 2418	38	33.5	41.3	45.5	18.7	22.0	26.0	30.3	33.9	8.4	11.9	19.0	3 26.41	0.38	13.14	17 3 13.65	− 5.46
	a¹ Herculis . . .	39	40.0	42.0	43.1	53.3	54.2	55.5	56.7	57.8	7.8	8.9	11.0	8 55.48	0.07	13.14	. . . .	+ 0.87
	Lalande 31492 .	40	19.6	21.6	22.8	32.5	33.6	34.7	35.9	36.9	46.5	47.6	49.8	13 34.68	+ 0.04	13.14	17 13 21.58	1.26
	Weisse (2) 486. .	41	. .	. .	. .	. .	. .	. .	21.2	23.8	25.2	26.5	27.9	18 24.92	− 35.12	13.14	17 17 36.66	0.80
	Weisse (2) 487. .	42	39.4	41.5	42.6	52.8	53.8	55.1	56.3	57.3	7.4	8.6	10.7	17 55.05	+ 0.07	13.14	17 17 41.98	0.80
	*+37° 50′ . . .	43	57.1	59.8	1.2	13.5	14.7	16.4	17.7	19.0	31.3	32.6	35.3	21 16.24	0.11	13 13	17 21 3.22	0.02
	O. Arg. S. 16908 .	44	47.3	49.7	50.8	0.9	1.9	3.1	4.3	5.4	15.6	16.6	18.8	25 3.13	0.03	13.13	17 24 50.03	1.41
	O. Arg. S. 16952 .	45	53.0	55.2	56.5	6.6	7.6	8.9	10.1	11.2	21.5	22.5	24.7	27 8.89	0.03	13.13	17 26 55.79	1.43
	*−20° 36′ . . .	46	41.8	44.0	45.3	55.5	56.6	57.8	59.0	0.2	10.6	11.6	13.9	29 57.85	+ 0.03	13.13	17 29 44.75	1.46
	*−32° 11′ . . .	†47	. .	. .	. .	34.4	35.7	38.1	56.1	58.9	0.4	2.1	. .	31 49.39	− 25.34	13.13	17 31 10.92	1.57
	*−32° 9′ . . .	†48	. .	. .	. .	. .	. .	. .	29.8	32.8	34.1	35.5	37.1	32 33.86	− 39.72	13.13	17 31 41.01	1.57
	μ Sagittarii . . .	49	54.6	57.0	58.3	8.4	9.6	10.9	12.2	13.4	23.7	24.8	27.0	6 10.90	+ 0.03	−13.13	. . . .	+ 1.51

32. Faint.
47. Record faint.
48. Record faint.
June 8. Image west $0^r.58$. Clamp west.
Image west $0^r.39$. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 11, 15.6	− 10.38	+ 0.010	+ 0.06	+ 0.05
12, 16.8	− 13.14	+ 0.010	+ 0.06	+ 0.05

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. June 12 Y.	δ Ursæ Minoris . .	1	. .	. .	. .	. .	46.0	7.0	27.0	. .	. .	. .	. .	15 6.67	+ 2.02	−13.13	. . . .	− 39.03
17	Moon I . . .	2	57.3	59.4	0.6	10.5	11.4	12.7	13.8	15.0	24.8	26.0	28.0	38 12.68	0.05	7.63	12 38 5.10	
	α Canum Venat. .	3	42.6	45.4	46.9	59.1	0.3	2.0	3.6	4.9	17.3	18.6	21.4	50 2.01	0.13	7.62	12 50 54.52	+ 2.16
	θ Virginis . . .	4	3.7	5.8	6.9	16.6	17.6	18.8	20.0	21.0	30.6	31.7	33.8	3 18.77	+ 0.05	7.62	13 3 11.20	2.03
	Polaris, S. P. . .	5	. .	. .	. .	38.0	21.5	10.0	58.5	40.0	. .	. .	. .	11 9.60	− 5.16	7.62		20.80
	O. Arg. S. 14278 .	6	42.3	44.7	46.0	56.9	58.2	59.5	0.8	1.9	13.0	14.3	16.5	0 59.46	+ 0.01	7.59	15 0 51.88	1.58
	O. Arg. S. 14297 .	7	. .	. .	. .	56.2	57.3	59.4	15.8	18.4	19.7	21.0	22.3	2 11.26	− 27.97	7.59	15 1 35.70	1.57
	O. Arg. S. 14349 .	8	53.4	55.8	56.9	7.5	8.6	10.0	11.3	12.5	23.1	24.4	26.6	5 10.01	+ 0.03	7.59	15 5 2.45	1.57
	Lacaille 6318 . .	9	51.0	53.5	54.9	6.6	7.7	9.2	10 6	11.9	23.5	25.0	27.3	12 9.20	0.01	7.59	15 12 1.62	+ 1.55
	*+55° 47′ . . .	10	52.9	56.6	58.7	15.7	17.5	19.6	21.8	23.7	40.8	42.7	46.4	17 19.67	0.21	7.59	15 17 12.29	− 0.23
	*−32° 3′ . . .	†11	36.7	38.7	39.7	51.6	52.6	53.9	55.3	56.4	8.3	9.7	11.8	19 54.06	+ 0.01	7.58	15 19 46.49	+ 1.54
	*−33° 8′ . . .	12	. .	. .	. .	32.4	33.6	35.0	36.4	37.6	49.2	50.4	52.8	22 40.93	− 5.93	7.58	15 22 27.42	1.54
	B. A. C. 5117 . .	13	1.3	3.5	4.7	15.2	16.3	17.6	18.9	20.1	30.7	31.8	34.2	26 17.66	+ 0.02	7.58	15 26 10.10	1.53
	*−23° 46′, (1st *) .	14	. .	. .	. .	24.4	25.4	26.7	28.0	29.1	. .	. .	. .	27 26.72	0.02	7.58	15 27 19.16	1.52
	*−23° 46′, (2d *) .	15	50.1	52.4	53.7	4.1	5.2	6.7	7.9	9.0	19.5	20.7	22.9	28 6.56	0.02	7.58	15 27 59.00	1.52
	*−36° 0′ . . .	16	17.1	19.7	21.0	32.6	34.0	35.6	37.0	38.4	50.3	51.6	54.0	31 35.57	0.00	7.58	15 31 27.99	+ 1.52
	Schwerd 919 . .	17	. .	. .	. .	51.2	56.9	3.8	10.5	17.1	. .	. .	. .	34 3.90	0.76	7.58	15 33 57.08	− 7.73
	α Serpentis . . .	18	43.1	45.2	46.4	55.9	57.0	58.2	59.4	0.5	10.1	11.3	13.4	37 58.23	0.06	7.58	15 37 50.71	+ 1.26
	18 Ursæ Minoris .	19	. .	. .	. .	54.4	0.4	7.9	14.2	20.9	. .	. .	. .	47 7.56	0.76	7.58	15 47 0.74	− 8.50
	ε Coronæ Borealis .	20	2.2	4.5	5.8	16.6	17.7	19.0	20.3	21.6	32.3	33.5	35.9	52 19.04	0.09	7.58	15 52 11.55	+ 0.78
	O. Arg. N. 15839 .	21	52.5	58.4	1.7	29.9	32.8	36.3	39.7	43.0	11.5	14.4	20.3	57 36.41	0.47	7.57	15 57 29.31	− 3.00
	O. Arg. N. 15864 .	22	. .	. .	. .	42.2	45.3	48.8	52.2	55.4	. .	. .	. .	58 48.78	0.47	7.57	15 58 41.68	− 3.05
	Lacaille 6765 . .	23	47.3	49.8	51.2	3.0	4.0	5.6	7.0	8.2	20.2	21.4	23.9	9 5.60	0.01	7.57	16 8 58.04	+ 1.50
	*+34° 46′ . . .	24	4.9	7.6	9.1	21.2	22.4	24.0	25.5	26.8	39.0	40.3	42.9	13 23.97	0.11	7.57	16 13 16.51	0.27
	*−24° 10′ . . .	25	. .	20.4	21.4	32.5	33.6	34.6	36.0	37.0	47.6	48.7	. .	17 34.64	+ 0.02	7.57	16 17 27.09	1.46
	O. Arg. S. 15612 .	26	0.5	1.7	3.2	4.5	6.9	. .	12.6	15.0	16.4	17.8	19.4	17 39.80	− 0.36	7.57	16 17 31.87	+ 1.46
	η Ursæ Minoris .	27	. .	. .	. .	23.8	28.4	33.4	38.5	42.4	. .	. .	. .	21 33.30	+ 0.53	7.57	16 21 26.26	− 6.00
	*−33° 58′ . . .	28	20.5	23.0	24.5	36.0	37.1	38.6	40.1	41.4	52.9	54.4	56.6	26 38.65	0.01	7.57	16 26 31.09	+ 1.49
	Lacaille 6894 . .	29	52.7	55.2	56.6	8.5	9.7	11.2	12.6	13.7	25.7	27.0	29.6	28 11.14	0.00	7.57	16 28 3.57	1.50
	O. Arg. S. 15790 .	30	47.3	49.8	51.0	2.0	3.1	4.4	5.7	7.0	18.1	19.2	21.7	31 4.48	0.01	7.57	16 30 56.92	1.47
	O. Arg. S. 15834 .	31	23.6	25.9	27.0	37.7	38.8	40.1	41.2	42.3	53.0	54.2	56.5	33 40.03	+ 0.02	7.57	16 33 32.48	1.44
	*+38° 27′ . . .	32	. .	. .	. .	37.0	38.4	40.9	0.5	3.5	5.1	6.8	8.3	35 55.06	− 33.08	7.56	16 35 14.42	0.15
	Lacaille 6976 . .	33	4.3	6.7	8.1	19.6	20.7	22.1	23.6	24.8	36.2	37.5	40.1	38 22.15	+ 0.01	7.56	16 38 14.60	1.49
	Lacaille 6987 . .	34	37.0	39.5	41.0	52.4	53.6	55.2	56.6	57.7	9.3	10.6	13.2	39 55.10	0.01	7.56	16 39 47.55	1.49
	*−36° 47′ . . .	35	52.6	55.4	56.7	8.7	9.9	11.5	13.3	14.2	26.2	27.6	30.1	44 11.47	0.00	7.56	16 44 3.91	1.50
	B. A. C. 5672 . .	36	16.2	18.7	20.0	31.2	32.4	33.7	35.1	36.3	47.6	48.8	51.3	46 33.75	0.01	7.56	16 46 26.20	1.48
	*−30° 0′ . . .	37	39.4	41.8	43.4	54.3	55.3	56.6	58.0	59.3	10.5	11.6	14.0	49 56.75	+ 0.01	7.56	16 49 49.20	1.47
	O. Arg. S. 16206 .	38	39.6	41.0	42.6	44.0	. .	. .	. .	56.4	57.8	59.3	0.5	53 20.15	− 0.32	7.56	16 53 12.27	1.46
	O. Arg. S. 16208 .	39	11.6	13.9	15.1	26.0	27.2	28.5	29.7	30.8	41.8	43.0	45.3	53 28.45	+ 0.02	7.56	16 53 20.91	1.46
	B. A. C. 5746 . .	40	. .	. .	. .	7.0	8.0	9.3	10.7	11.8	22.0	23.0	25.2	57 14.62	− 5.28	7.56	16 57 1.78	1.40
	*−27° 14′ . . .	41	48.2	50.2	51.7	2.5	3.7	5.0	6.3	7.5	18.4	19.5	21.9	1 4.99	+ 0.02	7.56	17 0 57.45	1.46
	*−37° 21′ . . .	42	47.0	49.6	51.0	3.1	4.4	5.9	7.4	8.7	20.8	22.0	24.5	4 5.85	0.00	7.56	17 3 58.29	1.52
	*−35° 20′ . . .	†43	. .	. .	. .	15.6	16.8	18.4	19.7	21.0	32.5	34.0	36.6	8 24.32	− 6.10	7.56	17 8 10.66	1.51
	O. Arg. S. 16586 .	44	54.0	56.2	57.3	7.8	8.9	10.3	11.4	12.6	23.1	24.2	26.6	11 10.22	+ 0.02	7.56	17 11 2.68	1.42
	*−27° 52′ . . .	45	55.5	. .	59.3	10.2	11.3	12.7	14.0	15.3	26.3	. .	29.6	14 12.69	+ 0.01	7.55	17 14 5.15	1.43
	Lacaille 7268 . .	46	. .	. .	. .	. .	. .	. .	7.4	10.3	11.9	13.3	14.8	17 11.54	− 40.86	7.55	17 16 23.13	1.51
	Lalande 31790. .	47	29.2	31.8	33.3	45.4	46.6	48.1	49.6	50.9	3.1	4.4	7.0	20 48.13	+ 0.12	7.55	17 20 40.70	0.02
	*−32° 26′ . . .	48	40.9	43.2	44.5	. .	. .	. .	. .	. .	12.7	13.9	16.3	25 58.58	0.01	7.55	17 25 51.04	1.51
	*−32° 26′± . .	49	. .	. .	. .	58.8	59.9	1.3	2.6	3.9	. .	. .	. .	26 1.30	0.01	7.55	17 25 53.76	1.51
	α Ophiuchi . . .	50	45.2	47.4	48.6	58.3	59.4	0.6	1.8	3.0	12.9	13.9	16.1	29 0.65	+ 0.07	− 7.55	17 28 53.17	+ 0.87

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 17, 15.6	− 7.58	+ 0.016	+ 0.08	+ 0.05

11. Very faint.
43. Faint

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 17	*−35° 25′ . . .	1	26.6	29.4	30.6	42.4	43.5	45.0	46.5	47.8	59.7	0.9	3.5	33 45.08	0.00	− 7.55	17 33 37.53	+ 1.54
Y.	Lacaille 7435 . .	2	17.5	20.0	21.4	33.5	34.7	36.1	37.5	38.7	50.7	52.1	54.6	39 36.07	0.00	7.55	17 39 28.52	+ 1.55
	Lalande 32631 . .	3	38.0	40.8	42.1	54.3	55.6	57.2	58.7	0.0	12.3	13.7	16.4	43 57.19	+ 0.13	7.55	17 43 49.77	− 0.08
	Lalande 32747 . .	4	34.3	37.0	38.4	50.5	52.0	53.6	55.2	56.4	8.6	10.0	12.7	46 53.52	0.13	7.55	17 46 46.10	− 0.10
	*−38° 33′ . . .	5	59.0	1.7	3.3	15.5	16.8	18.3	19.7	21.0	33.5	34.9	37.5	50 18.29	0.00	7.55	17 50 10.74	+ 1.58
	*−38° 4′ . . .	6	22.7	25.3	26.8	39.1	40.3	41.7	43.2	44.6	57.0	58.4	0.9	52 41.82	0.00	7.54	17 52 34.28	1.58
	Lalande 32974. .	7	31.8	34.3	35.4	46.4	47.6	49.0	50.3	51.4	2.3	3.5	5.9	54 48.90	+ 0.01	7.54	17 54 41.37	1.50
	Lacaille 7546 . .	8	27.4	29.8	31.2	43.4	44.6	46.2	47.7	49.1	1.2	2.5	5.0	56 46.19	0.00	7.54	17 56 38.65	1.58
	*−39° 22′ . . .	9	27.4	28.7	30.6	32.3	35.0	. .	52.2	55.6	57.0	58.5	59.9	3 13.72	− 0.45	7.54	18 3 5.73	1.61
	Lacaille 7598 . .	10	47.0	48.4	50.2	51.8	54.5	. .	11.8	15.0	16.8	18.4	20.2	3 33.41	− 0.45	7.54	18 3 25.42	1.61
	B. A. C. 6175 . .	11	55.6	58.0	59.3	10.7	11.9	13.3	14.7	15.9	27.4	28.6	31.0	7 13.31	+ 0.01	7.54	18 7 5.78	1.56
	*−18° 37′ . . .	12	1.6	3.7	4.9	15.0	16.1	17.4	18.7	19.8	30.0	31.2	33.3	9 17.43	0.03	7.54	18 9 9.92	1.41
	18 Sagittarii . . .	13	41.1	43.6	44.9	56.2	57.3	58.6	0.1	1.2	12.6	13.8	16.3	12 58.70	0.01	7.54	18 12 51.17	+ 1.56
	δ Ursæ Minoris . .	14	. .	. .	. .	24.0	40.0	0.0	19.0	40.0	. .	. .	. .	15 0.60	2.19	7.54	. . . .	− 39.08
	*−36° 6′ . . .	15	24.9	27.4	28.8	40.8	42.1	43.5	44.9	46.3	58.1	59.4	2.0	18 43.47	0.00	7.54	18 18 35.93	+ 1.61
	*−22° 54′ . . .	16	24.1	26.3	27.6	38.1	39.1	40.4	41.6	42.8	53.4	54.5	56.7	20 40.42	0.02	7.54	18 20 32.90	1.48
	*−32° 23′ . . .	17	29.6	. .	33.4	44.7	46.0	47.3	48.7	50.0	1.4	. .	5.2	22 47.37	0.01	7.54	18 22 39.84	1.59
	ε Serpentis . . .	18	. .	7.5	8.6	18.3	19.3	20.5	21.7	22.6	32.3	33.4	. .	25 20.47	0.05	7.54	18 25 12.98	1.15
	1 Aquilæ	19	59.0	1.0	2.2	11.9	12.9	14.1	15.3	16.3	26.2	27.2	29.3	28 14.13	0.04	7.54	18 28 6.63	1.28
18	Moon I. . . .	20	44.3	46.4	47.5	57.4	58.4	59.7	0.9	2.0	11.7	13.0	15.1	32 59.67	+ 0.05	7.39	13 32 52.33	
E.	η Ursæ Majoris . .	21	. .	. .	. .	27.5	29.0	31.0	32.8	34.5	49.4	51.0	54.2	42 38.68	− 7.57	7.38	13 42 23.73	1.43
	η Bootis	22	19.3	21.5	22.8	32.9	34.0	35.2	36.4	37.5	47.8	48.9	51.2	48 35.23	+ 0.08	7.38	13 48 27.93	1.73
	δ Ophiuchi . . .	23	23.2	25.3	26.3	36.0	37.0	38.1	39.3	40.4	20.0	21.0	23.0	7 38.15	0.05	7.36	16 7 30.84	1.28
	*−34° 34′ . . .	24	22.1	23.5	25.3	26.8	29.4	47.4	49.7	51.3	. .	. .	. .	11 34.44	31.06	7.36	16 11 58.14	1.50
	*−25° 15′ . . .	25	5.3	7.3	8.7	19.2	20.3	21.6	22.9	24.2	34.9	36.0	38.6	13 21.73	0.02	7.36	16 13 14.39	1.46
	O. Arg. S. 15615 .	26	26.3	28.4	29.7	40.2	41.3	42.5	43.7	44.8	55.3	56.5	58.8	17 42.50	0.02	7.36	16 17 35.16	1.45
	Weisse 393. . .	27	58.5	0.5	1.8	11.7	12.7	13.9	15.1	16.2	26.2	27.2	29.3	22 13.92	0.03	7.36	16 22 6.59	1.36
	Weisse 462. . .	28	. .	. .	. .	50.2	51.3	52.5	53.6	54.8	. .	. .	. .	25 52.48	0.04	7.36	16 25 45.16	1.33
	O. Arg. S. 15788 .	29	31.6	33.9	35.2	45.6	46.7	48.0	49.2	50.5	. .	. .	. .	30 42.59	5.47	7.36	16 30 40.70	1.44
	*−39° 14′ . . .	30	55.7	58.4	59.9	12.0	. .	15.1	. .	17.9	30.3	31.7	34.3	34 15.03	0.00	7.36	16 34 7.67	1.50
	*−39° 7′ . . .	31	36.0	38.7	40.1	52.5	53.7	55.4	56.9	58.4	10.6	12.0	14.6	35 55.35	0.00	7.36	16 35 47.99	1.50
	*−24° 5′ . . .	32	29.4	31.6	32.9	43.4	44.5	45.8	47.0	48.3	59.0	0.1	2.5	41 45.86	+ 0.02	7.36	16 41 38.52	1.43
	*−40° 26′ . . .	33	. .	. .	. .	. .	. .	. .	50.5	53.8	55.4	57.1	58.6	43 55.08	− 44.23	7.36	16 43 3.49	1.50
	B. A. C. 5639 . .	34	. .	. .	. .	. .	. .	. .	11.8	15.0	16.6	18.1	19.5	44 16.20	− 44.26	7.36	16 43 24.58	1.50
	Saturn I . . .	35	13.0	15.0	16.2	. .	. .	. .	. .	. .	41.6	42.7	45.0	46 28.92	+ 0.02	7.36	16 46 21.58	
	Saturn II . . .	36	. .	. .	. .	28.0	29.0	30.3	31.6	32.7	. .	. .	. .	46 30.32	0.02	7.36	16 46 22.98	
	*−29° 59′ . . .	37	39.3	41.5	42.8	54.0	55.1	56.5	58.0	59.1	10.3	11.4	13.7	49 56.52	+ 0.01	7.36	16 49 49.17	1.47
	*−29° 59′ . . .	38	. .	. .	. .	39.7	40.9	43.0	0.9	3.4	5.0	6.4	7.8	50 55.89	− 30.02	7.36	16 50 18.51	1.47
	*−29° 56′ . . .	39	. .	. .	. .	. .	. .	. .	53.6	56.2	57.9	59.0	0.3	55 57.40	38.84	7.36	16 55 11.20	1.47
	B. A. C. 5737 . .	40	. .	. .	. .	. .	. .	. .	56.7	59.2	0.6	2.1	3.7	57 0.46	− 38.36	7.36	16 56 14.74	1.46
	O. Arg. S. 16574 .	41	59.1	1.4	2.6	13.9	15.0	16.5	17.8	19.0	30.3	31.4	33.8	10 16.44	+ 0.01	7.35	17 10 9.10	1.47
	θ Ophiuchi . . .	42	. .	. .	. .	. .	. .	. .	41.0	43.6	44.9	46.2	47.5	14 44.64	− 37.06	7.35	17 14 0.23	1.43
	B. A. C. 5875 . .	43	44.2	46.4	47.8	59.0	0.2	1.4	2.7	4.0	14.8	16.0	18.4	18 1.35	+ 0.01	7.35	17 17 54.01	1.46
	B. A. C. 5897 . .	44	36.9	38.8	40.2	51.4	52.6	54.0	55.5	56.5	7.9	9.1	11.5	20 54.04	0.01	7.35	17 20 46.70	1.49
	*−32° 26′ . . .	45	20.8	23.4	24.9	. .	. .	. .	. .	. .	53.0	54.3	56.3	25 38.78	0.01	7.35	17 25 31.44	1.50
	*−32° 26′ . . .	46	35.2	37.5	39.4	. .	. .	. .	. .	. .	7.7	8.9	11.4	25 53.35	0.01	7.35	17 25 46.01	1.50
	*−35° 14′ . . .	47	36.9	38.5	39.7	52.6	53.7	55.1	56.3	57.6	9.0	10.6	13.7	30 54.88	+ 0.00	7.35	17 30 47.53	1.52
	*−35° 8′ . . .	†48	. .	. .	. .	. .	. .	. .	36.0	39.0	40.6	42.0	43.5	32 40.22	− 41.16	7.35	17 31 51.71	1.52
	*−35° 25′ . . .	49	26.9	29.2	30.6	42.3	43.6	45.0	46.5	47.8	59.7	0.8	3.5	33 45.08	0.00	7.35	17 33 37.73	1.53
	*−35° 7′ . . .	50	24.8	27.5	28.9	40.5	41.8	43.2	44.5	45.7	57.9	59.1	1.6	36 43.23	0.00	− 7.35	17 36 35.88	+ 1.53

48. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 18, 16.4	− 7.36	+ 0.009	+ 0.08	+ 0.05

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 18 E.	μ Herculis	1	12.4	14.6	16.0	26.6	27.9	29.2	30.6	31.8	42.6	43.9	46.4	41 29.27	+ 0.09	− 7.35	17 41 22.01	+ 0.38
	*−34° 42′	2	32.3	34.7	36.0	47.8	49.0	50.6	51.8	53.0	. .	. .	. .	47 44.40	6.05	7.35	17 47 43.10	1.54
	*−34° 42′	3	3.3	5.6	7.1	18.6	19.8	21.3	23.2	24.5	35.6	37.1	39.7	48 21.44	0.01	7.35	17 48 14.10	1.54
	*−31° 25′	4	39.5	41.6	42.9	54.5	55.5	56.8	58.2	59.6	. .	. .	. .	50 51.08	5.84	7.35	17 50 49.57	1.52
	O. Arg. S. 17538	5	43.7	45.9	47.0	57.5	58.6	59.8	1.3	2.6	13.0	14.2	16.5	56 0.01	0.02	7.35	17 55 52.68	1.45
	O. Arg. S. 17541	6	48.3	50.5	51.7	. .	. .	. .	. .	. .	17.7	18.8	21.4	56 4.73	0.02	7.35	17 55 57.40	1.46
	O. Arg. S. 17648	7	15.6	17.9	19.1	29.5	30.6	31.8	33.1	34.4	44.7	45.9	48.0	59 31.87	+ 0.02	7.35	17 59 24.54	1.42
	*+2° 32′	8	. .	. .	. .	41.2	42.1	43.2	44.6	45.7	55.2	56.2	58.3	1 48.31	− 4.93	7.35	18 1 36.03	1.06
	Dorpat 2288	9	42.7	44.7	45.7	55.4	56.4	57.5	58.7	59.7	9.5	10.5	12.5	3 57.57	+ 0.05	7.35	18 3 50.27	1.06
	μ Sagittarii	10	49.2	51.3	52.5	2.8	3.9	5.1	6.3	7.5	17.9	19.1	21.2	6 5.16	0.02	7.34	18 5 57.84	+ 1.42
	24 Ursæ Minoris	11	. .	. .	. .	1.0	21.0	42.5	6.0	26.5	. .	. .	. .	19 43.40	2.47	7.34	18 19 38.53	− 44.25
19 Y.	Moon I.	12	53.9	55.8	56.9	7.2	8.2	9.4	10.6	11.6	21.7	22.8	24.8	28 9.35	0.05	5.72	14 28 3.68	
	ε Bootis	13	5.9	8.4	9.6	20.5	21.7	23.0	24.4	25.5	36.4	37.7	40.0	39 23.01	+ 0.03	5.72	14 39 17.32	+ 1.26
	*−25° 7′	14	. .	. .	. .	. .	. .	. .	16.4	19.3	20.5	21.9	23.6	5 20.34	− 37.11	5.72	15 4 37.51	1.58
	O. Arg. S. 14349	15	. .	. .	. .	. .	. .	. .	41.7	44.3	45.8	47.2	48.6	5 45.52	− 37.12	5.72	15 5 2.68	1.57
	Lalande 28414.	16	57.4	59.7	0.9	11.4	12.4	13.8	15.1	16.3	26.6	27.9	30.1	30 13.78	+ 0.05	5.72	15 30 8.11	+ 1.52
	18 Ursæ Minoris	17	. .	. .	. .	52.6	58.6	5.9	13.2	19.2	. .	. .	. .	47 5.90	0.07	5.72	15 47 0.25	− 8.35
	ε Coronæ Borealis	18	0.4	2.8	4.2	14.8	15.9	17.4	18.8	19.9	30.7	31.9	34.2	52 17.36	0.03	5.72	15 52 11.67	+ 0.79
	O. Arg. N. 15838	19	51.0	57.0	0.2	28.4	31.6	35.0	38.2	41.2	9.7	12.6	18.5	57 34.85	0.03	5.71	15 57 29.17	− 2.94
	O. Arg. N. 15864	20	. .	. .	. .	40.6	43.7	47.3	50.7	53.9	. .	. .	. .	58 47.24	0.03	5.71	15 58 41.56	− 2.99
	ρ Ophiuchi, (N. *)	21	35.4	37.8	38.9	49.4	50.5	51.8	53.0	54.3	14.7	15.8	18.0	17 51.78	+ 0.05	5.71	16 17 46.12	+ 1.44
	ρ Ophiuchi, (S. *)	22	13.2	14.3	15.8	17.2	19.5	. .	24.5	27.3	28.5	29.9	31.4	17 52.16	− 0.33	5.71	16 17 46.12	1.44
	Weisse 544.	23	16.6	18.8	19.9	29.6	30.7	31.9	33.1	34.1	43.8	44.9	47.0	29 31.85	+ 0.05	5 71	16 29 26.19	1.30
	O. Arg. S. 15790	24	. .	. .	. .	1.3	4.0	5.3	6.7	8.2	. .	. .	. .	31 5.10	− 38.29	5.71	16 30 21.10	1.46
	O. Arg. S. 15850	25	11.2	13.4	14.6	24.6	25.6	26.8	28.0	29.2	39.2	40.3	42.5	34 26.85	+ 0.05	5.71	16 34 21.19	1.37
	Lacaille 6965	26	52.4	55.0	56.4	8.0	9.0	10.5	12.0	13.1	24.8	26.0	28.4	37 10.51	0.07	5.71	16 37 4.87	1.48
	*−4° 6′.	27	. .	55.8	57.1	6.6	7.6	8.8	9.9	11.1	20.7	21.7	. .	42 8.81	0.04	5.71	16 42 3.14	1.22
	O. Arg. S. 16031	28	34.0	36.3	37.4	47.7	48.9	50.2	51.4	52.5	2.8	4.0	6.3	43 50.14	+ 0.05	5.71	16 43 44.48	1.41
	Saturn I	29	31.6	32.8	34.4	35.7	37.9	. .	42.0	44.8	45.9	47.3	48.6	46 10.10	− 0.32	5.71	16 46 4.07	
	Saturn II	30	54.9	57.3	58.3	8.6	9.6	10.9	12.2	13.4	23.5	24.7	26.9	46 10.94	+ 0.05	5.71	16 46 5.28	
	O. Arg. S. 16163	31	23.6	26.0	27.2	38.1	39.3	40.5	41.7	42.8	53.8	54.9	57.3	50 40.47	0.06	5.71	16 50 34.82	1.44
	Lacaille 7087	32	0.2	2.7	4.0	15.6	16.8	18.1	19.4	20.8	32.4	33.6	36.0	53 18.15	0.07	5.71	16 53 12.51	1.48
	*−24° 3′	33	. .	. .	. .	48.0	49.2	50.4	51.6	52.8	. .	. .	. .	55 50.40	+ 0.05	5.71	16 55 44.74	1.42
	*−24° 3′	34	. .	. .	. .	3.8	4.8	6.2	7.3	8.6	19.4	20.4	22.7	56 11.65	− 5.40	5.71	16 56 0.54	1.42
	O. Arg. S. 16360	35	32.5	34.7	35.9	46.5	47.5	48.8	49.9	51.0	1.9	3.1	4.9	0 48.79	+ 0.05	5.71	17 0 43.13	1.42
	*−24° 11′	36	. .	. .	. .	21.3	22.3	23.7	25.0	26.5	. .	. .	. .	1 23.76	+ 0.05	5.71	17 1 18.10	1.42
	O. Arg. S. 16842	37	. .	. .	. .	17.4	18.6	20.8	36.6	39.2	40.5	41.8	43.0	22 32.24	− 27.00	5.71	17 21 59.53	1.34
	O. Arg. S. 16856	38	. .	. .	. .	. .	. .	. .	0.7	2.3	4.6	5.9	7.2	23 4.14	− 34.94	5.71	17 22 23.49	1.34
	Lalande 31931.	39	12.9	15.0	16.2	26.3	27.4	28.7	30.0	31.0	41.1	42.3	44.5	26 28.67	+ 0.05	5.71	17 26 23.01	1.36
	*−37° 19′	40	50.8	53.5	54.9	6.9	8.1	9.6	11.1	12.7	24.7	25.8	28.6	29 9.70	0.07	5.71	17 29 4.06	1.52
	*−32° 5′ ±	41	56.3	58.8	0.0	11.5	12.6	14.0	15.4	16.7	28.3	29.4	31.8	33 14.07	+ 0.06	5.71	17 33 8.42	+ 1.51
	Lalande 32322.	42	. .	. .	. .	34.8	36.2	38.6	57.9	1.1	2.5	4.1	5.7	35 52.61	− 32.67	5.71	17 35 14.23	− 0.02
	B. A. C. 6016	43	30.3	32.7	34.0	45.4	46.5	47.9	49.3	50.6	1.9	3.2	5.7	40 47.95	+ 0.06	5.71	17 40 42.30	+ 1.50
	*−31° 20′	44	56.7	58.2	0.4	11.9	13.0	14.4	15.8	17.0	28.3	29.5	31.9	43 14.28	+ 0.06	5.71	17 43 8.63	1.50
	*−31° 16′	45	. .	. .	. .	. .	. .	. .	21.6	24.5	25.9	27.4	28.9	44 25.66	− 39.31	5.71	17 43 40.64	1.50
	Lacaille 7469	46	. .	. .	. .	53.6	54.9	56.2	57.6	58.8	10.2	11.3	13.8	44 2.05	− 5.76	5.71	17 43 50.58	1.50
	*−38° 33′	47	57.3	0.0	1.4	13.8	15.0	16.7	18.3	19.6	31.9	33.2	35.8	50 16.64	+ 0.08	5.71	17 50 11.01	1.55
	O. Arg. S. 17466	48	42.3	44.6	45.8	. .	. .	. .	. .	. .	11.8	13.0	15.2	52 58.78	+ 0.05	5.71	17 52 53.12	1.44
	O. Arg. S. 17467	49	. .	. .	. .	20.6	21.8	24.0	40.9	43.4	44.8	46.2	47.5	53 36.15	− 28.47	5.71	17 53 1.97	1.44
	B. A. C. 6108	50	33.0	35.5	36.7	47.3	48.5	49.8	51.2	52.3	3.0	4.0	6.3	56 49.78	+ 0.06	− 5.70	17 56 44.14	+ 1.45

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 19, 16.9	− 5.71	+ 0.005	− 0.03	+ 0.04

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 19 Y.	*−22° 54′ . . .	1	36.9	39.1	40.3	. .	. .	. .	26.2	28.6	29.9	31.4	33.0	0 10.68	− 17.38	− 5.70	17 59 47.60	+ 1.43
	*−22° 53′ . . .	2	45.2	47.3	48.5	. .	. .	. .	. .	. .	14.3	15.5	17.6	0 1.40	+ 0.05	5.70	17 59 55.75	1.43
	Lacaille 7605 . .	3	42.4	44.9	46.4	58.8	0.0	1.6	3.3	4.6	16.9	18.3	20.8	4 1.64	0.08	5.70	18 3 56.02	1.58
	μ Sagittarii . . .	4	47.5	49.7	50.9	1.2	2.3	3.6	4.9	6.0	16.3	17.3	19.7	6 3.58	+ 0.05	5.70	18 5 57.93	1.41
	*−27° 27′ . . .	5	. .	. .	. .	15.2	16.4	17.7	19.0	20.2	30.9	32.1	34.6	8 23.26	− 5.55	5.70	18 8 12.01	1.49
	Lalande 33598. .	6	0.7	2.9	4.0	14.3	15.4	16.6	17.9	19.0	29.1	30.3	32.5	10 16.61	+ 0.03	5.70	18 10 10.94	1.39
	Lalande 33748. .	7	32.6	34.8	35.9	45.9	47.2	48.5	49.8	50.8	1.0	2.0	4.1	13 48.42	0.05	5.70	18 13 42.77	1.40
	B. A. C. 6236 . .	8	54.1	56.5	57.8	9.3	10.4	11.9	13.2	14.5	25.8	27.2	29.6	16 11.85	0.06	5.70	18 16 6.21	1.55
	*−22° 54′ . . .	9	22.5	24.7	25.9	36.4	37.5	38.7	39.9	41.0	51.7	52.9	55.1	20 38.75	+ 0.05	5.70	18 20 33.10	+ 1.45
	δ Ursæ Minoris . .	10	. .	. .	. .	. .	. .	. .	31.0	13.0	34.0	55.0	15.5	24 29.70	− 9 28.55	5.70	. . . .	− 39.08
	B. A. C. 6321 . .	11	28.5	30.8	32.1	43.3	44.4	45.7	47.1	48.2	59.5	0.6	3.0	27 45.75	+ 0.06	5.70	18 27 40.11	+ 1.54
	*−37° 58′ . . .	12	1.3	3.5	4.8	17.5	18.6	19.8	20.9	22.5	. .	. .	. .	34 13.61	+ 6.39	5.70	18 34 14.30	1.63
	*−38° 1′ . . .	13	. .	. .	. .	47.7	49.0	51.5	10.9	14.0	15.3	16.6	18.3	35 5.41	− 32.93	5.70	18 34 26.78	1.63
	O. Arg. S. 18636 .	14	5.1	7.4	8.5	18.7	19.8	21.0	22.2	23.4	33.5	34.8	36.8	39 21.02	+ 0.05	5.70	18 39 15.37	1.42
	Weisse 1058, (1st *)	15	. .	. .	. .	45.8	46.7	48.0	49.1	50.2	. .	. .	. .	42 47.96	0.05	5.70	18 42 42.31	1.24
	Weisse 1058, (2d *)	16	34.0	36.1	37.3	. .	. .	. .	. .	. .	1.0	2.1	4.2	42 49.12	0.05	5.70	18 42 43.47	1.24
	β^1 Lyræ	17	4.3	7.0	8.2	19.7	20.9	22.4	23.8	25.0	36.5	37.8	40.3	45 22.35	0.03	5.70	18 45 16.68	0.12
	Lacaille 7922 . .	18	17.5	20.4	21.8	34.4	35.5	37.1	38.7	40.0	52.7	54.0	56.8	48 37.17	+ 0.08	5.70	18 48 31.55	1.68
26	*+42° 58′ . . .	19	23.6	26.3	27.8	41.0	42.3	44.0	45.4	46.8	0.1	1.6	4.4	48 43.94	− 0.11	25.84	15 48 17.99	0.32
	δ Scorpii	20	47.0	49.2	50.5	0.8	1.8	3.3	4.6	5.7	16.1	17.3	19.5	53 3.25	+ 0.10	25.83	15 52 37.52	+ 1.48
	O. Arg. N. 15872 .	21	18.4	23.5	27.0	. .	57.0	0.4	4.3	. .	34.5	37.8	44.0	0 0.77	− 0.37	25.83	15 59 34.57	− 2.68
	O. Arg. N. 15882 .	22	39.5	45.7	48.4	16.2	18.8	22.7	25.6	28.6	56.5	58.6	5.2	0 22.35	− 0.37	25.83	15 59 56.15	− 2.67
	ρ Ophiuchi, (N. *) .	23	55.6	57.8	58.0	9.5	10.5	11.7	13.1	14.3	24.6	25.8	28.0	18 11.72	+ 0.10	25 82	16 17 46.00	+ 1.43
	ρ Ophiuchi, (S. *) .	24	33.2	34.4	35.8	37.2	39.5	. .	44.6	47.4	48.6	50.0	51.5	18 12.22	− 0.28	25.82	16 17 46.12	1.43
	O. Arg. S. 15782 .	25	40.4	43.0	44.3	55.4	56.4	57.7	59.0	0.3	11.5	12.6	14.8	30 57.76	+ 0.13	25.81	16 30 32.08	1.45
	Lacaille 6922 . .	26	. .	. .	. .	. .	. .	. .	. .	. .	23.8	25.2	27.5	32 25.50	− 15.76	25.81	16 31 43.93	1.46
	O. Arg. S. 15850 .	27	. .	. .	. .	46.6	47.7	49.0	50.1	51.2	1.3	2.4	4.5	33 54.10	5 07	25.81	16 33 23.22	1.35
	η Herculis . . .	28	32.7	35.5	36.9	49.5	50.6	52.3	53.7	54.9	7.6	8.9	11.5	38 52.19	0.10	25.81	16 38 26.28	0.13
	*−21° 8′ . . .	29	21.1	23.2	24.4	50.0	51.0	53.1	9.5	12.2	13.5	14.8	16.2	44 53.55	− 16.31	25.80	16 44 11.44	1.38
	O. Arg. S. 16100 .	30	57.8	0.1	1.4	12.7	13.7	15.0	16.3	17.5	28.7	30.0	32.2	47 15.04	+ 0.13	25.80	16 46 49.37	1.43
	*−30° 0′ . . .	31	57.6	0.0	1.2	12.4	13.6	14.8	16.2	17.5	28.6	29.9	32.3	50 14.92	0.13	25.80	16 49 49.25	1.43
	*−29° 58′ . . .	32	. .	. .	. .	52.8	54.0	55.6	56.9	58.1	. .	. .	. .	50 55.48	0.13	25.80	16 50 29.81	1.43
	*−20° 14′ . . .	33	23.8	25.9	27.0	. .	. .	. .	. .	. .	52.4	53.5	55.9	53 39.75	0.09	25.80	16 53 14.04	1.36
	O. Arg. S. 16213 .	34	41.6	43.9	45.0	. .	. .	. .	. .	. .	10.3	11.6	13.7	53 57.68	0.09	25.80	16 53 31.97	1.36
	Lacaille 7160 . .	35	26.0	28.4	29.9	42.3	43.6	45.1	46.5	47.9	0.4	1.6	4.4	3 45.10	0.17	25.79	17 3 19.48	1.46
	Lacaille 7171 . .	36	32.0	34.8	36.1	48.6	49.9	51.5	52.9	54.3	6.9	8.2	11.0	5 51.47	+ 0.18	25.79	17 5 25.86	1.46
	*−35° 5′ . . .	37	. .	. .	. .	27.7	28.9	30.4	31.7	32.9	44.8	46.1	48.6	9 36.39	− 5.92	25.79	17 9 4.68	1.45
	Lalande 31543. .	38	. .	. .	. .	44.5	45.6	46.8	48.2	49.2	59.3	0.4	2.5	14 52.06	5.14	25.78	17 14 21.14	+ 1.31
	Weisse (2) 554 . .	39	46.5	49.2	50.6	3.0	4.2	5.8	7.3	8.6	20.9	22.4	25.0	20 5.77	0.09	25.78	17 19 39.90	− 0.06
	Weisse (2) 596 . .	40	22.1	24.2	25.4	35.5	36.5	37.8	38.9	40.2	50.3	51.4	53.5	21 37.80	0.02	25.78	17 21 12.00	+ 0.72
	O. Arg. S. 16958 .	41	27.5	29.6	30.7	41.0	42.1	43.4	44.6	45.6	55.8	56.8	58.9	27 43.27	0.02	25.78	17 27 17.47	1.31
	O. Arg. S. 16966 .	42	. .	. .	. .	5.8	6.8	8.0	9.3	10.5	20.7	21.8	24.0	28 13.36	− 5.25	25.78	17 27 42.33	1.31
	O. Arg. S. 17016 .	43	6.3	8.6	9.7	20.6	21.7	23.2	24.4	25.6	36.4	37.5	39.8	31 23.07	+ 0.12	25.77	17 30 57.42	1.39
	*−34° 15′ . . .	44	1.9	4.4	5.7	17.5	18.7	20.0	21.6	22.9	34.6	35.8	38.3	34 20.13	0.15	25.77	17 33 54.51	1.44
	*−34° 23′ . . .	45	14.5	17.3	18.7	30.4	31.4	32.7	34.2	35.6	47.3	48.6	51.3	35 32.91	0.15	25.77	17 35 7.29	1.44
	ν^2 Scorpii	46	10.1	13.0	14.3	26.9	28.1	29.7	31.3	32.6	45.3	46.5	49.3	41 29.74	+ 0.18	25.77	17 41 4.15	1.47
	*−28° 37′ . . .	47	. .	. .	. .	27.0	28.3	30.5	48.0	50.7	52.0	53.5	54.9	43 43.11	− 29.51	25.76	17 42 47.84	1.40
	*−28° 1′ . . .	48	16.3	18.7	20.0	30.9	32.0	33.4	34.8	36.0	46.8	48.0	50.4	45 33.39	+ 0.12	25.76	17 45 7.75	1.40
	*−28° 44′ . . .	49	. .	. .	. .	6.1	7.4	8.6	10.0	11.2	22.4	23.4	25.8	47 14.36	− 5.55	25.76	17 46 43.05	1.39
	O. Arg. S. 17394 .	50	41.6	43.5	44.7	55.4	56.6	57.8	59.0	0.3	11.0	12.1	14.4	49 57.85	+ 0.11	−25.76	17 49 32.20	+ 1.37

June 21. Image west 0r.46. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 26, 17.3	− 25.78	+ 0.038	− 0.17	+ 0.03

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
June 26 Y.	O. Arg. S. 17447	1	38.2	39.5	41.0	42.4	44.7	..	50.9	53.6	55.0	56.4	57.7	52 17.94	− 0.28	−25.76	17 51 51.90	+ 1.37
	O. Arg. S. 17449	2	6.8	9.1	10.4	20.9	22.0	23.4	24.7	25.8	36.4	37.6	39.8	52 23.35	+ 0.11	25.76	17 51 57.70	1.37
	B. A. C. 6098	3	..	..	..	14.0	15.0	16.3	17.6	18.7	29.0	30.2	32.3	55 21.64	− 5.23	25.76	17 54 50.65	1.33
	γ^2 Sagittarii	4	34.3	36.6	37.9	48.9	50.1	51.6	52.9	54.2	5.4	6.7	9.0	57 51.60	+ 0.13	25.75	17 57 25.98	1.42
	B. A. C. 6128	5	..	..	..	56.0	57.7	0.5	22.9	26.5	28.5	29.9	31.6	1 16.70	− 36.63	25.75	18 0 14.32	1.51
	*−28° 16′	6	59.4	1.8	3.0	13.9	15.0	16.5	17.7	18.9	30.0	31.2	33.7	4 16.46	+ 0.12	25.75	18 3 50.83	1.40
	Lacaille 7646	7	5.1	7.6	9.0	..	..	..	..	..	37.6	38.8	41.3	9 23.23	+ 0.15	25.75	18 8 57.63	1.46
	*−34° 11′	8	25.5	26.7	28.3	29.6	30.8	..	4.7	7.7	9.2	10.8	12.2	9 48.55	− 20.18	25.75	18 9 2.62	1.46
	Taylor 8458	9	22.7	25.0	26.3	37.1	38.2	39.6	40.8	41.9	..	..	..	14 33.95	+ 5.68	25.74	18 14 13.89	1.39
	*−26° 31′	10	..	..	..	53.5	54.7	56.0	57.2	58.5	..	..	..	14 55.98	+ 0.12	25.74	18 14 30.36	1.40
	*−26° 31′	11	..	..	..	13.4	14.4	16.8	33.8	36.4	37.8	39.3	40.7	15 29.08	− 28.95	25.74	18 14 34.39	1.40
	*−26° 31′	12	..	..	..	5.3	6.5	7.7	9.2	10.4	..	..	..	16 7.82	+ 0.12	25.74	18 15 42.20	1.40
	O. Arg. S. 18151	13	..	..	..	26.0	27.2	28.5	29.8	31.1	..	..	..	16 28.52	0.12	25.74	18 16 2.90	1.40
	O. Arg. S. 18160	14	41.3	43.7	44.9	55.8	56.8	58.1	59.4	0.6	11.4	12.5	14.8	16 58.12	+ 0.12	25.74	18 16 32.50	+ 1.40
	δ Ursæ Minoris	15	..	..	..	..	..	..	53.5	35.0	55.0	17.0	38.0	24 51.80	− 9 31.13	25.74	....	− 38.53
	*−21° 49′	16	22.0	24.1	25.3	35.7	36.8	38.1	39.4	40.6	50.9	52.0	54.3	29 38.11	+ 0.10	25.73	18 29 12.48	+ 1.35
	O. Arg. S. 18462	17	..	..	..	20.0	21.2	23.4	39.7	42.5	43.9	45.0	46.4	30 35.26	− 27.91	25.73	18 29 41.62	1.35
	Weisse 887	18	..	..	..	..	..	..	..	..	7.2	8.3	10.4	37 8.97	− 13.24	25.73	18 36 30.00	1.05
	*− 1° 7′	19	..	..	..	14.8	16.0	18.0	33.3	35.7	36.8	38.0	39.5	37 29.01	− 25.99	25.73	18 36 37.29	1.05
	*−30° 52′	20	44.0	47.0	48.3	59.5	0.8	2.0	3.4	4.5	15.9	17.1	19.6	43 2.01	+ 0.13	25.73	18 42 36.41	1.46
	β^1 Lyræ	21	24.6	27.2	28.5	40.0	41.3	42.6	44.1	45.3	56.9	58.1	0.6	45 42.65	− 0.12	25.73	18 45 16.80	0.05
	B. A. C. 6448	22	16.2	18.6	19.8	30.2	31.3	32.6	33.8	34.9	45.5	46.7	48.8	48 32.58	+ 0.10	25.72	18 48 6.96	1.39
July 3	*−25° 34′	23	..	..	..	33.6	34.6	36.9	53.3	55.7	57.0	58.6	59.9	45 48.70	− 28.34	27.63	15 44 52.73	1.54
	*−25° 33′	24	..	..	..	22.1	23.2	24.5	26.0	27.0	..	..	..	45 24.56	+ 0.01	27.63	15 44 56.94	1.54
	Weisse (2) 1180	25	..	..	..	..	..	..	40.4	43.7	45.1	47.0	48.5	48 44.94	− 45.27	27.63	15 47 32.04	0.41
	Weisse (2) 1201	26	..	..	..	1.5	3.1	5.9	26.0	29.2	30.8	32.5	34.2	49 20.40	35.16	27.63	15 48 17.61	0.41
	β^1 Scorpii	27	3.2	..	6.4	16.5	17.7	18.9	20.3	21.5	31.4	..	34.7	58 18.96	− 0.01	27.63	15 57 51.32	1.51
	Lacaille 6924	28	9.8	12.5	13.9	25.6	26.8	28.4	29.7	30.9	42.9	44.3	46.7	32 28.32	+ 0.04	27.62	16 32 0.74	1.48
	Lacaille 6931	29	42.8	44.1	45.6	46.9	48.1	..	20.8	23.5	24.8	26.4	27.8	34 5.08	− 19.53	27.62	16 33 17.93	1.46
	*−32° 35′	30	35.5	37.8	39.1	50.6	51.9	53.2	54.7	55.9	7.3	8.6	11.0	33 53.24	+ 0.03	27.62	16 33 25.65	1.46
	Saturn I	31	25.6	27.7	29.0	39.2	40.4	41.6	42.9	44.1	54.2	55.5	57.7	42 41.63	− 0.01	27.62	16 42 14.00	
	Saturn II	32	4.0	5.4	6.7	8.2	10.5	..	14.6	16.9	18.2	19.6	20.9	42 42.50	− 0.38	27.62	16 42 14.50	
	*−36° 58′	33	31.5	34.2	35.5	47.6	48.9	50.4	52.0	53.1	5.3	6.5	9.0	47 50.36	+ 0.04	27.62	16 47 22.78	1.46
	Lalande 30851	34	37.3	39.9	41.2	53.4	54.6	56.3	57.8	59.2	11.2	12.4	15.1	50 56.22	− 0.20	27.62	16 50 28.40	0.17
	B. A. C. 5721	35	11.1	13.4	14.9	26.2	27.4	28.7	30.0	31.2	42.6	44.1	46.5	54 28.74	+ 0.03	27.62	16 54 1.15	+ 1.43
	ε Ursæ Minoris	36	14.0	29.4	37.3	48.6	56.6	4.8	14.3	21.6	32.6	40.2	56.6	0 5.09	− 1.63	27.62	....	− 13.05
	Lacaille 7171	37	34.0	36.7	38.0	50.4	51.9	53.4	54.9	56.2	8.7	10.1	12.8	5 53.37	+ 0.05	27.62	17 5 25.80	+ 1.45
	*−33° 35′	38	..	..	..	7.0	8.4	11.0	28.7	31.2	32.6	34.4	35.8	7 23.64	− 30.67	27.62	17 6 25.35	1.42
	B. A. C. 5807	39	..	..	..	58.2	59.5	2.3	19.9	22.3	23.8	25.5	27.0	8 14.81	− 30.67	27.62	17 7 16.52	1.42
	*−35° 14′	40	1.0	3.4	4.8	16.5	17.8	19.3	20.8	22.0	33.8	35.0	37.6	14 19.27	+ 0.04	27.62	17 13 51.69	1.42
	Lacaille 7259	41	38.5	41.0	42.3	54.0	55.2	56.7	58.0	59.3	11.0	12.3	14.8	15 56.65	+ 0.04	27.62	17 15 29.07	1.42
	b Ophiuchi	42	35.8	38.2	39.4	49.8	50.8	52.3	53.6	54.6	5.2	6.3	8.8	18 52.25	0.00	27.61	17 18 24.64	1.34
	O. Arg. S. 16833	43	45.2	47.3	48.3	58.4	59.4	0.6	1.9	3.0	13.0	14.1	16.4	22 0.69	− 0.02	27.61	17 21 33.06	1.26
	O. Arg. S. 16842	44	..	..	..	25.0	26.0	27.2	28.5	29.5	..	..	..	22 27.24	0.02	27.61	17 21 59.61	1.26
	O. Arg. S. 16875	45	..	..	..	59.4	0.4	2.6	17.9	20.2	21.4	22.8	24.1	24 13.60	− 26.62	27.61	17 23 19.37	1.26
	*−38° 34′	46	..	..	..	31.6	32.9	34.5	35.9	37.3	..	..	..	26 34.44	+ 0.05	27.61	17 26 6.88	1.43
	*−38° 34′	47	..	..	..	24.4	27.3	28.7	30.4	31.7	..	..	..	27 28.50	− 42.10	27.61	17 26 18.79	1.43
	*−38° 34′	48	..	..	..	0.2	1.5	3.2	4.6	5.8	..	..	..	27 3.06	+ 0.05	27.61	17 26 35.50	1.43
	*−38° 36′	49	..	..	..	20.8	21.8	23.1	24.2	25.3	..	..	..	33 23.04	+ 0.05	27.61	17 32 55.48	1.42
	O. Arg. S. 17098	50	..	..	..	7.8	8.8	9.9	11.1	12.2	..	..	..	35 9.96	− 0.01	27.61	17 34 42.34	1.28
	B. A. C. 6017	51	3.5	5.9	7.1	18.3	19.4	20.7	22.1	23.4	34 6	35.9	38.3	41 20.84	+ 0.02	27.61	17 40 53.25	1.37
	B.A.C. 6026, (1st *)	52	59.3	1.6	2.8	13.9	15.1	16.5	17.8	19.0	30.4	31.5	33.8	43 16.52	+ 0.02	−27.61	17 42 48.93	+ 1.37

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
June 26, 17.3	− 25.78	+ 0.038	− 0.17	+ 0.03

July 3, 9h. Image west 0r.38. Clamp east.
Image west 0r.50. Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. July 3 Y.	B. A. C. 6026, (2d *)	1	34.6	35.9	37.4	38.9	41.7	. .	51.3	53.7	55.2	56.7	58.0	43 16.34	+ 0.42	−27.61	17 42 49.15	+ 1.37
	*−34° 51′ . . .	2	. .	. .	. .	. .	. .	. .	17.1	19.5	21.0	22.8	24.3	45 20.94	− 40.13	27.61	17 44 13.20	1.40
	B. A. C. 6038 . .	3	. .	. .	. .	. .	. .	. .	44.7	47.5	48.7	50.4	52.0	45 48.66	− 40.13	27.61	17 44 40.92	1.40
	Lacaille 7514 . .	4	33.7	36.4	37.8	50.7	52.1	53.7	55.4	56.6	9.5	10.9	13.7	50 53.68	+ 0.06	27.61	17 50 26.13	1.43
	O. Arg. S. 17469 .	5	. .	. .	. .	32.2	33.4	34.8	36.3	37.4	48.4	49.7	52.2	53 40.55	− 5.70	27.61	17 53 7.24	1.36
	O. Arg. S. 17558 .	6	39.5	42.0	43.1	53.9	55.0	56.5	57.9	59.0	9.7	11.1	13.5	56 56.47	+ 0.01	27.61	17 56 28.87	1.34
	*−22° 54′ . . .	7	7.2	9.5	10.5	21.2	22.2	23.4	24.8	25.8	36.2	37.4	39.7	0 23.45	0.00	27.61	17 59 55.84	1.30
	*−23° 22′ . . .	8	23.8	26.0	27.1	37.7	38.7	39.9	41.2	42.4	53.0	54.0	56.1	3 39.99	0.00	27.61	18 3 12.38	1.30
	O. Arg. S. 17833 .	9	31.1	33.3	34.6	45.3	46.3	47.6	48.8	50.0	0.7	1.8	4.2	5 47.61	+ 0.01	27.61	18 5 20.01	1.31
	*−18° 40′ . . .	10	33.1	35.3	36.4	46.7	47.7	49.0	50.2	51.3	1.4	2.5	4.8	7 48.95	− 0.01	27.61	18 7 21.33	1.25
	B. A. C. 6194 . .	11	4.4	6.7	7.9	18.7	20.0	21.3	22.6	23.8	34.4	35.7	38.1	10 21.24	+ 0.01	27.61	18 9 53.64	1.33
	*−29° 36′ . . .	12	. .	. .	. .	30.8	31.9	33.5	34.7	35.9	. .	. .	. .	16 33.36	+ 0.02	27.61	18 16 5.77	1.35
	*−29° 36′ . . .	13	17.7	20.1	21.4	. .	. .	. .	. .	. .	48.6	49.0	52.3	16 34.85	+ 0.02	27.61	18 16 7.26	1.35
	O. Arg. S. 18198 .	14	. .	. .	. .	31.7	32.9	35.2	51.0	53.1	54.3	56.0	57.4	18 46.45	− 27.42	27.61	18 17 51.42	1.27
	*−36° 54′ . . .	15	35.2	37.6	38.9	51.1	52.4	53.8	55.2	56.6	8.7	10.1	12.7	21 53.85	+ 0.04	27.61	18 21 26.28	1.41
	*−36° 55′ . . .	16	10.8	13.3	14.7	27.0	28.2	. .	30.8	32.0	44.4	45.8	48.3	27 29.53	0.04	27.60	18 27 1.97	1.41
	B. A. C. 6331 . .	17	. .	. .	. .	32.7	33.8	35.0	36.4	37.5	. .	. .	. .	29 35.08	0.01	27.60	18 29 7.49	1.32
	λ Coronæ Australis	18	58.8	1.4	2.7	14.9	16.2	17.7	19.3	20.5	32.9	34.4	37.1	35 17.81	+ 0.05	27.60	18 34 50.26	1.42
	β Lyræ	19	26.6	29.1	30.3	41.8	43.0	44.6	46.0	47.2	58.6	0.0	2.4	45 44.51	− 0.18	27.60	18 45 16.73	0.99
	O. Arg. S. 18878 .	20	1.8	3.9	5.1	15.6	16.7	. .	19.1	20.2	30.6	31.9	34.0	50 17.89	0.01	27.60	18 49 50.28	1.39
	ξ² Sagittarii . . .	21	. .	. .	. .	. .	. .	. .	56.7	58.9	0.1	1.7	2.9	51 0.06	35.39	27.60	18 49 57.07	1.39
	*−13° 4′ . . .	22	16.4	18.5	19.6	29.5	30.5	31.8	33.0	34.1	44.1	45.1	47.2	0 31.80	0.02	27.60	19 0 4.18	1.30
	ι Lyræ	23	. .	. .	. .	4.8	6.2	7.6	9.0	10.3	. .	. .	. .	3 7.58	0.19	27.60	19 2 39.79	0.02
	Lalande 36238. .	24	23.7	26.3	27.7	39.6	40.9	42.3	43.9	45.2	57.0	58.3	0.9	9 42.35	0.19	27.60	19 9 14.56	+ 0.02
	Lalande 36402. .	25	50.6	53.4	54.7	7.1	8.5	9.9	11.5	12.8	25.2	26.7	29.3	13 9.97	0.20	27.60	19 12 42.17	− 0.10
	δ Aquilæ	26	8.4	10.5	11.5	21.1	22.1	23.4	24.6	25.6	35.2	36.4	38.3	19 23.37	0.07	27.60	19 18 55.70	+ 0.93
6	ε Coronæ Borealis .	27	23.6	25.9	27.1	38.0	39.1	40.4	41.8	42.9	53.7	55.0	57.4	52 40.45	− 0.19	28.73	15 52 11.53	0.90
	B. A. C. 5595 . .	28	0.7	3.1	4.3	14.8	16.3	17.6	18.8	20.0	30.6	31.8	34.3	36 17.48	+ 0.05	28.78	16 35 48.75	1.43
	Saturn I . . .	29	20.5	21.9	23.3	24.6	26.8	. .	31.2	33.4	34.8	36.2	37.6	41 59.03	0.39	28.79	16 41 30.63	
	Saturn II . . .	30	44.6	46.7	48.0	58.2	59.3	0.6	1.9	3.0	13.2	14.4	16.7	42 0.60	0.02	28.79	16 41 31.83	
	*−21° 8′ . . .	31	24.2	26.4	27.5	37.7	39.0	40.1	41.4	42.4	52.6	54.1	56.1	44 40.14	0.02	28.79	16 44 11.37	1.37
	*−30° 5′ . . .	32	2.0	4.6	5.7	16.6	17.8	19.0	20.3	21.4	32.6	33.9	36.6	48 19.14	+ 0.06	28.80	16 47 50.40	1.43
	*−25° 51′ . . .	33	. .	. .	. .	40.9	42.1	43.4	44.6	45.8	56.3	57.8	0.1	50 48.88	− 5.49	28.80	16 50 14.59	1.40
	O. Arg. S. 16233 .	34	31.6	33.9	35.0	45.2	46.3	47.7	48.9	50.0	0.2	1.4	3.7	54 47.63	+ 0.02	28.81	16 54 18.84	+ 1.35
	ε Ursæ Minoris. .	35	15.3	31.0	38.9	49.8	57.4	6.3	15.3	21.9	33.7	42.0	57.5	0 6.28	− 2.13	28.81	. . . .	− 12.75
	*−35° 9′ . . .	36	35.2	36.3	37.6	38.8	39.8	. .	14.0	16.4	17.9	19.8	21.6	5 57.74	− 20.06	28.82	17 5 8.86	+ 1.43
	B. A. C. 5824 . .	37	2.2	4.6	5.9	17.2	18.5	19.9	21.5	22.7	33.8	35.1	37.5	10 19.90	+ 0.07	28.83	17 9 51.14	1.41
	Lacaille 7245 . .	38	13.9	16.5	17.9	29.9	31.2	32.9	34.4	35.7	47.6	49.1	51.6	14 32.79	0.10	28.83	17 14 4.06	1.43
	Lacaille 7269 . .	39	40.7	43.3	44.5	56.3	57.5	58.8	0.2	1.4	13.1	14.5	17.0	16 58.85	0.08	28.83	17 16 30.10	1.41
	*−17° 41′ . . .	40	55.9	57.3	58.6	59.9	2.4	. .	. .	. .	8.9	10.3	11.7	22 3.12	8.55	28.84	17 21 42.83	1.27
	O. Arg. S. 16847 .	41	18.7	20.9	22.0	32.1	33.2	34.4	35.7	36.7	46.8	48.0	50.3	22 34.44	+ 0.01	28.84	17 22 5.61	1.27
	O. Arg. S. 16854 .	42	. .	. .	. .	. .	. .	. .	23.0	25.2	26.6	28.0	29.2	23 26.40	− 34.58	28.84	17 22 22.98	1.27
	*−32° 26′ . . .	43	2.1	4.7	6.0	. .	. .	. .	. .	. .	34.0	35.2	37.8	26 19.97	+ 0.07	28.85	17 25 51.19	1.39
	*−32° 27′ . . .	44	. .	. .	. .	20.0	21.3	22.6	23.8	25.1	. .	. .	. .	26 22.56	0.07	28.85	17 25 53.78	1.39
	B. A. C. 5955 . .	45	13.4	15.8	17.1	28.2	29.2	30.6	32.0	33.2	44.3	45.5	48.0	31 30.66	0.06	28.85	17 31 1.87	1.36
	*−35° 14′ . . .	46	53.1	55.8	57.0	8.8	10.0	11.5	13.0	14.3	26.1	27.4	30.0	35 11.55	0.08	28.86	17 34 42.77	1.39
	Lacaille 7448 . .	47	55.7	58.2	59.4	11.1	12.3	13.8	15.4	16.7	28.6	29.9	32.4	41 13.95	0.08	28.86	17 40 45.17	1.39
	*−34° 41′ . . .	48	13.2	15.6	16.9	. .	. .	. .	. .	. .	45.9	47.0	49.5	45 31.35	0.08	28.87	17 45 2.56	1.38
	*−34° 41′ . . .	49	. .	. .	. .	30.1	31.4	32.8	34.1	35.3	. .	. .	. .	45 32.74	+ 0.08	28.87	17 45 3.95	+ 1.38
	B. A. C. 6062 . .	50	. .	. .	. .	17.2	18.5	20.0	21.6	23.0	. .	. .	. .	48 20.06	− 0.27	28.87	17 47 50.92	− 0.22
	*−28° 40′ . . .	51	38.7	. .	42.4	53.7	54.7	56.0	57.3	58.5	9.4	. .	13.0	52 55.97	+ 0.05	−28.88	17 52 27.14	+ 1.33

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 3, 17.8	− 27.61	+ 0.009	− 0.16	− 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.		Clock.	Observed R. Ascension.	Reduct'n to 1870.0.	
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.		m. s.	s.	h. m. s.		s.
1869. July 6 Y.	γ² Sagittarii . . .	1	37.6	40.0	41.1	52.4	53.6	54.8	56.2	57.5	8.7	10.0	12.4	57 54.94	+	0.06	−28.89	17 57 26.11	+	1.34
	Lacaille 7588 . .	2	38.3	40.9	42.1	53.6	54.8	56.3	57.5	58.8	10.4	11.6	14.2	1 56.23		0.07	28.89	18 1 27.41		1.36
	*−28° 16′ . . .	3	2.6	4.9	6.2	17.2	18.4	19.6	20.8	21.9	33.0	34.2	36.5	4 19.57	+	0.05	28.89	18 3 50.73		1.32
	O. Arg. S. 17797 .	4	. .	. .	. .	59.6	0.7	2.8	19.9	22.3	23.8	25.2	27.6	5 15.24	−	28.99	28.89	18 4 17.36		1.32
	O. Arg. S. 17803 .	5	. .	. .	. .	49.8	50.8	52.1	53.5	54.7	. .	. .	. .	4 52.18	+	0.05	28.89	18 4 23.34		1.32
	O. Arg. S. 17922 .	6	5.4	7.7	8.9	19.5	20.8	22.2	23.6	24.6	35.3	36.5	38.9	8 22.13		0.04	28.90	18 7 53.27		1.30
	*−26° 30′ ± . .	7	. .	. .	. .	57.1	58.2	59.4	0.7	1.8	. .	. .	. .	14 59.44	+	0.05	28.90	18 14 30.59		1.30
	*−26° 30′ ± . .	8	. .	: .	. .	16.8	18.0	19.7	36.6	38.8	40.2	41.6	43.0	15 31.84	−	28.52	28.91	18 14 34.41		1.30
	O. Arg. S. 18151 .	9	15.2	17.6	18.6	29.5	30.7	31.9	33.3	34.5	45.0	46.3	48.6	16 31.93	+	0.05	28.91	18 16 3.07		1.30
	O. Arg. S. 18160 .	10	. .	. .	. .	59.2	0.3	1.6	2.9	3.9	14.8	16.0	18.3	17 7.12	−	5.51	28.91	18 16 32.70		1.30
	*−36° 54′ . . .	11	36.6	39.0	40.2	. .	. .	. .	. .	. .	10.5	11.5	13.8	21 55.27	+	0.09	28.91	18 21 26.45		1.38
	*−36° 54′ . . .	12	56.4	58.5	59.7	. .	. .	. .	. .	. .	29.8	31.2	33.7	25 14.88		0.09	28.92	18 24 46.05		1.38
	*−36° 54′ . . .	13	33.0	34.5	35.9	37.3	40.7	. .	55.6	58.2	59.8	1.5	3.0	25 17.95	+	0.52	28.92	18 24 49.55	+	1.38
	Lalande 34412 .	14	35.6	38.2	39.6	51.5	52.8	54.5	55.9	57.1	9 3	10.7	13.4	28 54.42	−	0.25	28.92	18 28 25.25	−	0.20
	*−12° 45′ . . .	†15	37.4	. .	41.1	50.9	52.0	53.1	54.3	55.4	5.0	. .	8.1	31 53.03	−	0.01	28.93	18 31 24.09	+	1.14
	O. Arg. S. 18568 .	16	4.8	7.2	8.3	18.9	20.0	21.2	22.5	23.8	34.4	35.5	38.0	35 21.33	+	0.04	28.93	18 34 52.44		1.30
	Weisse 971 . .	17	50.2	52.3	53.5	3.2	4.3	5.6	6.7	7.9	17.6	18.7	21.0	40 5.55	−	0.01	28.94	18 39 36.60		1.13
	*−30° 52′ . . .	18	48.1	50.6	51.7	3.0	4.3	5.5	6.9	8.2	19.3	20.5	23.0	43 5.55	+	0.06	28.94	18 42 36.67		1.34
	*−33° 26′ . . .	19	37.2	39.8	40.9	52.5	53.7	. .	56.6	57.8	9.3	10.8	13.1	47 55.17		0.08	28.95	18 47 26.30		1.36
	*−37° 30′ . . .	20	35.0	37.7	39.0	51.3	. .	53.9	. .	56.7	8.9	10.1	12.7	49 53.92	+	0.10	28.95	18 49 25.07		1.39
	ζ Aquilæ	21	39.0	41.2	42.3	52.2	53.2	54.6	55.8	56.8	6.7	7.9	10.0	59 54.52	−	0.12	28.96	18 59 25.44		0.63
	*−10° 1′ . . .	22	9.6	11.7	12.8	22.6	23.6	24.8	26.0	27.1	36.9	37.9	40.1	2 24.83	−	0.02	28.96	19 1 55.85		1.10
	*−19° 18′ . . .	23	31.9	34.4	35.5	45.6	46.6	47.8	49.0	50.0	0.4	1.6	3.7	9 47.86	+	0.02	28.97	19 9 18.91		1.23
	*−19° 18′ . . .	24	. .	. .	. .	. .	. .	. .	43.7	45.9	47.2	48.7	49.9	10 47.08	−	34.91	28.97	19 9 43.20		1.32
	*−19° 18′ . . .	25	. .	. .	. .	19.6	20.6	21.9	23.1	24.4	. .	. .	. .	10 21.92	+	0.02	28.97	19 9 52.97	+	1.23
	Lalande 36402. .	26	. .	. .	. .	26.5	28.1	30.7	49.5	52.3	53.8	55.8	57.2	13 44.24	−	33.07	28.98	19 12 42.19	−	0.31
	*+36° 30′ . . .	27	. .	. .	. .	52.1	53.5	56.1	14.4	17.1	18.6	20.4	21.7	16 9.24		32.06	28.98	19 15 8.20		0.19
	τ Draconis . . .	28	. .	. .	. .	29.9	33.9	38.1	42.3	45.8	. .	. .	. .	18 38.00		0.97	28.98	19 18 8.05		5.91
	4 Cygni	29	38.9	41.6	42.8	54.8	56.0	57.6	58.9	0.2	12.1	13.4	16.0	21 57.48		0.24	28.99	19 21 28.25	−	0.16
	*+19° 29′ . . .	30	22.6	24.8	26.3	. .	. .	. .	. .	. .	51.1	52.3	54.5	29 38.60		0.15	29.00	19 29 9.45	+	0.38
	*+19° 29′ . . .	31	33.3	35.6	36.9	. .	. .	. .	. .	. .	1.6	2.9	5.2	29 49.25		0.15	29.00	19 29 20.10	+	0.38
	11 Cygni	32	18.6	21.0	22.5	34.6	35.8	37.4	38.8	40.0	52.1	53.5	56.0	31 37.30		0.25	29.00	19 31 8.05	−	0.19
	O. Arg. S. 19874 .	33	. .	. .	. .	49.8	51.0	52.4	53.7	54.9	5.6	6.9	9.3	34 57.95		5.53	29.01	19 34 23.41	+	1.34
	*−29° 8′ . . .	34	3.0	5.4	6.9	. .	. .	. .	54.3	56.7	58.0	59.6	1.1	39 38.12	−	17.83	29.01	19 38 51.28		1.36
	O. Arg. S. 20002 .	35	. .	11.4	12.8	23.3	24.4	25.7	27.1	28.2	39.4	40.5	. .	43 25.87	+	0.05	29.02	19 42 56.90		1.34
	O. Arg. S. 20063 .	36	33.6	35.9	37.0	47.6	48.7	50.1	51.4	52.4	2.8	4.1	6.4	47 50.00	+	0.04	29.02	19 47 21.02		1.32
	O. Arg. S. 20090 .	37	. .	. .	. .	0.8	1.9	4.2	20.8	23.2	24.5	26.0	27.4	50 16.10	−	28.54	29.02	19 49 18.54		1.35
	O. Arg. S. 20175 .	38	31.4	33.7	34.7	44.8	45.8	47.2	48.4	49.3	59.7	0.8	3.2	55 47.18	+	0.02	29.03	19 55 18.17		1.26
	O. Arg. S. 20180 .	39	. .	. .	. .	23.6	24.7	26.9	42.4	44.7	46.0	47.5	48.8	56 38.08	−	26.97	29.03	19 55 42.08	+	1.26
	Lalande 38597 .	40	53.8	56.6	57.7	9.3	10.6	12.0	13.5	14.7	26.2	27.6	30.1	3 12.01		0.23	29.04	20 2 42.74		0.00
	λ Ursæ Minoris . .	41	. .	. .	. .	. .	. .	. .	. .	. .	30.0	34.0	19.0	8 47.67	−	11 56.84	29.05	. . . .	−	123.44
	π Capricorni . .	†42	42.0	43.3	44.6	45.9	48.6	. .	18.0	19.1	20.3	21.6	22.6	20 2.60	+	17.78	29.06	20 19 51.32	+	1.31
9	Lacaille 6910 . .	43	. .	. .	. .	. .	. .	. .	28.4	30.8	32.4	34.1	35.6	31 32.26	−	41.20	29.18	16 30 21.88		1.50
	Lacaille 6923 . .	44	13.5	15.9	17.2	29.3	30.5	32.1	33.5	34.9	47.1	48.6	51.2	32 32.16	+	0.01	29.18	16 32 2.99		1.50
	O. Arg. S. 15841 .	45	. .	. .	. .	31.7	33.1	35.5	52.5	55.0	56.3	58.0	59.5	34 47.70	−	29.60	29.18	16 33 48.92		1.47
	Saturn I . . .	46	2.6	4.8	5.9	16.2	17.3	18.6	19.8	20.9	31.4	32.5	34.7	41 18.61	−	0.04	29.18	16 40 49.39		
	Saturn II . . .	47	41.0	42.4	43.7	45.0	47.3	. .	51.5	53.8	55.1	56.6	57.8	41 19.42	+	0.33	29.18	16 40 50.57		.
	O. Arg. S. 16050 .	48	3.9	6.6	8.0	18.5	19.7	21.2	22.5	23.7	34.3	35.6	38.0	45 21.09	−	0.02	29.18	16 44 51.89		1.42
	*−31° 7′ . . .	49	. .	. .	. .	13.4	14.5	15.9	17.4	18.5	. .	. .	. .	47 15.94		0.01	29.18	16 46 46.75		1.44
	κ Ophiuchi . . .	50	44.0	46.1	47.2	56.9	58.0	59.3	0.5	1.5	11.2	12.3	14.5	51 59.23		0.13	29.17	16 51 29.93		0.96
	O. Arg. S. 16952 .	51	. .	11.5	12.6	22.8	24.0	25.2	26.5	27.6	37.7	38.7	. .	27 25.18	−	0.04	−29.16	17 26 55.98	+	1.26

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 6, 18.3	− 28.91	− 0.074	− 0.23	− 0.06

15. Faint.
42. Cloudy.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. July 9 Y.	B. A. C. 6017 . .	1	4.9	7.4	8.6	19.8	21.0	22.3	23.8	25.1	36.3	37.5	39.9	41 22.42	− 0.01	−29.15	17 40 53.26	+ 1.35
	B. A. C. 6026 . .	2	. .	. .	. .	15.6	16.8	17.8	19.1	20.1	32.1	33.2	35.7	43 23.80	5.78	29.15	17 42 48.87	1.35
	O. Arg. S. 17350 .	3	40.6	42.9	44.2	54.9	56.1	57.4	58.7	59.9	10.6	11.8	14.2	47 57.39	0.02	29.15	17 47 28.22	1.31
	O. Arg. S. 17378 .	4	59.6	1.8	3.0	13.9	14.9	16.1	17.4	18.6	29.5	30.6	32.7	49 16.19	0.02	29.15	17 48 47.02	+ 1.20
	35 Draconis . . .	5	. .	. .	. .	43.9	49.3	54.9	59.5	4.2	. .	. .	. .	55 54.36	1.22	29.15	17 55 23.99	− 6.96
	Rumker 6208 . .	6	6.0	8.7	10.3	24.1	25.5	27.1	28.7	30.2	44.0	45.4	48.4	59 27.13	0.33	29.14	17 58 57.56	− 0.57
	(* 33) Washington	7	45.3	47.6	48.7	58.9	59.8	0.9	2.2	3.3	13.4	14.6	16.7	3 1.04	0.05	29.14	18 2 31.85	+ 1.20
	*−36° 26′ . . .	8	. .	. .	. .	39.8	41.3	43.8	2.2	4.9	6.3	8.2	9.5	5 57.00	32.05	29.14	18 4 55.81	− 0.10
	*−25° 59′ . . .	9	48.9	51.4	52.6	3.4	4.5	5.8	7.0	8.1	18.8	20.2	22.5	11 5.75	0.02	29.13	18 10 36.60	+ 1.28
	*−26° 31′ . . .	10	26.3	28.4	29.7	40.5	41.8	43.1	44.4	45.5	56.2	57.4	59.9	14 43.02	0.02	29.13	18 14 13.87	1.28
	Taylor 8458 . .	11	. .	. .	. .	. .	. .	. .	. .	. .	12.6	13.9	16.3	15 14.27	14.84	29.13	18 14 30.30	1.28
	*−26° 29′ . . .	12	. .	. .	. .	8.8	10.0	11.3	12.6	14.0	24.7	25.8	27.9	16 16.89	5.63	29.13	18 15 42.13	1.28
	O. Arg. S. 18151 .	13	. .	. .	. .	. .	. .	. .	5.3	7.7	9.1	10.6	11.9	17 8.92	36.85	29.13	18 16 2.94	1.28
	O. Arg. S. 18160 .	14	. .	. .	. .	. .	. .	. .	34.8	37.3	38.7	40.2	41.4	17 38.48	36.85	29.13	18 16 32.50	1.28
	Lacaille 7728 . .	15	11.6	14.0	15.3	26.8	28.0	29.5	31.1	32.3	44.0	45.3	47.8	21 29.61	0.00	29.13	18 21 0.48	+ 1.34
	Lalande 34274 .	16	26.9	29.3	30.6	42.4	43.9	45.4	46.7	47.9	59.8	1.2	3.7	24 45.25	0.25	29.13	18 24 15.87	− 0.11
	1 Aquilæ	17	20.9	23.0	24.1	33.7	34.8	36.1	37.3	38.4	47.9	49.2	51.2	28 36.05	0.08	29.13	18 28 6.84	+ 1.06
	O. Arg. S. 18489 .	18	55.6	57.7	58.8	8.9	10 0	11.2	12.5	13.7	23.8	25.1	27.1	31 11.31	0.04	29.13	18 30 42.14	1.19
	*−11° 13′ . .	19	27.9	29.9	31.1	41.1	42.2	43.4	44.6	45.6	55.4	56.6	58.4	35 43.29	0.07	29.12	18 35 14.10	1.09
	Lalande 35046. .	20	. .	. .	. .	59.5	0.6	1.8	3.0	4.1	14.4	15.4	17.6	45 7.05	5.34	29.12	18 44 32.59	1.21
	O. Arg. S. 18831 .	21	59.0	1.3	2.5	13.5	14.6	16.0	17.3	18.4	29.4	30.6	32.9	48 15.95	0.02	29.12	18 47 46.81	1.29
	O. Arg. S. 18883 .	22	11.8	14.2	15.4	26.5	27.6	29.0	30.3	31.5	42.6	43.8	46.3	50 29.00	0.01	29.12	18 49 59.87	1.29
	ζ Aquilæ	23	39.2	41.4	42.5	52.5	53.5	54.7	55.9	56.9	6.9	8.0	10.1	59 54.69	0.14	29.11	18 59 25.44	0.61
	Weisse 1525 . .	24	. .	. .	. .	18.0	19.1	20.4	21.7	22.6	. .	. .	. .	0 20.36	0.14	29.11	18 59 51.11	0.61
	Weisse 1539 . .	25	33.7	35.8	36.8	46.7	47.8	49.1	50.4	51.4	1.3	2.4	4.5	0 49.08	0.14	29.11	19 0 19.83	0.61
	Weisse 187. . .	26	24.2	26.5	27.6	37.3	38.3	39.6	40.8	41.8	51.4	52.5	54.7	9 39.52	0.07	29.11	19 9 10.34	1.05
	Weisse 277. . .	27	. .	. .	. .	3.7	4.8	6.1	7.5	8.5	18.2	19.2	21.4	13 11.18	5.21	29.11	19 12 36.86	+ 0.66
	*+36° 29′ . . .	28	. .	. .	. .	52.2	53.5	56.2	14.4	17.2	18.6	20.4	21.8	16 9.29	32.07	29.11	19 15 8.11	− 0.21
	O. Arg. S. 19525 .	29	17.6	19.6	20.7	. .	. .	. .	. .	. .	35.9	37.1	39.3	18 28.37	0.04	29.10	19 17 59.23	+ 1.20
	O. Arg. S. 19623 .	30	15.4	17.7	18.9	29.1	30.1	31.4	32.7	33.8	44.1	45.3	47.4	22 31.45	0.04	29.10	19 22 2.31	1.20
	O. Arg. S. 19629 .	31	. .	. .	. .	5.9	7.1	9.4	24.9	27.1	28.5	29.8	31.2	23 20.49	27.20	29.10	19 22 24.19	1.20
	O. Arg. S. 19775 .	32	43.6	45.8	47.1	57.3	58.3	59.5	0.7	1.9	12.3	13.3	15.6	29 59.58	0.04	29.10	19 29 30.44	1.21
	O. Arg. S. 19796 .	33	. .	. .	. .	1.6	2.9	4.8	21.8	23.8	25.5	27.2	28.7	31 17.04	29.01	29.10	19 30 18.93	1.30
	*+4° 41′ . . .	34	51.2	53.1	54.3	. .	5.2	6.5	7.8	. .	18.4	19.4	21.4	38 6.37	0.11	29.09	19 37 37.17	0.82
	Weisse 958 . .	35	. .	. .	. .	31.3	32.4	33.7	34.8	35.9	. .	. .	. .	38 33.62	0.11	29.09	19 38 4.42	0.82
	O. Arg. S. 19988 .	36	34.3	36.7	37.9	48.9	50.0	51.5	52.7	53.8	4.6	5.7	8.0	42 51.28	0.02	29.09	19 42 22.17	1.30
	O. Arg. S. 20072 .	37	1.4	3.8	4.9	15.1	16.1	17.5	18.7	19.9	30.1	31.2	33.3	48 17.45	0.04	29.09	19 47 48.32	1.22
	O. Arg. S. 20123 .	38	21.5	23.7	24.9	36.0	37.1	38.2	39.3	40.4	51.8	52.9	55.1	51 38.26	0.02	29.09	19 51 9.15	+ 1.31
	λ Ursæ Minoris . .	39	. .	. .	. .	2.0	2.0	6.0	9.0	1.0	. .	. .	. .	57 4.00	14.57	29.08	. . . .	− 3.08
	a^2 Capricorni. . .	40	2.9	5.1	6.2	15.9	17.0	18.3	19.6	20.6	30.5	31.6	33.8	11 18.32	0.06	29.08	20 10 49.18	+ 1.17
12	β Orionis. . . .	41	27.0	29.3	30.3	40.0	41.0	42.3	43.5	44.5	54.2	55.4	57.4	8 42.26	0.12	27.93	. . . .	3.25
13	24 Ophiuchi . . .	42	7.8	10.0	11.2	21.6	22.7	24.2	25.5	26.6	36.7	38.0	40.4	49 24.06	0.09	27.82	16 48 56.15	1.40
	Lalande 30851 .	43	. .	. .	. .	53.6	54.9	56.4	58.0	59.2	11.4	12.7	15.4	51 2.70	6.54	27.82	16 50 28.34	0.26
	*−29° 57′ . . .	44	21.6	24.0	25.3	36.4	37.6	38.8	40.1	41.5	52.7	53.8	56.3	55 38.92	− 0.08	27.82	16 55 11.02	1.43
	*−27° 14′ . . .	45	3.8	6.0	7.2	17.9	19.0	20.5	21.8	22.8	. .	. .	. .	1 14.88	+ 5.51	27.82	17 0 52.57	1.40
	*−27° 13′ . . .	46	44.5	46.0	47.2	48.6	51.2	. .	58.7	1.2	2.4	4.0	5.4	1 24.92	+ 0.30	27.82	17 0 57.40	1.40
	*−35° 9′ . . .	47	18.0	20.6	21.8	33.6	34.7	36.3	37.7	39.0	50.7	1.7	4.8	5 36.26	− 0.07	27.82	17 5 8.37	1.44
	B. A. C. 5809 . .	48	42.4	44.8	46.0	57.1	58.4	59.8	1.2	2.2	13.4	14.7	17.0	7 59.73	0.08	27.82	17 7 31.83	1.41
	Lacaille 7245 . .	49	12.8	15.5	16.7	28.9	30.1	31.7	33.1	34.4	46.5	47.9	50.6	14 31.65	0.07	27.82	17 14 3.76	1.43
	*−30° 25′ . . .	50	. .	. .	. .	31.6	32.7	33.9	35.2	36.5	. .	. .	. .	16 33.98	0.08	27.82	17 16 6.08	1.39
	O. Arg. S. 16710 .	51	16.7	19.0	20.4	. .	. .	. .	. .	. .	47.9	49.2	51.6	16 34.13	− 0.08	−27.82	17 16 6.23	+ 1.39

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 9, 18.7	− 29.12	+ 0.029	− 0.18	− 0.10

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. July 13 Y.	Lacaille 7282	1	..	..	..	..	..	..	7.9	10.5	11.9	13.7	15.0	19 11.80	— 39.82	—27.82	17 18 4.16	+ 1.41
	O. Arg. S. 16832	2	..	..	..	51.4	52.5	53.7	54.9	55.9	..	..	..	21 53.68	0.11	27.82	17 21 25.75	1.25
	O. Arg. S. 16833	3	..	..	..	58.5	59.7	0.9	2.2	3.2	..	..	..	22 0.95	0.11	27.82	17 21 33.02	1.25
	O. Arg. S. 16842	4	11.7	13.9	15.0	25.0	26.1	27.4	28.6	29.6	39.6	40.6	42.9	22 27.31	0.11	27.82	17 21 59.38	1.25
	O. Arg. S. 16856	5	..	..	..	49.1	50.4	51.6	52.7	53.8	3.7	4.9	7.1	22 56.66	5.29	27.82	17 22 23.55	1.25
	α Ophiuchi	6	5.8	8.0	9.0	18.9	20.0	21.2	22.5	23.5	33.2	34.5	36.5	29 21.19	0.18	27.82	17 28 53.19	0.81
	*—35° 8′	7	..	..	..	..	..	..	51.2	53.7	55.1	57.0	58.6	31 55.12	40.37	27.82	17 30 46.93	1.39
	*—28° 0′	8	12.4	14.9	15.9	26.9	28.1	29.5	30.8	32.0	42.8	44.2	46.5	35 29.45	0.08	27.82	17 35 1.55	1.34
	Lacaille 7433	9	39.8	42.5	43.8	56.0	57.3	58.7	0.4	1.5	14.0	15.3	18.0	39 58.85	0.07	27.82	17 39 30.96	1.39
	*—38° 5′	10	..	..	..	26.0	27.4	28.8	30.2	31.6	43.8	45.0	47.9	40 35.09	6.39	27.82	17 40 0.88	1.39
	Weisse 835	11	22.4	24.6	25.7	35.5	36.6	37.8	39.0	40.0	50.0	51.0	53.2	43 37.80	0.11	27.81	17 43 9.88	1.20
	*—34° 32′	12	..	..	..	1.2	2.3	5.0	22.9	25.5	27.0	28.6	30.0	46 17.81	31.12	27.81	17 45 18.88	1.36
	*—34° 32′	13	..	..	..	49.6	50.9	53.4	11.3	13.9	15.4	17.1	18.5	47 6.26	31.12	27.81	17 46 7.33	1.36
	*—34° 37′	14	..	..	..	..	..	..	46.7	49.3	50.6	52.5	53.7	48 50.56	40.09	27.81	17 47 42.66	1.36
	*—34° 33′	15	..	..	..	..	..	..	4.2	6.6	8.2	10.0	11.3	49 8.06	40.09	27.81	17 48 0.16	1.36
	*—31° 25′	16	..	..	..	29.9	31.1	33.6	51.0	53.4	54.8	56.3	57.8	51 45.99	30.04	27.81	17 50 48.14	1.34
	Lalande 33089	17	15.8	18.0	19.1	29.2	30.3	31.6	32.8	33.8	43.8	45.0	47.2	57 31.51	0.11	27.81	17 57 3.59	1.19
	O. Arg. S. 17598	18	..	..	..	31.0	32.2	33.6	35.0	36.0	..	..	..	58 33.56	0.09	27.81	17 58 5.66	1.27
	O. Arg. S. 17612	19	42.1	44.6	45.9	56.4	57.5	58.8	0.1	1.2	11.6	12.9	15.3	58 58.76	— 0.09	27.81	17 58 30.86	1.26
	O. Arg. S. 17793	20	53.0	54.4	55.8	57.0	59.6	..	3.6	5.8	7.2	8.7	10.0	4 31.51	+ 0.29	27.81	18 4 3.99	1.22
	*—20° 24′	21	..	..	..	33.7	34.9	36.1	37.2	38.5	..	..	..	4 36.08	— 0.10	27.81	18 4 8.17	1.22
	O. Arg. S. 17796	22	23.4	25.6	26.8	..	..	..	..	..	52.0	53.3	55.5	4 39.43	0.10	27.81	18 4 11.52	1.22
	*—30° 27′	23	..	20.8	22.0	33.3	34.6	35.9	37.3	38.5	49.5	50.8	..	8 35.86	0.08	27.81	18 8 7.97	1.31
	*—25° 59′	24	47.8	50.2	51.2	1.9	3.0	4.5	5.8	7.1	17.7	18.9	21.2	11 4.48	0.09	27.81	18 10 36.58	+ 1.27
	δ Ursæ Minoris	25	..	..	..	47.5	5.0	24.5	45.5	3.5	..	..	..	15 25.20	4.71	27.81	.. ..	— 36.35
	1 Aquilæ	26	..	..	..	32.5	33.6	34.8	36.1	37.0	46.7	47.7	50.0	28 39.80	5.15	27.81	18 28 6.84	+ 1.04
	α Lyræ	27	..	43.8	45.3	57.8	59.0	0.7	2.3	3.5	15.6	17.3	..	33 0.59	— 0.29	27.81	18 32 32.49	— 0.27
15	Weisse 107	28	3.6	5.8	7.0	16.9	18.0	19.2	20.4	21.5	31.3	32.6	34.7	8 19.18	+ 0.05	27.29	17 7 51.94	+ 0.84
	ε Ursæ Minoris	29	11.5	27.5	34.8	46.3	52.9	1.5	11.1	19.2	31.8	39.2	54.5	0 2.75	— 0.76	27.29	.. ..	— 11.78
	Weisse 117	30	..	..	..	49.0	50.0	51.3	52.5	53.6	..	..	..	8 51.28	+ 0.05	27.29	17 8 24.04	+ 0.84
	α^1 Herculis	31	..	7.2	8.2	9.6	10.8	11.9	40.9	43.4	44.6	46.0	47.1	9 26.97	— 17.33	27.29	17 8 42.35	0.82
	θ Ophiuchi	32	10.6	12.9	14.2	24.8	25.8	27.2	28.6	29.7	40.3	41.6	43.8	14 27.23	+ 0.20	27.29	17 14 0.14	1.36
	*+35° 15′	33	42.4	45.0	46.3	58.0	59.2	0.8	2.2	3.6	15.4	16.6	19.3	17 0.80	— 0.02	27.28	17 16 33.50	0.20
	O. Arg. S. 16842	34	11.0	13.0	14.5	24.3	25.4	26.6	27.8	28.9	38.9	40.2	42.3	22 26.63	+ 0.16	27.28	17 21 59.51	1.25
	O. Arg. S. 16856	35	..	..	..	48.4	49.5	50.9	52.1	53.0	..	..	..	22 50.78	+ 0.16	27.28	17 22 23.66	+ 1.25
	Lalande 32631	36	57.8	0.4	2.0	14.3	15.4	17.0	18.5	19.8	32.1	33.5	36.0	44 16.98	— 0.05	27.28	17 43 49.65	— 0.33
	Lalande 32747	37	54.0	56.8	58.2	10.5	11.7	13.4	14.9	16.2	28.5	29.8	32.5	47 13.32	0.03	27.28	17 46 46.01	0.10
	O. Arg. N. 17660	38	9.3	12.5	14.4	..	..	..	..	..	52.7	54.3	57.5	52 33.45	0.09	27.28	17 52 6.08	0.96
	O. Arg. N. 17663	39	..	..	..	35.2	37.0	38.8	40.6	42.4	..	..	..	52 38.80	0.09	27.28	17 52 11.43	— 0.96
	72 Ophiuchi	40	22.3	24.5	25.5	35.4	36.4	37.6	38.9	39.9	49.6	50.7	52.8	1 37.60	— 0.07	27.28	18 1 10.39	+ 0.77
	O. Arg. S. 17809	41	48.4	50.6	51.7	2.0	3.1	4.4	5.5	6.6	16.8	18.0	20.2	4 4.30	+ 0.18	27.28	18 3 37.20	+ 1.21
	Lalande 33692	42	36.5	39.1	40.6	52.6	53.8	55.4	56.8	58.4	10.4	11.7	14.2	10 55.41	— 0.03	27.28	18 10 28.10	— 0.14
	Taylor 8458	43	24.2	26.5	27.7	38.6	39.7	40.9	42.2	43.3	54.1	55.4	57.5	14 40.92	+ 0.21	27.28	18 14 13.85	+ 1.26
	Lalande 33952	44	54.2	56.8	58.2	10.4	11.7	13.2	14.7	15.9	28.0	29.4	31.8	17 13.12	— 0.03	27.28	18 16 45.81	— 0.14
	Lalande 33997	45	3.7	6.4	7.7	19.7	21.0	22.5	23.9	25.2	37.3	38.5	41.2	18 22.46	— 0.03	27.28	18 17 55.15	0.14
	Weisse 473	46	22.1	24.2	25.2	34.9	35.9	37.0	38.3	39.4	48.9	49.9	52.0	21 37.07	+ 0.10	27.27	18 21 9.90	— 0.91
	O. Arg. S. 18317	47	..	..	..	49.8	50.9	52.2	53.5	54.6	5.0	6.2	8.4	23 57.57	— 5.23	27.27	18 23 25.07	+ 1.22
	B. A. C. 6304	48	..	..	..	40.8	42.0	43.3	44.6	45.8	56.3	57.5	59.7	25 48.75	5.26	27.27	18 25 16.22	1.22
	*—24° 12′	49	..	..	..	14.0	15.2	16.5	17.8	19.0	29.5	30.7	32.9	26 21.95	— 5.26	27.27	18 25 49.42	1.22
	B. A. C. 6327	50	58.6	1.0	2.3	13.2	14.4	15.8	17.1	18.2	29.3	30.4	32.8	29 15.74	+ 0.22	—27.27	18 28 48.69	+ 1.26

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 13, 14.9	— 27.82	+ 0.009	— 0.19	— 0.14

July 13, 7h. Image west $0^r.42$. Clamp west.
Image west $0^r.10$. Clamp east.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 15	α Lyræ	1	40.7	43.2	44.8	57.0	58.3	59.9	1.4	2.8	15.0	16.3	18.9	32 59.85	— 0.04	—27.27	18 32 32.54	— 0.27
Y.	51 Cephei, S. P.	2	. .	. .	. .	. .	. .	. .	. .	. .	. .	13.0	37.0	50 25.00	12 5.76	27.27	. . . .	+ 51.14
	Radcliffe 4208.	†3	59.0	33.0	53.0	30.5	47.5	7.0	28.5	45.0	25.0	42.5	17.0	58 13.41	— 1.88	27.27	18 57 44.26	— 42.42
	*—19° 18′	4	. .	. .	. .	43.7	44.9	46.0	47.3	48.4	. .	. .	. .	9 46.06	+ 0.18	27.27	19 9 18.97	+ 1.14
	*—19° 19′	5	54.5	56.5	57.8	. .	. .	. .	. .	. .	23.0	24.2	25.9	10 10.32	0.18	27.27	19 9 43.23	1.14
	*—19° 19′	6	4.4	6.4	7.7	. .	. .	. .	. .	. .	32.7	34.0	35.9	10 20.18	+ 0.18	27.27	19 9 53.09	+ 1.14
	Gr. C. 1710.	7	14.0	17.0	18.6	32.6	34.0	35.8	37.5	39.2	53.3	54.5	57.8	13 35.85	— 0.07	27.27	19 13 8.51	— 0.86
	Weisse (2) 556.	8	12.5	15.0	16.5	28.5	29.7	31.2	32.8	34.0	45.9	47.2	49.8	19 31.19	0.03	27.27	19 19 3.89	0.26
	Lalande 36732.	9	2.6	5.2	6.7	18.6	19.7	21.5	22.8	24.1	36.4	37.6	40.3	20 21.41	0.03	27.27	19 19 54.11	0.26
	*+36° 54′	10	. .	. .	. .	. .	. .	. .	5.5	8.5	10.2	11.7	13.3	21 9.84	42.11	27.27	19 20 0.46	0.26
	Lalande 36762	11	. .	. .	. .	. .	. .	. .	36.9	39.8	41.4	43.2	44.6	21 41.18	42.11	27.27	19 20 31.80	— 0.26
	O. Arg. S. 19798	12	12.6	14.0	15.7	17.0	19.4	. .	28.2	30.9	32.2	33.7	35.0	30 53.87	0.17	27.26	19 30 26.44	+ 1.24
	B. A. C. 6716	13	34.3	35.7	37.0	38.5	41.0	. .	49.5	52.3	53.6	55.0	56.4	31 15.33	0.17	27.26	19 30 47.90	1.24
	α Sagittæ	14	. .	. .	. .	41.6	42.8	44.0	45.2	46.2	56.3	57.5	59.6	34 49.15	— 5.18	27.26	19 34 16.71	0.45
	*—38° 44′	†15	. .	24.5	25.8	38.2	39.4	40.8	42.4	43.9	55.3	57.0	. .	43 40.81	+ 0.29	27.26	19 43 13.84	1.31
	β Aquilæ	16	7.0	9.0	10.2	19.8	20.8	22.1	23.4	24.5	34.0	35.0	37.0	49 22.07	+ 0.08	27.26	19 48 54.89	0.74
	O. Arg. S. 20246	17	. .	17.6	18.7	20.0	21.4	22.6	53.2	56.0	57.1	58.6	0.0	0 38.52	— 18.26	27.26	19 59 53.00	1.20
	Lacaille 8365	18	48.3	50.9	52.0	3.6	4.7	6.1	7.6	8.8	20.3	21.5	24.0	3 6.16	+ 0.24	27.26	20 2 39.14	1.28
	Weisse 101	19	. .	16.6	17.7	27.7	28.8	30.1	31.2	32.3	42.4	43.3	. .	6 30.01	0.16	27.26	20 6 2.91	1.09
	3 Capricorni.	20	21.5	23.6	24.8	34.7	35.7	37.0	38.0	39.1	49.2	50.2	52.3	9 36.92	+ 0.15	27.26	20 9 9.81	+ 1.07
	Weisse (2) 398	21	28.4	31.0	32.4	44.8	46.0	47.6	49.0	50.5	2.9	4.4	6.8	11 47.62	— 0.04	27.26	20 11 20.32	— 0.30
	Weisse 387	22	3.1	5.4	6.4	16.3	17.2	18.5	19.7	20.7	30.7	31.9	34.0	17 18.54	+ 0.16	27.26	20 16 51.44	+ 1.09
	π Capricorni.	23	2.8	5.0	6.1	16.2	17.3	. .	19.6	20.8	31.0	32.2	34.5	20 18.55	+ 0.17	27.26	20 19 51.46	1.16
16	α Ursæ Majoris	24	30.7	35.2	37.7	58.4	0.4	3.3	5.7	8.4	29.0	31.2	35.5	56 3.23	— 0.17	27.36	10 55 35.70	5.25
F.	δ′ Leonis	25	19.4	21.6	23.0	33.2	34.3	35.6	37.0	38.0	48.4	49.5	51.7	7 35.61	+ 0.03	27.37	. . . .	3.28
	Moon I.	26	39.7	41.6	43.0	52.7	53.8	55.0	56.3	57.5	7.3	8.6	10.6	11 55.10	0.14	27.38	14 11 27.86	
	ε Bootis	27	27.4	29.8	31.0	41.9	43.0	44.4	45.7	46.9	57.6	59.0	1.3	39 44.36	0.01	27.39	. . . .	1.59
	α^2 Libræ	28	51.1	53.3	54.5	4.5	5.5	6 8	8.2	9.2	19.0	20.2	22.4	44 6.79	+ 0.16	27.39	. . . .	1.85
20	ζ Ophiuchi	29	. .	. .	. .	22.0	23.0	24.3	25.6	26.6	36.4	37.4	39.6	30 29.36	— 4.97	25.63	16 29 58.76	1.37
Y.	Saturn I	30	30.2	31.4	32.7	34.2	36.4	. .	40.5	43.1	44.2	45.7	46.9	39 8.53	— 0.25	25.63	16 38 42.65	
	Saturn II	31	53.4	54.6	56.7	7.0	8.0	9.3	10.5	11.7	21.9	23.0	25.4	39 9.23	+ 0.12	25.63	16 38 43.72	
	*—36° 47′	32	10.5	13.2	14.6	26.5	27.7	29.2	30.8	32.2	. .	. .	. .	44 23.09	6.40	25.63	16 44 3.86	1.54
	*—30° 6′	33	58.3	0.9	2.1	13.2	14.5	15.8	17.1	18.4	29.5	30.6	33.2	48 15.78	0.16	25.63	16 47 50.31	1.49
	O. Arg. S. 16184	34	13.4	15.7	17.0	28.1	29.3	30.7	32.0	33.4	44.5	45.6	48.0	52 30.70	+ 0.16	25.62	16 52 5.24	+ 1.48
	Groombridge 2418	35	. .	. .	. .	30.9	34.2	38.2	42.4	46.4	. .	. .	. .	3 38.42	— 0.19	25.62	17 3 12.61	— 4.12
	Groombridge 2420	36	. .	. .	. .	25.9	29.4	33.5	37.5	41.4	. .	. .	. .	4 33.54	0.19	25.62	17 4 7.73	4.18
	O. Arg. N. 16908	37	37.5	41.7	43.8	2.9	4.8	7.0	9.4	11.5	30.3	32.4	36.5	8 7.07	— 0.08	25.62	17 7 41.37	— 1.26
	*—35° 14′	38	28.9	31.3	32.8	14.5	15.8	17.2	18.6	19.8	31.6	32.9	35.5	14 17.17	+ 0.18	25.62	17 13 51.73	+ 1.45
	*—27° 50′	39	. .	. .	. .	44.4	45.7	47.9	5.2	7.9	9.3	10.7	12.2	16 0.41	— 29.27	25.62	17 15 5.52	1.40
	O. Arg. S. 16749	40	. .	. .	. .	15.8	17.2	19.5	36.7	39.6	40.9	42.4	43.8	18 31.99	— 29.46	25.62	17 17 36.91	1.40
	α Ophiuchi	41	. .	. .	. .	16.5	17.7	18.9	20.0	21.1	. .	. .	. .	29 18.84	+ 0.04	25.62	17 28 53.26	0.83
	*—35° 26′	42	13.8	16.3	17.7	29.5	30.7	32.0	33.6	34.8	46.8	48.0	50.6	35 32.16	0.18	25.62	17 35 6.72	1.40
	Lacaille 7448	43	. .	. .	. .	7.7	9.0	10.5	11.9	13.1	. .	. .	. .	41 10.44	+ 0.18	25.62	17 40 45.00	1.39
	*—35° 18′	44	. .	. .	. .	. .	. .	. .	18.9	21.9	23.2	25.0	26.6	42 23.12	— 41.05	25.62	17 41 16.45	1.39
	*—35° 19′	45	36.0	38.6	39.9	51.9	53.0	54.6	56.0	57.4	9.0	10.3	12.7	41 54.49	+ 0.18	25.62	17 41 29.05	1.39
	*—35° 19′	46	. .	. .	. .	44.9	46.2	47.7	49.0	50.4	. .	. .	. .	42 47.64	+ 0.18	25.62	17 42 22.20	1.39
	*—35° 18′	47	. .	. .	. .	4.1	5.4	7.8	26.5	29.5	30.9	32.5	34.1	43 21.35	— 31.69	25.62	17 42 24.04	1.38
	*—34° 47′	48	. .	. .	. .	. .	. .	. .	18.7	21.6	23.2	24.7	26.0	46 22.84	40.80	25.62	17 45 16.42	1.38
	*—34° 47′	49	54.1	55.3	56.8	58.0	59.5	. .	33.5	36.5	38.0	39.5	41.0	46 17.22	20.30	25.62	17 45 31.30	1.38
	*—34° 37′	50	. .	. .	. .	22.7	24.1	26.5	45.0	47.9	49.5	51.1	52.5	48 39.91	31.42	25.62	17 47 42.87	1.38
	*—34° 35′	51	. .	. .	. .	. .	. .	. .	2.6	5.4	7.0	8.4	10.0	49 6.68	— 40.70	—25.62	17 48 0.36	+ 1.37

3. Eye and ear.
15. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 15, 18.9	— 27.27	+ 0.009	— 0.20	+ 0.10
16, 13.5	— 27.38	— 0.006	— 0.20	+ 0.10

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 20	O. Arg. S. 17419 .	1	. .	. .	. .	20.2	21.5	23.7	40.7	43.5	44.8	46.2	47.6	51 36.02	— 28.96	—25.62	17 50 41.44	+ 1.30
Y.	Moon I . . .	2	56.3	58.6	59.9	10.4	11.6	12.8	14.1	15.4	25.9	27.0	29.3	57 12.85	+ 0.13	25.61	17 56 47.37	
	Weisse (2) 44 . .	3	41.7	44.3	45.7	57.6	58.8	0.4	1.9	3.2	15.0	16.4	19.0	3 0.36	— 0.01	25.61	18 2 34.74	— 0.04
	μ Sagittarii . . .	4	7.5	9.8	10.9	21.3	22.4	23.6	24.8	26.0	36.4	37.5	39.7	6 23.63	+ 0.12	25.61	18 5 58.14	+ 1.22
	B. A. C. 6192 . .	5	22.9	25.5	26.8	38.4	39.7	41.2	42.5	43.8	55.3	56.5	58.9	9 41.05	0.17	25.61	18 9 15.61	1.32
	*—38° 39′ . . .	6	40.0	42.6	44.1	56.5	57.7	59.3	0.7	2.0	14.6	15.8	18.5	15 59.25	+ 0.19	25.61	18 15 33.83	1.34
	*—32° 26′ . . .	7	. .	. .	. .	3.5	4.7	6.0	7.4	8.6	20.2	21.3	23.7	17 11.92	— 5.73	25.61	18 16 40.58	1.30
	21 Sagittarii . . .	8	. .	. .	. .	13.4	14.6	16.8	33.1	35.6	36.9	38.3	39.6	18 28.54	— 27.67	25.61	18 17 35.26	1.19
	*—32° 23′ . . .	9	48.0	50.4	51.8	3.2	4.3	5.8	7.1	8.4	19.9	21.0	23.4	23 5.75	+ 0.17	25.61	18 22 40.31	+ 1.28
	*+61° 9′ . . .	10	. .	. .	. .	21.3	23.4	25.9	28.3	30.6	. .	. .	. .	25 25.90	— 0.09	25.61	18 25 0.20	— 2.22
	*—23° 31′ . . .	11	4.1	6.4	7.7	18.2	19.4	20.6	21.9	23.0	33.5	34.7	37.0	30 20.59	+ 0.13	25.61	18 29 55.11	+ 1.20
	*—37° 58′ . . .	12	55.3	56.5	58.0	59.6	2.4	. .	. .	. .	. .	. .	. .	33 58.36	42.00	25.61	18 34 14.75	1.30
	*—38° 1′ . . .	13	33.5	36.4	37.6	50.0	51.5	52.6	53.9	55.4	7.7	9.2	11.4	34 52.65	+ 0.19	25.61	18 34 27.23	1.30
	51 Cephei, S. P. . .	14	. .	. .	. .	. .	. .	. .	35.0	19.0	44.0	14.0	38.0	49 42.00	—11 23.40	25.61	. . . .	49.95
	O.Arg.S.19083,(1st*)	15	32.3	34.5	35.7	45.8	46.8	48.0	49.2	50.4	0.4	1.5	3.6	59 48.02	+ 0.11	25.60	18 59 22.53	1.08
	O.Arg.S.19083,(2d*)	16	10.9	12.1	13.5	14.9	17.0	. .	. .	. .	. .	. .	. .	59 13.68	+ 34.48	25.60	18 59 22.56	1.08
	*—18° 10′ . . .	17	45.2	46.5	48.0	49.4	51.6	. .	54.6	57.3	58.4	59.8	1.0	10 23.18	— 0.26	25.60	19 9.57.32	1.09
	*—18° 14′ . . .	18	12.4	14.6	15.9	25.9	27.0	28.2	29.4	30.6	40.8	41.8	44.0	10 28.24	+ 0.11	25.60	19 10 2.75	1.09
	Lalande 36252 .	19	. .	. .	. .	44.6	45.7	48.0	4.5	7.2	8.4	9.8	11.2	11 59.92	— 27.99	25.60	19 11 6.33	1.14
	O. Arg. S. 19451 .	20	21.7	24.3	25.4	36.3	37.3	38.6	39.8	40.9	51.8	53.0	55.3	15 38.58	+ 0.15	25.60	19 15 13.13	1.18
	O. Arg. S. 19502 .	21	. .	. .	. .	30.9	32.0	33.3	34.6	35.8	46.5	47.7	49.9	17 38.84	— 5.41	25.60	19 17 7.83	1.17
	κ Aquilæ	22	3.1	5.3	6.4	16.0	17.0	18.3	19.5	20.5	30.2	31.4	33.5	30 18.29	+ 0.06	25.60	19 29 52.75	+ 0.94
	11 Cygni	23	. .	. .	. .	31.0	32.3	33.8	35.5	36.8	48.6	50.0	52.6	31 40.08	— 6.21	25.60	19 31 8.27	— 0.27
	*+38° 32′ . . .	24	11.5	14.0	15.6	28.0	29.1	30.6	32.2	33.4	46.0	47.3	50.0	34 30.70	— 0.02	25.60	19 34 5.08	— 0.36
	*—24° 15′ . . .	25	17.0	19.4	20.6	31.2	32.3	. .	34.9	36.0	46.5	47.7	50.0	47 33.56	+ 0.14	25.60.	19 47 8.10	+ 1.14
	*—22° 39′ . . .	26	6.2	8.4	9.6	20.2	21.3	22.5	23.7	24.9	35.4	36.5	38.7	49 22.49	+ 0.13	25.60	19 48 57.02	+ 1.13
	*+36° 11′ . . .	27	33.9	35.4	37.0	38.7	41.4	. .	55.5	58.6	0.0	1.7	3.2	56 18.54	— 0.44	25.60	19 55 52.50	— 0.24
	*+36° 11′ . . .	28	1.6	4.4	5.8	. .	. .	. .	. .	. .	35.0	36.4	39.0	56 20.37	0.01	25.60	19 55 54.76	0.24
	Lalande 38283 .	29	. .	. .	. .	19.6	20.9	22.5	24.0	25.4	. .	. .	. .	56 22.48	— 0.01	25.60	19 55 56.87	— 0.24
	*—39° 11′ . . .	30	44.4	47.3	48.7	1.3	2.3	3.4	4.5	5.6	19.0	20.5	23.2	0 3.65	+ 0.20	25.59	19 59 38.26	+ 1.25
	O. Arg. S. 20287 .	31	49.6	52.0	53.2	3.6	4.8	6.2	7.5	8.6	19.3	20.4	22.8	4 6.18	0.14	25.59	20 3 40.73	1.15
	O. Arg. S. 30343 .	32	57.6	59.7	0.8	11.0	12.0	13.2	14.5	15.6	25.7	26.8	29.0	8 13.26	0.11	25.59	20 7 47.78	1.07
	O. Arg. S. 20358 .	33	6.1	8.3	9.5	19.5	20.5	21.9	23.0	24.0	34.4	35.4	37.6	9 21.84	0.11	25.59	20 8 56.36	1.07
	Lacaille 8403 . .	34	52.0	54.5	55.8	7.3	8.4	10.0	11.3	12.6	24.2	25.4	27.8	12 9.94	0.17	25.59	20 11 44.52	1.22
	O. Arg. S. 20439 .	35	3.6	5.9	7.3	18.3	19.5	20.8	22.0	23.4	34.4	35.7	38.0	15 20.81	+ 0.16	25.59	20 14 55.38	1.19
	Weisse 387 . .	36	. .	. .	. .	14.6	15.7	16.9	18.2	19.3	29.2	30.3	32.5	17 22.09	— 5.03	25.59	20 16 51.47	1.03
	π^1 Capricorni . .	37	1.1	3.4	4.7	14.7	15.7	17.0	18.3	19.4	29.5	30.6	32.9	20 17.03	+ 0.12	25.59	20 19 51.56	1.10
	ε Orionis . . .	38	44.3	46.3	47.5	57.0	58.0	59.2	0.4	1.6	11.2	12.2	14.4	29 59.28	0.07	25.50	. . . .	3.24
	α Orionis . . .	39	15.0	17.0	18.1	27.7	28.9	30.1	31.2	32.4	42.1	43.0	45.0	48 30.04	0.06	25.50	. . . .	3.44
21	α Scorpii	40	10.7	11.9	13.2	14.8	17.2	33.8	35.9	37.3	. .	. .	. .	21 21.85	28.65	25.56	. . . .	1.55
F.	ζ Ophiuchi . . .	41	9.0	11.0	12.2	21.8	22.8	24.1	25.4	26.4	36.3	37.2	39.4	30 24.15	+ 0.10	25.55	. . . .	1.37
	Saturn I . . .	42	20.4	21.7	23.2	24.5	26.8	. .	30.8	33.4	34.8	36.2	37.4	38 58.92	— 0.23	25.55	16 38 33.14	
	Saturn II . . .	43	43.9	46.0	47.2	57.5	58.5	59.8	1.1	2.4	12.6	13.7	15.9	38 59.87	+ 0.14	25.55	16 38 34.46	
	O. Arg. S. 16121 .	44	26.9	29.1	30.5	41.8	42.8	44.2	45.6	46.8	58.0	59.1	2.0	48 44.25	0.19	25.55	16 48 18.89	1.50
	*—37° 7′ . . .	45	30.5	33.0	34.6	46.8	48.0	49.4	50.9	52.3	4.6	5.8	8.3	52 49.47	+ 0.23	25.55	16 52 23.15	+ 1.53
	ε Ursæ Minoris . .	46	. .	. .	. .	43.4	49.4	59.0	9.2	16.7	. .	. .	. .	59 59.54	— 0.88	25.55	. . . .	— 10.60
	B. A. C. 5818 . .	47	42.1	44.6	46.0	57.0	58.1	59.4	0.8	2.0	13.2	14.4	16.8	8 59.49	+ 0.19	25.54	17 8 34.14	+ 1.44
	*—30° 10′ . . .	48	47.8	50.3	51.5	2.6	3.7	5.0	6.4	7.7	18.8	20.0	22.4	9 5.11	0.19	25.54	17 8 39.76	1.44
	*—27° 50′ . . .	49	26.7	28.7	30.5	. .	. .	. .	. .	. .	57.3	58.5	0.5	15 43.70	0.18	25.54	17 15 18.34	1.40
	B. A. C. 5897 . .	50	54.7	57.2	58.4	9.5	10.9	12.2	13.6	14.8	26.2	27.2	29.7	21 12.22	0.20	25.54	17 20 46.88	1.41
	α Ophiuchi . . .	51	3.6	5.7	6.8	16.4	17.5	18.8	20.0	21.1	30.9	31.9	34.1	29 18.80	+ 0.03	—25.54	. . . .	+ 0.83

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 20, 18.4	— 25.61	+ 0.010	— 0.13	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 21 F.	O. Arg. S. 17070 .	1	45.7	48.0	49.0	59.3	0.3	1.5	2.9	4.1	14.2	15.4	17.6	34 1.64	+ 0.14	−25.54	17 33 36.24	+ 1.28
	O. Arg. S. 17098 .	2	. .	. .	. .	5.6	6.6	7.9	9.2	10.2	20.5	21.6	23.9	35 13.19	− 5.13	25.54	17 34 42.52	1.28
	*−22° 52′ . . .	3	34.4	36.3	37.7	. .	. .	. .	. .	. .	3.4	4.8	7.0	42 50.60	+ 0.15	25.54	17 42 25.21	1.29
	*+36° 35′ . . .	4	. .	38.9	40.0	52.4	53.7	55.0	56.0	58.0	10.0	11.3	. .	44 55.03	− 0.06	25.54	17 44 29.43	0.05
	*−36° 58′ . . .	5	. .	. .	. .	10.2	11.3	13.2	14.7	16.0	27.9	29.1	31.7	52 19.26	6.00	25.53	17 51 47.73	1.38
	B. A. C. 6103 . .	6	. .	. .	. .	26.7	27.7	29.4	30.8	32.1	44.0	45.4	47.9	56 35.50	− 5.91	25.53	17 56 4.06	1.36
	*−21° 6′ . . .	7	5.0	7.3	8.5	. .	. .	. .	. .	. .	34.2	35.1	37.2	6 21.22	+ 0.15	25.53	18 5 55.84	1.22
	*−21° 5′ . . .	8	10.8	12.6	14.3	24.8	25.8	26.9	28.0	29.2	39.6	40.9	43.0	6 26.90	+ 0.15	25.53	18 6 1.52	+ 1.22
	δ Ursæ Minoris . .	9	. .	. .	. .	. .	58.7	19.3	40.5	56.4	. .	. .	. .	15 28.72	− 11.31	25.53	. . . .	− 34.73
	*−33° 2′ . . .	10	58.3	0.6	2.0	13.6	14.7	16.2	17.7	18.8	30.3	31.7	34.0	24 16.17	+ 0.21	25.53	18 23 50.85	+ 1.27
	*−33° 2′ . . .	11	46.9	49.2	50.3	. .	. .	. .	. .	. .	. .	. .	. .	24 48.80	16.03	25.52	18 24 39.31	1.27
	*−21° 49′ . . .	12	22.0	24.2	25.6	35.8	37.0	38.2	39.4	40.4	50.7	51.9	54.0	29 38.11	0.15	25.52	18 29 12.74	1.18
	ξ^2 Sagittarii . . .	13	6.5	8.7	9.9	20.2	21.3	22.7	24.0	25.0	35.2	36.5	38.7	50 22.61	0.15	25.52	18 49 57.24	1.15
	Moon I. . . .	14	5.0	7.3	8.4	19.0	20.2	21.6	22.9	24.0	34.7	35.9	38.1	54 21.55	0.16	25.52	18 53 56.19	
	π Sagittarii . . .	15	10.2	12.5	13.7	24.0	25.1	26.3	27.5	28.7	38.8	40.0	42.4	2 26.29	0.15	25.51	19 2 0.93	1.13
	d Sagittarii . . .	16	9.9	12.2	13.4	23.5	24.6	25.9	27.1	28.1	38.2	39.3	41.7	10 25.81	0.14	25.51	. . . .	1.05
	υ Sagittarii . . .	17	25.3	27.4	28.5	38.9	39.9	41.2	42.3	43.4	53.4	54.9	56.9	14 41.12	0.12	25.51	19 14 15.73	1.06
	*−27° 40′ . . .	18	28.1	30.0	31.4	42.2	43.3	44.8	46.0	47.3	58.3	59.4	1.5	30 44.75	0.18	25.51	19 30 19.42	1.17
	O. Arg. S. 19874 .	19	32.4	34.7	36.2	46.4	47.6	49.2	50.7	51.8	. .	. .	. .	34 43.62	+ 5.74	25.51	19 34 23.85	1.16
	B. A. C. 6882 . .	20	23.1	25.3	26.6	37.3	38.4	39.7	41.0	42.2	52.7	54.0	56.0	56 39.66	− 0.01	25.50	19 56 14.15	0.22
	O. Arg. S. 20286 .	21	. .	. .	. .	58.8	59.9	1.2	2.5	3.8	14.4	15.7	18.0	4 6.79	− 5.44	25.50	20 3 35.85	1.16
	O. Arg. S. 20406 .	22	45.9	48.0	49.4	0.0	1.1	2.4	3.8	5.0	15.6	16.8	19.0	13 2.45	+ 0.17	25.50	20 12 37.12	1.15
	*−19° 10′ . . .	23	35.3	37.6	38.8	49.0	49.9	51.2	52.4	53.8	4.1	5.1	7.1	16 51.30	0.14	25.50	20 16 25.94	1.08
	O. Arg. S. 20574 .	24	9.2	11.3	12.6	22.7	24.0	25.2	26.4	27.5	38.0	39.2	41.2	26 25.21	0.16	25.49	20 25 59.88	1.13
22 Y.	ζ Ophiuchi . . .	25	9.5	11.7	12.8	22.5	23.5	24.7	26.0	27.0	36.8	37.8	40.0	30 24.75	0.10	26.17	16 29 58.68	1.38
	Saturn I . . .	26	34.1	36.2	37.4	47.8	48.9	50.0	51.2	52.4	3.0	3.9	6.0	38 50.08	+ 0.14	26.17	16 38 24.05	
	Saturn II . . .	27	13.0	14.3	16.0	17.3	19.5	. .	23.5	26.0	27.4	28.6	29.9	38 51.55	− 0.23	26.17	16 38 25.15	
	B. A. C. 5820 . .	28	9.8	12.5	13.6	24.6	25.8	27.2	28.4	29.6	40.7	42.1	44.6	9 27.17	+ 0.19	26.16	17 9 1.20	1.44
	Weisse (2) 454 .	29	22.0	24.6	25.9	37.9	39.1	40.8	42.3	43.5	55.4	56.8	59.4	16 40.70	− 0.06	26.16	17 16 14.48	0.21
	α Ophiuchi . . .	30	4.0	6.2	7.4	17.0	18.2	19.4	20.6	21.7	31.5	32.7	34.8	29 19.41	+ 0.03	26.16	17 28 53.28	0.84
	Weisse (2) 1601 .	31	. .	. .	. .	. .	. .	. .	39.7	42.5	43.8	45.0	46.5	51 43.50	− 35.47	26.15	17 50 41.88	+ 0.62
	Lalande 33472. .	32	35.0	37.8	39.3	51.1	52.3	53.9	55.4	56.6	8.5	9.8	12.4	5 53.83	− 0.06	26.15	18 5 27.62	− 0.04
	B.A.C.6194 . .	33	2.7	5.3	6.5	17.0	18.3	19.6	20.8	22.0	33.0	34.2	36.4	10 19.62	+ 0.17	26.15	18 9 53.64	+ 1.27
	*+36° 14′ . . .	34	. .	. .	. .	. .	. .	. .	39.7	42.6	44.1	45.6	47.3	18 43.86	− 41.77	26.14	18 17 35.95	− 0.08
	δ Ursæ Minoris. .	35	. .	. .	. .	. .	. .	. .	50.5	31.5	52.0	12.5	34.0	24 48.10	9 31.20	26.14	. . . .	34.47
	Lalande 34503. .	36	. .	. .	. .	27.3	28.7	31.2	50.8	53.9	55.5	56.8	58.6	30 45.35	33.21	26.14	18 29 46.00	0.23
	β^1 Lyræ	37	25.0	27.5	28.9	40.4	41.7	43.0	44.4	45.7	57.3	58.6	0.9	45 43.04	− 0.04	26.14	18 45 16.86	− 0.03
	α Aquilæ. . . .	38	36.6	37.8	39.9	49.6	50.6	51.8	53.1	54.2	3.8	4.8	7.0	44 51.75	+ 0.05	26.12	19 44 25.68	+ 0.65
	Moon I. . . .	39	8.5	10.6	11.9	22.6	23.6	24.9	26.2	27.3	37.8	38.9	41.2	50 24.86	0.15	26.12	19 49 58.89	
	Moon II . . .	40	22.2	24.6	25.8	36.4	37.6	38.8	40.0	41.2	52.0	53.0	55.4	52 38.82	0.34	26.12	19 52 13.04	
	63 Sagittarii . . .	41	51.0	53.2	54.3	4.3	5.4	6.5	7.7	8.8	18.6	19.7	21.8	55 6.48	0.12	26.12	19 54 40.48	1.01
	ξ^2 Capricorni. .	42	20.8	22.9	24.0	33.9	35.0	36.2	37.4	38.5	48.2	49.5	51.6	5 36.18	0.05	26.12	20 5 10.11	1.00
	α^2 Capricorni. .	43	0.0	2.2	3.4	13.2	14.2	15.5	16.6	17.6	27.6	28.6	30.9	11 15.44	0.05	26.12	20 10 49.37	1.00
23 F.	ι Aquilæ. . . .	44	18.1	20.1	21.2	31.0	32.1	33.2	34.3	35.4	45.2	46.2	48.2	28 33.18	+ 0.09	26.40	18 28 6.87	+ 1.02
	α Lyræ	45	39.7	42.3	43.7	56.0	57.4	58.8	0.4	1.8	14.2	15.6	18.1	32 58.91	− 0.06	26.40	18 32 32.45	− 0.24
	γ Aquilæ. . . .	46	15.2	17.4	18.7	28.3	29.4	30.4	31.6	32.8	42.5	43.6	45.7	40 30.51	+ 0.04	26.40	19 40 4.15	+ 0.59
	B. A. C. 6987 . .	47	6.2	8.0	9.4	19.7	21.0	22.1	23.4	24.4	34.7	36.1	38.2	13 22.11	0.14	26.40	20 12 55.85	1.07
	π Capricorni. .	48	2.0	4.2	5.5	15.4	16.5	17.9	19.0	20.1	30.2	31.4	33.5	20 17.79	0.13	26.40	20 17 51.52	1.06
	ε Aquarii . . .	49	48.3	50.4	51.6	1.2	2.3	3.4	4.7	5.8	15.5	16.7	18.9	41 3.53	+ 0.10	−26.40	20 40 37.23	+ 0.97

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 21, 17.4	− 25.54	+ 0.015	− 0.19	+ 0.07
22, 18.5	− 26.14	+ 0.015	− 0.19	+ 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 23 F.	μ Aquarii . . .	1	48.5	50.6	51.8	1.4	2.5	3.8	5.0	6.0	15.8	16.9	19.0	46 3.75	+ 0.10	−26.40	20 45 37.45	+ 0.97
	Moon II . . .	2	. .	. .	. .	15.5	16.6	17.9	19.2	20.2	. .	. .	. .	46 47.88	0.14	26.40	20 46 21.62	
	θ Capricorni . .	3	47.7	49.9	51.0	1.0	2.0	3.3	4.6	5.7	15.8	16.9	19.1	59 3.36	0.13	26.40	20 58 37.09	1.08
	ν Aquarii. . . .	4	40.6	42.6	43.8	53.6	54.6	55.8	57.0	58.0	8.0	8.9	11.2	2 55.83	+ 0.11	26.40	21 2 29.54	1.01
	ζ Cygni	5	33.2	35.5	37.0	47.9	49.1	50.5	52.0	53.0	4.1	5.4	7.9	7 50.51	− 0.03	26.40	21 7 24.08	0.15
24 Y.	Saturn I . . .	6	55.2	56.5	58.0	59.3	1.5	. .	5.6	8.0	9.4	10.7	13.2	39 33.74	− 0.23	26.64	16 39 6.87	
	Saturn II . . .	7	18.5	20.5	21.9	32.0	33.1	34.5	35.8	36.8	47.1	48.1	50.4	39 34.43	+ 0.14	26.64	16 39 7.93	
	*−36° 58′ . . .	8	. .	. .	. .	4.0	5.7	8.0	27.0	30.3	31.7	33.3	34.8	48 21.85	− 32.33	26.63	16 47 22.89	1.57
	*−37° 7′ . . .	9	15.0	17.4	18.6	30.8	32.3	33.5	34.8	36.2	48.7	50.0	52.5	53 33.60	+ 0.23	26.63	16 53 7.20	1.55
	d Herculis . . .	10	56.5	59.0	0.4	11.9	13.0	14.6	16.0	17.3	28.7	30.1	32.6	57 14.56	− 0.04	26.63	16 57 47.89	0.48
	O. Arg. S. 16533 .	11	30.7	33.0	34.3	45.0	46.2	47.5	48.9	50.0	0.9	2.2	4.4	8 47.55	+ 0.17	26.63	17 8 21.09	1.44
	*+32° 43′ . . .	12	21.8	24.5	25.7	37.1	38.3	39.7	41.0	42.3	53.9	55.1	57.7	15 39.74	− 0.04	26.62	17 15 13.08	0.39
	Weisse (2) 454. .	13	. .	. .	. .	55.8	57.2	59.8	18.8	21.8	23.4	25.0	26.5	17 13.54	− 32.55	26.62	17 16 14.37	0.24
	α Ophiuchi . . .	14	4.4	6.6	7.7	17.5	18.5	19.8	21.0	22.1	31.9	33.0	35.2	29 19.79	+ 0.03	26.62	17 28 53.20	0.85
	*−31° 12′ . . .	15	47.8	50.2	51.5	2.9	3.9	5.0	6.4	7.8	19.2	20.4	22.6	36 5.25	+ 0.20	26.62	17 35 38.83	1.39
	Weisse (2) 1394 .	16	7.0	8.5	10.3	11.8	14.4	. .	28.5	31.6	33.2	34.7	36.3	43 51.63	− 0.49	26.61	17 43 24.53	0.10
	Weisse (2) 1398 .	17	38.6	41.2	42.5	54.4	55.7	57.2	58.6	59.9	11.7	13.2	15.8	43 57.16	0.06	26.61	17 43 30.49	0.10
	Lalande 32747. .	18	. .	. .	. .	9.8	11.0	12.6	14.0	15.5	27.7	29.0	31.7	47 18.91	6.41	26.61	17 46 45.89	0.03
	*+38° 12′ . . .	19	8.5	11.1	12.5	25.0	26.2	27.7	29.2	30.5	42.7	44.1	46.7	49 27.65	− 0.06	26.61	17 49 0.98	0.03
	O. Arg. S. 17466 .	20	3.4	5.7	6.9	17.5	18.6	19.8	21.0	22.0	32.9	34.0	36.3	53 19.83	+ 0.16	26.61	17 52 53.38	1.28
	O. Arg. S. 17535 .	21	52.9	55.4	56.5	7.1	8.4	9.8	11.1	12.2	. .	. .	. .	56 4.17	+ 5.80	26.61	17 55 43.36	+ 1.31
	*+38° 27′ . . .	22	26.9	29.5	31.0	43.2	44.4	46.0	47.6	49.0	1.0	2.4	5.1	5 46.01	− 0.06	26.61	18 5 19.34	− 0.11
	O. Arg. S. 17922 .	23	3.1	5.6	6.7	17.3	18.4	19.7	20.9	22.2	33.0	34.1	36.5	8 19.77	+ 0.17	26.61	18 7 53.33	+ 1.26
	O. Arg. S. 17956 .	24	. .	. .	. .	. .	. .	. .	56.2	58.7	0.0	1.4	2.7	9 59.80	− 35.42	26.61	18 8 57.77	1.19
	*−18° 51′ . . .	25	. .	. .	. .	. .	. .	. .	31.1	33.4	34.8	36.2	37.5	10 34.60	35.42	26.60	18 9 32.58	+ 1.19
	Lalande 33952. .	26	53.4	56.2	57.6	9.6	10.8	12.4	13.8	15.2	27.1	28.5	30.9	17 12.32	0.06	26.60	18 16 45.66	− 0.09
	Lalande 33997. .	27	2.8	5.4	6.9	18.8	20.2	21.7	23.2	24.5	36.5	37.8	40.4	18 21.65	− 0.06	26.60	18 17 54.99	− 0.09
	B. A. C. 6304 . .	28	26.3	28.6	29.8	40.3	41.4	42.7	44.0	45.1	55.7	57.0	59.2	25 42.74	+ 0.16	26.60	18 25 16.30	+ 1.21
	*−23° 31′ . . .	29	5.0	7.4	8.6	19.0	20.2	21.5	22.8	23.9	34.4	35.7	37.8	30 21.48	0.16	26.60	18 29 55.04	1.20
	51 Cephei, S. P. . .	30	. .	. .	. .	34.5	55.5	21.0	45.5	6.0	. .	. .	. .	38 20.50	2.52	26.60	. . . .	48.71
	Weisse 1143 . .	31	11.7	13.8	15.0	24.7	25.6	26.9	28.0	29.1	38.8	39.8	41.9	46 26.85	0.09	26.59	18 46 0.35	1.07
	O. Arg. S. 19083 .	32	33.4	35.5	36.7	46.7	47.8	49.0	50.1	51.2	1.5	2.5	4.7	59 49.01	0.13	26.59	18 59 22.55	1.07
	B. A. C. 6538 . .	33	57.5	59.9	1.0	11.6	12.9	14.2	15.6	16.6	27.3	28.4	30.7	1 14.15	0.17	26.59	19 0 47.73	1.16
	*−18° 10′ . . .	34	13.4	15.7	16.8	27.0	28.1	29.3	30.5	31.7	41.8	42.9	45.0	10 29.29	+ 0.13	26.59	19 10 2.83	1.08
	Lalande 36252. .	35	. .	. .	. .	30.3	31.4	32.8	34.0	35.3	45.8	46.8	49.0	11 38.17	− 5.23	26.58	19 11 6.36	1.12
	B. A. C. 6613 . .	36	. .	. .	. .	12.5	13.7	15.0	16.4	17.6	28.6	30.0	32.4	14 20.78	− 5.54	26.58	19 13 48.66	1.18
	*−23° 17′ . . .	37	25.5	27.8	29.0	39.4	40.6	41.9	43.2	44.4	54.8	56.0	58.3	17 41.90	+ 0.16	26.58	19 17 15.48	1.13
	O. Arg. S. 19798 .	38	12.5	13.7	15.2	16.6	19.0	. .	. .	. .	. .	. .	. .	30 15.40	37.89	26.58	19 30 26.71	1.16
	γ Aquilæ	39	15.4	17.6	18.7	28.3	29.4	30.7	31.9	32.9	42.6	43.7	45.8	40 30.64	+ 0.04	26.57	19 40 4.11	0.58
	B. A. C. 6882 . .	40	24.0	26.4	27.6	38.1	39.2	40.5	41.8	43.0	53.6	54.7	57.0	56 40.54	− 0.01	26.57	19 56 13.96	0.20
	62 Aquilæ	41	51.7	54.0	55.1	4.6	5.6	6.9	8.1	9.2	18.8	19.9	22.0	58 6.90	+ 0.07	26.57	19 57 40.40	+ 0.80
	*+33° 5′ . . .	42	52.8	55.4	56.7	8.2	9.3	10.9	12.2	13.5	25.0	26.3	28.5	2 10.80	− 0.04	26.57	20 1 44.19	− 0.12
	b^2 Cygni	43	44.0	46.7	48.1	0.0	1.2	2.8	4.3	5.5	17.5	18.8	21.4	5 2.75	0.06	26.57	20 4 36.12	0.27
	Weisse (2) 304 .	44	47.0	49.8	51.3	3.5	4.7	6.3	7.8	9.0	21.4	22.7	25.5	9 6.27	0.06	26.56	20 8 39.65	0.36
	Weisse (2) 306 .	45	21.8	23.2	25.0	26.7	29.4	. .	45.6	48.8	50.5	52.1	53.7	9 7.68	0.50	26.56	20 8 40.62	− 0.36
	B. A. C. 6984, (1st *)	46	33.9	36.3	37.5	48.6	49.7	51.2	52.5	53.7	4.7	6.0	8.3	12 51.13	0.19	26.56	20 12 24.76	+ 1.15
	B. A. C. 6984, (2d *)	47	11.3	12.6	14.3	15.7	18.3	. .	27.2	29.8	31.4	32.8	34.3	12 52.77	− 0.21	26.56	20 12 26.00	1.15
	O. Arg. S. 20533 .	48	35.6	38.0	39.3	49.5	50.6	51.9	53.2	54.3	4.7	5.9	8.0	21 51.91	+ 0.15	26.56	20 21 25.50	1.17
	ε Delphini . . .	49	10.7	12.9	13.9	23.8	24.8	26.0	27.2	28.3	38.0	39.2	41.3	27 26.01	+ 0.04	26.56	20 26 59.49	+ 0.58
	B. A. C. 7377 . .	50	28.8	32.9	34.9	53.7	55.7	58.2	0.2	2.4	21.3	23.5	27.8	8 58.13	− 0.19	−26.55	21 8 31.39	− 1.94

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
July 23, 19.8	− 26.40	0.000	− 0.19	+ 0.07
24, 19.9	− 26.57	+ 0.020	− 0.19	+ 0.07

DATE.		OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
				s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869.		Weisse 522	1	42.7	44.9	46.0	56.0	57.0	58.3	59.5	0.7	10.5	11.6	13.9	23 58.28	+ 0.12	−26.55	21 23 31.85	+ 1.06
July 24	β	Aquarii.	2	. .	. .	. .	20.3	21.3	23.4	38.6	41.2	42.4	43.7	45.0	25 34.49	− 26.07	26.54	21 24 41.88	0.96
Y.	ξ	Aquarii.	3	0.0	2.2	3.3	13.1	14.0	15.2	16.4	17.5	27.2	28.2	30.3	31 15.22	+ 0.10	26.54	21 30 48.78	1.02
		Moon II	4	25.1	27.1	28.4	38.5	39.6	40.8	42.1	43.3	53.6	54.7	56.8	38 40.91	0.13	26.54	21 38 14.50	
	λ	Capricorni.	5	42.0	44.2	45.4	55.2	56.2	57.4	58.6	59.7	9.5	10.6	12.8	39 57.42	0.11	26.54	21 39 30.99	1.06
	μ	Capricorni.	6	22.0	24.3	25.4	35.4	36.5	37.7	38.8	39.9	49.9	51.0	53.1	46 37.64	0.12	21.53	21 46 11.23	1.07
26	δ	Leonis	7	14.0	16.4	17.6	27.9	28.9	30.2	31.6	32.6	43.0	44.0	46.4	7 30.24	0.48	22.56	11 7 8.16	3.34
	β	Leonis	8	29.2	31.3	32.5	42.5	43.5	44.7	45.9	47.0	57.0	58.1	0.2	42 44.72	0.50	22.55	11 42 22 67	3.02
F.	ζ	Ophiuchi	9	5.4	7.5	8.7	18.5	19.5	20.8	22.0	23.0	32.9	33.9	36.0	30 20.75	0.57	22.73	16 29 58.59	1.41
		Saturn I	10	56.8	58.9	0.2	. .	. .	. .	. .	. .	25.6	26.8	28.9	38 12.87	0.61	22.73	16 37 50.75	
		Saturn II	11	. .	. .	. .	11.9	13.0	14.2	15.5	16.6	. .	. .	. .	38 14.24	0.61	22.73	16 37 52.12	
		*− 4° 55′	12	32.9	34.9	35.9	. .	46.4	47.7	48.8	. .	59.6	0.7	2.9	44 47.76	0.55	22.73	16 44 25.58	1.32
		*−29° 59′	13	53.9	56.1	57.5	8.5	9.7	11.2	12.7	13.9	24.9	26.0	28.6	50 11.18	0.65	22.73	16 49 49.10	1.53
	d	Herculis	14	52.1	54.6	56.0	7.5	8.8	10.2	11.5	12.8	24.2	25.6	28.2	57 10.14	0.44	22.73	16 56 47.85	0.51
		O. Arg. S. 17070	15	42.2	44.2	45.4	55.7	56.8	58.0	59.2	0.4	10.5	11.7	13.9	33 58.00	0.61	22.72	17 33 35.89	1.30
		O. Arg. S. 17098	16	48.4	50.7	51.8	1.9	3.0	4.4	5.6	6.7	17.0	18.0	20.2	35 4.34	+ 0.61	22.72	17 34 42.23	1.30
		*−34° 41′	17	. .	. .	. .	. .	. .	. .	46.3	49.6	51.0	52.6	54.0	45 50.70	− 40.24	22.72	17 44 47.74	1.40
		*−31° 54′	18	. .	. .	. .	. .	. .	. .	2.8	5.5	7.0	8.4	10.1	48 6.76	− 38.98	22.72	17 47 5.06	1.37
		*−32° 2′	19	. .	. .	. .	19.7	20.8	22.3	23.5	24.8	. .	. .	. .	49 22.22	+ 0.66	22.71	17 49 0.17	1.37
		*+32° 2′±	20	. .	. .	. .	29.0	30.2	31.6	33.0	34.4	. .	. .	. .	49 31.64	0.66	22.71	17 49 9.59	1.37
	μ	Sagittarii	21	41.9	43.1	44.6	46.1	48.3	. .	52.7	55.1	56.4	57.8	59.2	6 20.52	+ 0.24	22.71	18 5 58.05	+ 1.23
	δ	Ursæ Minoris	22	. .	. .	. .	36.0	54.5	15.0	34.0	52.0	. .	. .	. .	15 14.30	− 1.38	22.70	. . . .	− 33.53
Y.	δ	Ursæ Minoris	23	. .	. .	. .	. .	. .	. .	. .	. .	33.5	52.0	26.5	18 57.33	3 45.71	22.45	. . . .	− 33.53
		*−22° 22′	24	. .	. .	. .	. .	. .	. .	30.3	32.9	34.4	35.7	36.9	25 34.04	− 35.77	22.45	18 24 35.82	+ 1.20
		Lalande 34222	25	44.9	47.2	48.5	58.8	59.9	1.2	2.5	3.5	14.1	15.1	17.3	25 1.18	+ 0.62	22.45	18 24 39.35	+ 1.20
	α	Lyræ	26	35.3	37.9	39.3	51.6	52.9	54.5	56.0	57.3	9.7	11.0	13.7	32 54.47	0.43	22.45	18 32 32.45	− 0.22
	ε	Delphini	27	6.1	8.3	9.4	19.0	20.2	21.4	22.6	23.7	33.4	34.6	36.6	27 21.39	0.51	22.42	20 26 59.48	+ 0.57
	μ	Aquarii.	28	43.9	46.2	47.4	57.1	58.2	59.3	0.6	1.6	11.2	12.4	14.6	45 59.32	0.57	22.42	20 45 37.47	0.93
F.	γ	Piscium	29	31.6	33.6	34.9	44.4	45.4	46.7	48.0	49.0	58.5	59.6	1.6	10 46.66	0.53	22.63	23 10 24.56	1.14
		Moon II	30	36.8	38.9	40.0	50.0	51.2	52.4	53.6	54.8	4.6	5.7	7.8	15 52.35	0.58	22.63	23 15 30.30	
	κ	Piscium	31	22.1	24.2	25.3	34.9	35.9	37.2	38.3	39.5	49.0	50.0	52.4	20 37.16	0.54	22.63	23 20 15.07	1.21
		*+0° 34′	32	41.0	43.2	44.3	54.0	55.0	56.2	57.4	58.4	8.0	9.1	11.2	20 56.16	0.54	22.63	23 20 34.07	1.21
	ι	Piscium	33	21.8	23.9	24.9	34.7	35.7	36.9	38.0	39.1	48.9	50.0	52.0	33 36.90	0.52	22.63	23 33 14.79	1.23
	α	Orionis.	34	50.6	51.8	53.1	54.3	56.6	. .	57.0	59.5	0.7	2.1	3.4	48 26.91	0.05	22.29	. . . .	3.30
	α	Orionis.	35	11.4	13.5	14.6	24.3	25.3	26.5	27.8	28.7	38.5	39.6	41.6	48 26.53	0.40	22.29	. . . .	3.30
27	β¹	Scorpii	36	57.0	59.2	0.3	10.5	11.6	12.9	14.1	15.2	25.3	26.6	28.7	58 12.85	0.48	22.17	15 57 51.16	1.71
Y.	δ	Ophiuchi	37	37.2	39.4	40.5	50.1	51.2	52.4	53.6	54.7	4.2	5.4	7.6	7 52.39	0.43	22.17	16 7 30.65	1.48
	ζ	Ophiuchi	38	5.2	7.4	8.4	18.3	19.3	20.5	21.7	22.6	32.4	33.6	35.8	30 20.47	0.45	22.16	16 29 58.76	+ 1.42
		Saturn I	39	49.4	51.6	52.7	3.0	4.2	5.5	6.6	7.8	18.1	19.1	21.5	38 5.41	0.48	22.16	16 37 43.73	
		Saturn II	40	27.6	29.0	30.5	31.8	34.3	. .	38.3	40.5	41.9	43.5	44.6	38 6.20	+ 0.85	22.16	16 37 44.89	
		B. A. C. 5705	41	13.0	22.5	27.5	12.8	17.6	23.6	29.2	33.9	19.5	24.4	33.8	49 23.44	− 0.70	22.16	16 49 0.58	− 6.16
		*−37° 6′	42	10.0	12.3	13.7	26.0	27.1	28.9	30.2	31.5	43.7	45.0	47.5	53 28.72	+ 0.52	22.16	16 53 7.08	+ 1.58
		O. Arg. S. 16574	43	. .	. .	. .	. .	. .	. .	4.8	7.4	8.8	10.4	11.6	11 8.60	− 37.50	22.16	17 10 8.94	1.48
		*+32° 43′	44	17.1	19.3	20.6	32.0	33.3	34.8	36.2	37.4	. .	. .	. .	15 28.84	+ 6.21	22.16	17 15 12.89	0.43
		*+35° 14′	45	36.7	39.0	40.7	52.4	53.8	55.3	56.6	57.9	9.9	11.2	13.5	16 55.18	0.28	22.16	17 16 33.30	0.33
	α	Ophiuchi	46	59.5	1.7	2.8	12.6	13.6	14.8	16.1	17.1	26.9	28.1	30.2	29 14.85	+ 0.38	22.15	17 28 53.08	0.87
		O. Arg. S. 17282	47	. .	. .	. .	. .	. .	. .	45.0	47.3	48.6	50.2	51.4	44 48.50	− 36.12	22.15	17 43 50.23	1.34
		Weisse 1014	48	30.5	32.6	33.7	43.2	44.3	45.5	46.7	47.7	57.4	58.5	0.5	50 45.51	+ 0.42	22.15	17 50 23.78	+ 1.01
		*+85° 40′	49	. .	. .	. .	. .	. .	19.0	35.0	48.0	. .	. .	. .	15 34.00	− 48.12	22.14	18 14 23.74	− 25.59
		O. Arg. S. 18248	50	26.1	28.3	29.4	39.5	40.6	41.8	43.1	44.1	54.3	55.3	57.5	20 41.82	+ 0.47	−22.14	18 20 20.15	+ 1.16

July 26, 12h. Image west 0r.24. Clamp east.
26, 6h. Image west 0r.25. Clamp east.
Image west 0r.45. Clamp west.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m	n	c
1869. h.	s.	s.	s.	s.	s.
July 26, 16.5	− 22.48	+ 0.014	+ 0.48	− 0.17	+ 0.06
26, 18.8	− 22.70	+ 0.014			
27, 14.4	− 22.19	+ 0.012	+ 0.51	− 0.17	− 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 27 Y.	51 Cephei, S. P, . .	1	. .	. .	. .	. .	. .	. .	. .	. .	17.5	38.5	22.0	42 46.00	— 4 29.27	—22.14	. . . .	+ 47.93
28	α Coronæ Borealis .	2	13.4	15.8	17.0	27.8	28.9	30.3	31.7	32.8	43.6	44.8	47.2	29 30.30	+ 0.32	20.90	. . . .	1.36
	δ Ophiuchi . . .	3	35.9	38.1	39.2	48.8	49.9	51.1	52.3	53.3	2.9	4.0	6.1	7 51.05	0.43	20.90	. . . .	1.49
	Saturn I . . .	4	18.2	19.6	21.0	22.2	25.0	. .	28.0	31.1	32.5	33.9	35.2	37 56.76	0.85	20.89	16 37 36.72	
	Saturn II . . .	5	42.4	44.6	45.7	55.9	57.0	58.3	59.5	0.7	10.8	12.0	14.3	37 58.29	0.48	20.89	16 37 37.88	
	*—27° 48′ . . .	6	45.7	48.1	49.2	. .	0.9	2.4	3.8	. .	16.2	17.2	19.6	58 2.57	0.49	20.87	17 57 42.19	1.32
	μ^1 Sagittarii . . .	7	2.5	4.6	5.8	16.1	17.1	18.5	19.7	20.8	31.1	32.2	34.6	6 18.45	0.48	20.87	. . . .	1.24
	*—30° 27′ . . .	8	11.0	13.3	14.4	25.8	27.0	28.4	29.8	30.9	42.0	43.4	45.8	8 28.35	+ 0.50	20.87	18 8 7.98	1.32
	Lacaille 7657 . .	9	. .	. .	. .	24.0	25.4	27.9	45.9	48.5	49.9	51.7	53.1	10 40.80	— 30.61	20.87	18 9 49.32	+ 1.34
	δ Ursæ Minoris . .	10	. .	. .	. .	38.0	55.0	. .	. .	. .	. .	. .	35.0	18 42.67	— 2 31.20	20.87	. . . .	— 33.07
	51 Cephei, S. P. . .	11	. .	. .	. .	. .	47.0	12.0	36.0	. .	. .	. .	. .	38 11.67	+ 5.92	20.86	. . . .	+ 47.69
29	δ Ophiuchi . . .	12	35.6	37.9	38.9	48.5	49.6	50.7	51.9	52.9	2.6	3.7	5.8	7 50.74	0.43	20.57	16 7 30.60	1.50
	ζ Ophiuchi . . .	13	3.4	5.7	6.8	16.5	17.6	18.8	20.0	21.0	30.8	31.9	34.0	30 18.77	0.46	20.56	16 29 58.67	1.44
	Saturn I . . .	14	34.2	36.4	37.6	47.9	48.9	50.3	51.5	52.6	2.9	4.0	6.2	37 50.23	0.50	20.56	16 37 30.17	
	Saturn II . . .	15	12.6	14.0	15.4	16.5	19.1	. .	23.2	25.4	26.6	28.2	29.4	37 51.04	+ 0.87	20.56	16 37 31.35	
	κ Ophiuchi . . .	16	. .	. .	. .	47.7	48.8	50.0	51.2	52.2	1.9	3.0	5.2	51 55.00	— 4.66	20.55	16 51 29.79	+ 1.10
	ε Ursæ Minoris .	17	3.8	18.4	26.8	37.8	45.2	54.8	4.2	11.3	22.5	30.8	46.4	59 54.73	— 1.85	20.55	. . . .	— 9.94
	γ Aquilæ	18	9.1	11.2	12.3	21.9	23.0	24.3	25.5	26.5	36.3	37.4	39.6	40 24.28	+ 0.38	20.51	19 40 4.15	+ 0.57
	β Aquilæ	19	0.0	2.1	3.1	12.7	13.8	15.0	16.2	17.4	26.9	28.0	30.2	49 15.04	+ 0.40	20.51	19 48 54.93	+ 0.66
	λ Ursæ Minoris . .	20	. .	. .	. .	57.0	57.0	56.0	59.0	51.0	. .	. .	. .	56 56.00	— 16.44	20.51	. . . .	— 118.86
	Weisse 46 . . .	21	11.0	13.0	14.1	23.9	25.0	26.3	27.5	28.5	38.1	39.1	41.4	4 26.17	+ 0.46	20.51	20 4 6.12	+ 0.89
	B. A. C. 6949 . .	22	22.0	23.4	24.8	25.9	28.4	. .	29.4	31.6	32.8	34.3	35.7	7 58.83	0.81	20.51	20 7 39.13	0.92
	Weisse 284. . .	23	13.8	16.0	17.4	27.0	28.0	29.2	30.4	31.5	41.3	42.5	44.6	13 29.25	0.48	20.51	20 13 9.22	0.95
	π Capricorni. . .	24	55.8	58.1	59.2	9.1	10.3	11.6	12.8	13.9	24.1	25.4	27.6	20 11.63	0.50	20.51	20 19 51.62	1.00
	O. Arg. S. 20595 .	25	46.9	49.0	50.1	0.0	1.1	2.2	3.4	4.6	14.7	15.8	18.0	26 2.35	0.48	20.50	20 25 42.33	0.97
	*—21° 47′ . . .	26	5.5	7.8	8.9	19.4	20.4	21.6	22.8	24.0	34.4	35.6	37.8	30 21.65	+ 0.51	20.50	20 30 1.66	1.03
	O. Arg. S. 20675 .	27	. .	. .	. .	4.1	5.1	6.3	7.6	8.8	19.0	20.2	22.5	31 11.70	— 4.85	20.50	20 30 46.35	1.03
	Weisse 851. . .	28	11.2	13.2	14.3	24.0	25.1	26.3	27.6	28.6	38.3	39.4	41.5	34 26.32	+ 0.45	20.50	20 34 6.27	0.86
	B. A. C. 7210 . .	29	19.5	21.7	23.0	. .	. .	. .	. .	. .	49.6	50.8	53.2	42 36.30	0.53	20.50	20 42 16.33	1.08
	μ Aquarii. . . .	30	42.3	44.5	45.7	55.3	56.4	57.6	58.8	59.8	9.5	10.7	12.8	45 57.58	0.46	20.50	20 45 37.54	0.90
30	β Leonis	31	28.0	30.2	31.2	41.2	42.2	43.6	44.8	45.9	55.8	56.9	59.1	42 43.54	0.23	21.29	. . . .	+ 3.05
	Polaris, S. P. . .	32	18.0	6.5	5.0	55.0	20.5	. .	. .	. .	. .	. .	. .	49 9.00	22 46.21	21.28	. . . .	— 16.36
	ζ Ophiuchi . . .	33	4.2	6.4	7.4	17.2	18.3	19.5	20.7	21.7	31.5	32.6	34.8	30 19.48	0.37	21.22	16 29 58.63	+ 1.45
	Saturn I . . .	34	28.6	30.9	32.2	. .	. .	. .	. .	. .	57.4	58.5	0.7	37 44.72	0.41	21.22	16 37 23.91	
	Saturn II . . .	35	. .	. .	. .	43.6	44.7	46.0	47.0	48.2	. .	. .	. .	37 45.90	0.41	21.22	16 37 25.09	
	*—30° 0′ . . .	36	52.5	55.2	56.4	7.3	8.4	9.8	11.3	12.3	23.6	24.7	27.2	50 9.88	0.44	21.22	16 49 49.10	1.57
	*—37° 7′ . . .	†37	9.1	12.0	13.5	. .	. .	. .	. .	. .	42.3	43.6	47.1	53 27.93	0.47	21.22	16 53 7.18	1.62
	O. Arg. S. 16533 .	38	1.0	2.3	3.6	4.8	7.5	24.8	27.2	28.4	. .	. .	. .	8 12.45	+ 29.73	21.22	17 8 20.96	1.49
	*—35° 5′ . . .	39	22.2	23.3	25.2	26.8	28.0	. .	1.5	4.2	5.6	7.6	9.0	9 45.34	— 19.67	21.22	17 9 4.45	1.55
	α Ophiuchi . . .	40	58.5	0.7	1.9	11.7	12.8	14.1	15.3	16.4	26.2	27.2	29.4	29 14.02	+ 0.29	21.21	17 28 53.10	0.90
	*—34° 41′ . . .	41	49.7	51.2	52.7	54.3	57.3	. .	10.3	12.7	14.3	16.2	17.6	45 33.63	0.88	21.21	17 45 13.30	1.42
	*—34° 40′ . . .	42	9.6	11.1	12.6	14.1	17.0	. .	29.6	31.8	33.8	36.0	37.5	45 53.31	0.88	21.21	17 45 32.98	1.42
	B. A. C. 6066 . .	43	13.9	16.1	17.4	27.9	28.8	30.2	31.5	32.7	43.2	44.4	46.7	49 30.25	0.42	21.21	17 49 9.46	1.32
	O. Arg. S. 17610 .	44	33.3	34.5	36.9	47.7	48.7	50.0	51.4	52.6	3.3	4.5	6.9	58 49.98	+ 0.43	21.20	17 58 29.21	+ 1.31
	λ Ursæ Minoris .	45	. .	. .	. :	55.5	49.0	50.0	55.0	50.0	. .	. .	. .	56 51.90	— 14.83	21.18	. . . .	— 118.56
	α^2 Capricorni. . .	46	54.9	57.0	58.3	8.0	9.1	10.4	11.6	12.6	22.5	23.6	25.8	11 10.35	+ 0.38	21.17	20 10 49.56	+ 0.93
	π Capricorni. . .	47	56.6	58.8	59.9	10.0	11.1	12.4	13.7	14.8	25.0	26.2	28.4	20 12.45	0.41	21.17	20 19 51.69	0.99
	μ Aquarii . . .	48	43.2	45.3	46.4	56.1	57.2	58.4	59.6	0.6	10.4	11.5	13.6	45 58.39	0.37	21.17	20 45 37.59	0.89
	ζ Cygni	49	27.8	30.1	31.4	42.5	43.7	45.0	46.5	47.7	58.6	0.0	2.5	7 45.07	+ 0.21	21.16	21 7 24.12	+ 0.07
F.	Polaris	50	. .	. .	. .	29.0	10.5	59.5	50.5	32.0	. .	. .	. .	12 0.30	— 3.56	—21.20	. . . .	— 16.80

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m	n	c
1869. h.	s.	s.	s.	s.	s.
July 28, 16.6	— 20.89	+ 0.013	+ 0.51	— 0.17	— 0.09
29, 18.6	— 20.53	+ 0.014	+ 0.51	— 0.23	— 0.09
30, 18.3	— 21.20	+ 0.014			
30, 11–13	. .	. .	+ 0.35	— 0.10	— 0.09
30, 16–22	. .	. .	+ 0.43	— 0.20	— 0.09
30, 1–3	. .	. .	+ 0.37	— 0.15	+ 0.06

37. Very faint.
July 30, at $21^h\ 30^m$. Image west $0^r.36$. Clamp west.
Image west $0^r.15$. Clamp east.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
July 30 F.	β Arietis	1	30.7	33.0	34.2	44.2	45.4	46.9	48.1	49.1	59.2	0.5	2.8	47 46.74	+ 0.38	−21.20	. . . .	+ 1.88
	α Arietis	2	. .	. .	. .	. .	. .	. .	42.8	45.2	46.6	48.0	49.3	0 46.38	− 36.13	21.19	. . . .	1.98
	Moon II	3	9.6	11.9	13.0	22.7	23.9	25.1	26.3	27.3	37.2	38.4	40.5	20 25.08	+ 0.42	21.19	2 20 4.31	
	α Ceti	†4	. .	. .	. .	. .	. .	. .	17.9	20.2	21.5	22.8	23.9	56 21.26	− 33.27	21.18	. . . .	2.27
31 Y.	ζ Ophiuchi	5	4.7	6.9	8.0	17.7	18.7	20.0	21.2	22.3	32.2	33.2	35.2	30 20.01	+ 0.44	21.87	16 29 58.58	1.46
	κ Ophiuchi	6	36.0	38.2	39.3	49.0	50.0	51.2	52.4	53.5	3.2	4.4	6.5	51 51.25	+ 0.38	21.87	16 51 29.76	+ 1.12
	ε Ursæ Minoris	7	4.4	18.6	27.1	38.2	46.1	55.0	3.4	11.7	23.5	30.9	46.3	59 55.02	− 0.52	21.86	. . . .	− 9.65
	a^1 Herculis	8	48.2	50.4	51.5	1.4	2.6	3.7	4.9	6.0	16.0	17.1	19.2	9 3.73	+ 0.37	21.86	17 8 42.24	+ 0.96
	*+36° 35′	9	28.2	30.8	32.3	44.3	45.5	47.0	48.5	49.8	1.8	3.0	5.7	43 46.99	+ 0.29	21.85	17 43 25.43	+ 0.17
	*+38° 27′	10	. .	. .	. .	38.1	39.3	40.9	42.4	43.8	56.0	57.4	0.1	5 47.25	− 6.06	21.85	18 5 19.34	− 0.04
	15 Sagittarii	11	31.7	33.9	35.1	45.3	46.3	47.6	48.9	50.1	0.4	1.6	3.9	7 47.71	+ 0.48	21.85	18 7 26.34	+ 1.24
	Lalande 33692	12	30.6	33.2	34.7	46.8	48.0	49.5	50.9	52.4	4.4	5.8	8.5	10 49.53	+ 0.29	21.85	18 10 27.97	− 0.02
	δ Ursæ Minoris	13	. .	. .	. .	35.5	51.0	11.5	32.5	49.7	. .	. .	. .	15 12.04	− 1.75	21.85	. . . .	32.33
	24 Ursæ Minoris	14	. .	. .	. .	. .	. .	55.5	18.5	38.0	42.5	1.5	40.0	22 12.67	− 2 18.77	21.84	18 19 32.06	36.86
	Lalande 34503	15	48.3	51.0	52.3	4.8	5.9	7.6	9.0	10.4	22.7	24.0	26.6	30 7.51	+ 0.29	21.84	18 29 45.96	0.16
	α Lyræ	16	. .	51.1	52.3	53.8	55.5	56.9	34.6	35.9	37.3	39.0	40.5	33 15.49	− 21.27	21.84	18 32 32.38	− 0.17
	π Capricorni	17	57.0	59.5	0.6	10.8	11.7	13.0	14.3	15.4	25.5	26.6	28.9	20 13.03	+ 0.47	21.82	20 19 51.68	+ 0.99
	ε Delphini	18	5.7	7.8	9.0	18.7	19.8	21.0	22.2	23.4	33.0	34.2	36.2	27 21.00	0.38	21.81	20 26 59.57	0.54
	μ Aquarii	19	43.7	45.9	47.0	56.7	57.8	59.0	0.2	1.3	11.0	12.1	14.1	45 58.98	+ 0.44	21.81	20 45 37.61	0.88
F.	Moon II	20	. .	. .	. .	21.0	22.5	24.5	40.2	42.5	43.9	45.2	46.5	9 35.79	− 26.75	21.80	3 8 47.24	
	α Tauri	21	30.7	32.7	34.0	44.0	45.0	46.2	47.5	48.7	58.5	59.6	1.7	28 46.24	+ 0.36	21.78	. . . .	2.97
Aug. 2	κ Ophiuchi	22	. .	. .	. .	47.5	48.6	49.8	50.9	52.0	1.8	2.9	5.0	51 54.81	− 4.99	20.00	. . . .	1.14
	d Herculis	23	49.6	52.1	53.1	4.9	6.1	7.5	9.1	10.4	22.0	23.2	25.7	57 7.61	+ 0.02	20.00	. . . .	+ 0.61
	ε Ursæ Minoris	24	. .	. .	. .	34.5	42.0	52.0	0.4	8.5	. .	. .	. .	59 51.48	− 0.15	20.00	. . . .	− 9.34
	*+14° 27′	25	. .	. .	. .	13.8	14.8	16.1	17.6	19.2	28.2	29.7	31.7	9 21.39	5.10	20.00	17 8 56.29	+ 0.99
	*−18° 40′	26	. .	. .	. .	. .	. .	. .	. .	45.7	46.7	48.2	49.4	8 47.50	− 36.33	19.99	18 7 51.18	1.23
	Taylor 8458	27	16.8	19.2	20.2	31.2	32.4	33.8	35.0	36.2	46.7	48.1	50.3	14 33.63	+ 0.11	19.99	18 14 13.75	1.29
	Lacaille 7695	28	. .	. .	. .	. .	. .	. .	32.5	35.4	36.9	38.5	40.0	17 36.66	− 41.49	19.99	18 16 35.18	1.36
	B. A. C. 6309	29	36.0	38.1	39.2	49.2	50.4	51.7	53.0	54.2	4.3	5.5	7.6	25 51.75	+ 0.09	19.98	18 25 31.86	1.17
	*−1° 31′	30	55.2	57.1	58.3	8.3	9.2	10.2	11.5	12.5	22.1	23.2	25.2	0 10.25	0.06	19.98	18 59 50.33	0.86
	Weisse 1549	31	5.5	7.5	8.8	18.4	19.4	20.5	21.8	23.3	. .	. .	. .	1 15.65	+ 5.04	19.98	19 1 0.71	0.86
	Weisse 1556	32	. .	. .	. .	29.6	30.5	31.7	33.0	34.0	43.7	44.7	46.9	1 36.76	− 4.92	19.98	19 1 11.86	0.86
	*−1° 30′	33	. .	. .	. .	19.1	20.1	21.4	. .	. .	. .	34.5	36.5	2 26.32	− 4.85	19.98	19 2 1.49	0.85
	*−8° 26′	34	44.7	47.2	48.1	. .	. .	. .	. .	. .	. .	. .	. .	16 46.67	13.48	19.98	19 16 40.17	0.90
	*−8° 26′	35	52.1	54.4	55.6	. .	6.2	7.4	8.7	. .	19.6	20.5	22.6	17 7.46	+ 0.07	19.98	19 16 47.55	0.90
	O. Arg. S. 19798	36	29.3	31.4	33.0	. .	. .	. .	. .	. .	0.1	1.4	3.6	30 46.47	0.11	19.97	19 30 26.61	1.13
	O. Arg. S. 19800	37	. .	. .	. .	48.0	49.2	50.5	52.0	53.3	. .	. .	. .	30 50.60	0.11	19.97	19 30 30.74	1.13
	*−39° 44′	38	33.5	35.9	37.4	50.1	51.3	52.8	54.3	55.8	8.5	10.1	12.2	48 52.90	0.15	19.97	19 48 33.08	1.16
	a^2 Capricorni	39	53.9	55.9	57.0	6.9	8.0	9.2	10.3	11.6	21.3	22.5	24.5	11 9.19	+ 0.08	19.97	. . . .	+ 0.92
	κ Cephei, (1st *)	40	. .	. .	. .	35.5	40.0	49.5	59.2	9.6	15.5	21.5	27.0	16 39.72	− 1 58.52	19.97	20 14 21.23	− 10.62
	κ Cephei, (2d *)	41	. .	. .	. .	36.7	41.8	51.3	0.8	11.7	17.3	23.1	28.7	16 41.42	− 1 58.52	19.97	20 14 22.93	− 10.62
	*−21° 44′	42	. .	. .	. .	17.4	18.7	19.7	21.0	22.2	. .	. .	. .	26 19.80	+ 0.09	19.96	20 25 59.93	+ 1.00
	ζ Cygni	43	26.9	29.5	30.6	41.8	42.9	44.2	45.6	46.7	57.8	59.1	1.5	7 44.24	+ 0.02	19.96	. . . .	0.05
	*−32° 46′	44	. .	. .	. .	. .	. .	. .	24.8	27.6	29.0	30.4	32.1	12 28.78	− 39.89	19.96	21 11 28.93	1.06
3 Y.	κ Ophiuchi	45	33.0	35.3	36.4	46.1	47.1	48.4	49.6	50.7	0.3	1.5	3.6	51 48.36	+ 0.03	18.59	16 51 29.80	1.16
	Weisse 115	46	21.6	23.9	25.0	35.0	36.0	37.3	38.4	39.6	49.4	50.5	52.8	8 37.23	+ 0.01	18.58	17 8 18.66	1.00
	α Herculis, (1st *)	47	. .	. .	. .	. .	. .	. .	. .	. .	12.9	14.1	16.2	9 14.40	− 13.69	18.58	17 8 42.13	1.00
	α Herculis, (2d *)	48	. .	. .	. .	. .	. .	. .	32.3	34.8	36.1	37.5	38.6	9 35.86	− 34.74	18.58	17 8 42.54	1.00
	α Ophiuchi	49	56.3	58.4	59.7	9.3	10.4	11.7	12.9	14.0	23.8	25.0	27.0	29 11.68	+ 0.02	−18.58	17 28 53.12	+ 0.94

4. Very faint; hazy.
Image west 0r.10. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m	n	c
1869. h.	s.	s.	s.	s.	s.
July 31, 18.6	− 21.84	+ 0.015	+ 0.35	− 0.18	+ 0.06
Aug. 2, 18.8	− 19.98	+ 0.010	. .	− 0.08	+ 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 3 Y.	O. Arg. S. 17275 .	1	24.5	27.0	28.0	38.2	39.3	40.3	41.5	42.7	53.0	54.0	56.2	43 40.43	+ 0.13	−18.58	17 43 21.98	+ 1.30
	*+38° 12′ . . .	2	. .	. .	. .	16.5	17.8	19.4	20.9	22.4	34.8	36.1	38.7	49 25.82	− 6.41	18.58	17 49 0.83	+ 0.11
	δ Ursæ Minoris . .	3	55.0	30.0	49.0	. .	48.0	9.5	29.0	. .	29.5	47.0	21.0	15 8.67	2.26	18.58	. . . .	− 31.40
	α Lyræ	4	31.6	34.3	35.8	48.1	49.5	51.1	52.6	53.9	6.1	7.5	10.2	32 50.97	− 0.08	18.58	18 32 32.31	− 0.14
5	*−21° 5′ . . .	5	. .	0.5	1.6	12.5	13.4	14.5	15.6	16.7	27.2	28.3	. .	6 14.48	+ 0.12	19.01	18 5 55.59	+ 1.28
	*−21° 6′ . . .	6	41.8	42.9	44.6	46.0	48.2	. .	52.5	55.4	56.5	57.6	59.1	6 20.46	− 0.25	19.01	18 6 1.20	1.28
	O. Arg. S. 17892 .	7	. .	. .	. .	51.1	52.3	54.7	10.5	13.3	14.5	15.9	17.0	8 6.16	− 27.39	19.01	18 7 19.76	1.25
	O. Arg. S. 18000 .	8	. .	23.9	25.1	35.4	36.5	37.7	39.0	40.1	50.1	51.2	. .	10 37.67	+ 0.12	19.01	18 10 18.78	1.24
	O. Arg. S. 18015 .	9	7.0	9.1	10.3	. .	. .	. .	. .	. .	35.2	36.4	38.6	11 22.77	0.12	19.01	18 11 3.88	1.24
	O. Arg. S. 18017 .	10	. .	. .	. .	21.3	22.4	23.7	25.0	26.1	. .	. .	. .	11 23.70	+ 0.12	19.01	18 11 4.81	1.24
	*−38° 39′ . . .	11	. .	. .	. .	14.4	15.7	17.2	18.6	19.9	32.4	33.6	36.5	16 23.54	− 6.18	19.01	18 15 58.35	1.40
	*−22° 54 . . .	12	35.8	38.2	39.2	. .	. .	. .	. .	. .	4.7	6.0	8.4	20 52.05	+ 0.13	19.01	18 20 33.17	1.25
	B. A. C. 6310 . .	13	. .	56.0	57.2	8.5	9.7	10.9	12.3	13.4	24.7	26.0	. .	26 10.97	+ 0.16	19.01	18 25 52.12	1.31
	*−31° 0′ . . .	14	. .	. .	. .	. .	. .	. .	54.4	57.8	59.0	0.1	1.4	26 58.54	− 39.10	19.01	18 26 0.43	1.31
	1 Aquilæ	15	. .	. .	. .	. .	. .	. .	56.2	58.8	0.1	1.3	2.5	28 59.78	− 33.92	19.01	18 28 6.85	1.05
	O. Arg. S. 18505 .		47.7	50.0	51.2	1.8	2.9	4.3	5.7	6.9	17.5	18.7	20.9	32 4.33	+ 0.14	19.01	18 31 45.46	1.24
	51 Cephei, S. P. . .	17	. .	. .	. .	31.0	52.5	15.5	43.0	2.0	. .	. .	. .	38 16.80	1.24	19.01	. . . .	44.97
	O. Arg. S. 18802 .	18	17.9	20.3	21.4	32.5	33.6	34.8	36.0	37.1	48.4	49.5	51.6	46 34.83	+ 0.15	19.01	18 46 15.97	1.22
	*−39° 41′ . . .	19	. .	. .	. .	20.6	21.9	24.4	44.4	47.5	49.1	50.5	52.2	48 38.82	− 33.59	19.01	18 47 46.22	1.31
	Lacaille 7932 . .	20	9.8	12.3	13.6	26.5	27.9	29.2	30.6	31.8	44.6	45.7	48.6	50 29.15	+ 0.20	19.01	18 50 10.34	1.30
	*−18° 57′ . . .	21	3.2	5.3	6.4	16.7	17.7	19.0	20.2	21.2	31.7	32.6	34.8	0 18.98	+ 0.12	19.01	19 0 0.09	1.10
	β Coronæ Australis.	22	. .	. .	. .	37.6	39.1	41.8	1.5	4.8	6.7	8.1	9.4	1 56.12	− 33.53	19.01	19 1 3.58	1.27
	*−34° 33′ . . .	†23	. .	. .	. .	37.7	38.8	40.9	59.8	3.0	4.4	5.8	7.4	17 54.72	31.40	19.00	19 17 4.32	1.20
	Lacaille 8121 . .	24	36.4	39.4	40.8	. .	. .	. .	38.2	41.9	43.6	45.3	47.0	23 19.08	− 21.64	19.00	19 22 38.44	1.23
	κ Aquilæ	25	56.5	58.7	59.8	9.5	10.4	11.7	12.8	13.9	23.6	24.8	26.9	30 11.69	+ 0.08	19.00	19 29 52.77	0.89
	Lacaille 8174 . .	26	. .	. .	. .	18.6	19.9	21.6	23.1	24.5	37.0	38.3	40.8	31 27.98	− 6.27	19.00	19 31 2.71	1.19
	γ Aquilæ	27	. .	. .	. .	35.3	36.3	38.4	53.8	56.4	57.7	58.8	0.1	40 49.60	− 26.39	19.00	19 40 4.21	0.57
	O. Arg. S. 20072 .	28	51.5	53.7	54.9	5.2	6.2	7.4	8.6	9.7	20.2	21.1	23.3	48 7.44	+ 0.12	19.00	19 47 48.56	1.01
	B. A. C. 6844 . .	29	20.4	23.5	25.0	38.0	39.3	41.2	42.7	44.2	57.5	59.2	2.0	51 41.18	0.22	19.00	19 51 22.40	1.16
	B. A. C. 6882 . .	30	16.5	18.9	20.2	30.6	31.7	33.0	34.3	35.5	46.0	47.2	49.5	56 33.04	0.02	19.00	19 56 14.06	0.18
	Lacaille 8354 . .	31	4.2	6.8	8.2	19.8	20.9	22.3	23.8	25.0	36.7	37.9	40.4	1 22.36	0.18	19.00	20 1 3.54	1.10
	*−9° 14′ . . .	32	29.7	31.8	33.0	42.8	43.8	44.9	46.1	47.2	57.0	58.0	0.1	3 44.95	0.09	19.00	20 3 26.04	0.86
	Weisse 46 . . .	33	9.7	11.9	13.0	22.8	23.7	25.0	26.2	27.2	37.0	38.1	40.1	4 24.97	+ 0.09	19.00	20 4 6.06	0.86
	Lalande 38783. .	34	. .	. .	. .	54.0	55.2	57.8	14.1	16.5	17.9	19.4	20.6	8 9.44	− 27.78	19.00	20 7 22.66	0.28
	*+20° 42′ . . .	35	28.7	31.3	32.5	42.7	43.8	45.1	46.4	47.5	. .	. .	. .	7 39.75	+ 5.35	19.00	20 7 26.10	0.28
	*+20° 42′ . . .	36	. .	. .	. .	. .	. .	. .	29.6	30.9	33.0	49 3	51.8	53.3	8 41.32	− 24.30	19.00	20 7 58.02	0.28
	O. Arg. S. 20398 .	37	14.5	16.8	18.2	29.3	30.5	31.8	33.2	34.5	45.5	46.7	48.9	12 31.81	+ 0.16	19.00	20 12 12.97	1.06
	B. A. C. 6984, (1st *)	38	. .	. .	. .	. .	. .	. .	. .	. .	57.3	58.4	0.9	12 58.87	− 15.10	19.00	20 12 24.77	1.06
	B. A. C. 6984, (2d *)	39	. .	. .	. .	. .	. .	. .	19.6	22.4	23.9	25.2	26.7	13 23.56	− 38.45	19.00	20 12 26.11	1.06
	O. Arg. S. 20503 .	40	23.6	26.0	27.0	37.6	38.6	39.9	41.0	42.4	52.9	54.0	56.2	19 39.93	+ 0.13	19.00	20 19 21.06	+ 1.00
	Lalande 39884. .	41	. .	. .	. .	2.6	4.2	6.7	26.1	29.1	30.6	32.3	34.0	33 20.70	− 32.84	18.99	20 32 28.87	− 0.34
	*+37° 40′ . . .	42	46.4	48.8	50.4	2.6	3.8	5.4	7.0	8.2	20.6	21.9	24.3	34 5.40	− 0.02	18.99	20 33 46.39	− 0.34
	B. A. C. 7210 . .	43	. .	20.6	21.9	32.8	33.9	35.2	36.5	37.7	48.6	49.9	. .	42 35.23	+ 0.15	18.99	20 42 16.39	+ 1.01
	*−27° 53′ . . .	44	56.4	57.7	59.2	0.4	2.9	. .	10.7	13.2	14.7	16.4	17.7	42 36.93	− 0.24	18.99	20 42 17.70	1.01
	B. A. C. 7225 . .	45	47.5	50.0	51.2	2.1	3.2	4.5	5.9	7.0	18.0	19.3	21.4	44 4.55	+ 0.15	18.99	20 43 45.71	+ 1.01
	*+82° 34′ . . .	46	. .	. .	. .	41.4	48.9	57.7	6.9	15.4	. .	. .	. .	50 58.06	− 0.45	18.99	20 50 38.62	− 14.99
	ζ Cygni	47	25.9	28.4	29.8	40.8	41.8	43.2	44.7	45.9	56.9	58.1	0.5	7 43.27	0.00	18.99	21 7 24.28	+ 0.03
6 F.	B. A. C. 6031 . .	48	41.2	43.7	45.0	57.0	58.0	59.4	1.0	2.2	. .	. .	. .	43 53.44	+ 6.28	19.91	17 43 39.81	1.49
	*−31° 58′ . . .	49	. .	. .	. .	47.2	48.5	51.4	9.8	12.7	14.1	15.7	17.4	45 4.60	− 30.42	19.91	17 44 14.27	1.47
	*−31° 35′ . . .	50	. .	. .	. .	32.7	33.9	35.5	37.0	38.0	49.2	50.9	53.1	48 41.29	− 5.59	−19.91	17 48 15.79	+ 1.45

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 3, 17.5	− 18.58	+ 0.010	− 0.20	− 0.06
5, 19.7	− 19.00	+ 0.008	− 0.13	− 0.07

16. Duplex.
23. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.
Aug. 6	γ^2 Sagittarii . . .	1	28.6	30.7	32.0	43.5	44.5	45.9	47.1	48.4	59.8	0.9	3.3	57 45.88	+ 0.23	−19.91	. . . . .	+ 1.40
F.	O. Arg. S. 18000 .	2	23.0	25.0	26.2	36.4	37.5	38.8	40.0	41.2	51.3	52.3	54.6	10 38.75	+ 0.16	19.91	18 10 19.00	+ 1.24
	δ Ursæ Minoris . .	3	. .	. .	. .	. .	10.2	30.4	48.8	. .	. .	. .	. .	15 29.80	− 22.28	19.91	. . . . .	− 30.43
	*+61° 9′ . . .	4	49.3	53.7	56.3	16.4	18.2	20.5	23.3	25.2	45.4	47.3	51.4	25 20.64	− 0.42	19.90	18 25 0.32	− 1.84
	O. Arg. S. 19374 .	5	. .	30.9	32.1	42.2	43.3	44.5	45.7	46.8	57.1	58.1	. .	11 44.52	+ 0.16	19.90	19 11 24.78	+ 1.06
	B. A. C. 6607 . .	6	. .	. .	. .	7.1	8.2	9.4	10.8	12.0	22.2	23.3	25.7	13 14.84	− 5.22	19.90	19 12 49.72	1.11
	O. Arg. S. 19632 .	7	35.9	37.9	39.2	49.3	50.4	51.8	52.9	54.0	4.0	5.2	7.5	22 51.65	+ 0.16	19.90	19 22 31.91	1.06
	*−39° 45′ . . .	8	33.7	36.3	37.8	50.2	51.5	. .	54.6	56.0	8.5	9.8	12.4	48 53.08	+ 0.30	19.90	19 48 33.48	1.15
	π Capricorni. . .	9	. .	. .	. .	8.8	9.9	11.3	12.7	13.8	23.8	24.9	27.1	20 16.54	− 5.08	19.90	. . . . .	0.96
	β Geminorum . .	10	. .	. .	. .	. .	. .	. .	18.7	21.4	22.8	24.3	25.7	38 22.58	− 37.78	27.22	. . . . .	3.91
7	ζ Ophiuchi . . .	11	9.8	11.9	13.0	22.9	24.0	25.1	26.3	27.4	37.2	38.2	40.4	30 25.11	+ 0.61	27.17	16 29 58.55	1.55
Y.	κ Ophiuchi . . .	12	41.2	43.3	44.4	54.2	55.2	56.5	57.6	58.8	8.4	9.6	11.7	51 56.45	+ 0.53	27.17	16 51 29.81	+ 1.21
	ε Ursæ Minoris . .	†13	7.7	23.6	31.9	42.8	49.9	59.7	7.9	15.9	27.5	34.5	50.6	59 59.27	− 0.44	27.17	. . . . .	− 8.57
	α^1 Herculis . . .	14	53.3	55.5	56.7	6.5	7.6	8.9	10.1	11.3	21.0	22.2	24.3	9 8.85	+ 0.51	27.17	17 8 42.19	+ 1.05
	*−34° 58′ . . .	15	23.6	25.0	26.8	28.3	30.8	. .	44.0	47.0	48.4	49.9	51.5	45 7.53	0.34	27.17	17 44 40.70	1.50
	*−34° 54′ . . .	16	49.4	51.9	53.4	5.1	6.2	7.7	9.0	10.4	22.3	23.6	26.0	45 7.73	+ 0.76	27.17	17 44 41.32	1.50
	*+37° 45′ . . .	17	. .	. .	. .	. .	. .	. .	33.7	36.8	38.2	39.8	41.3	46 37.96	− 42.12	27.17	17 45 28.67	0.21
	*−31° 13′ . . .	18	. .	. .	. .	. .	. .	. .	10.5	13.2	14.5	16.0	17.5	52 14.34	38.62	27.17	17 51 8.55	+ 1.44
	δ Ursæ Minoris. .	†19	2.0	37.5	55.0	38.5	56.0	17.0	37.0	55.5	37.5	56.5	29.0	15 16.50	− 2.54	27.17	. . . . .	− 30.11
	κ Aquilæ	20	4.3	6.4	7.5	17.4	18.3	19.6	20.8	21.8	31.7	32.6	34.5	30 19.54	+ 0.60	27.16	19 29 52.98	+ 0.89
	γ Aquilæ	21	5.3	7.6	8.7	28.5	29.5	30.8	32.0	33.2	42.9	43.9	46.0	40 30.76	0.53	27.16	19 40 4.13	0.57
	ε Delphini . . .	22	10.9	13.1	14.1	23.8	24.8	26.2	27.5	28.5	38.2	39.3	41.4	27 26.16	0.53	27.15	20 26 59.54	0.50
	μ Aquarii. . . .	23	48.7	50.9	52.0	1.9	2.8	4.0	5.1	6.2	16.0	17.1	19.1	46 3.98	0.61	27.15	20 45 37.44	0.84
9	O. Arg. S. 17354 .	24	40.9	43.2	44.4	. .	56.4	57.8	59.2	0.3	. .	. .	. .	47 51.74	+ 6.02	15.67	17 47 42.09	1.44
F.	O. Arg. S. 17361 .	25	. .	. .	. .	10.2	11.3	12.7	14.0	15.0	25.9	27.3	29.8	48 18.28	− 5.59	15.67	17 47 57.02	1.44
	O. Arg. S. 17433 .	26	. .	. .	. .	21.3	22.3	23.6	24.9	25.9	35.9	37.0	39.0	51 28.74	− 5.22	15.66	17 51 7.86	1.30
	γ^2 Sagittarii . . .	27	24.2	26.6	27.9	39.0	40.1	41.6	43.0	44.2	55.3	56.7	59.0	57 41.60	+ 0.01	15.66	. . . . .	1.43
	*−37° 40′ . . .	28	29.2	32.0	33.3	45.2	46.6	48.2	49.9	51.0	3.1	4.6	7.3	5 48.22	+ 0.04	15.66	18 5 32.60	1.47
	B. A. C. 6181 . .	29	. .	. .	. .	. .	. .	. .	35.3	37.5	39.0	40.7	42.2	8 38.94	− 38.53	15.66	18 7 44.75	1.40
	Taylor 8458 . .	30	12.6	15.0	16.2	27.0	28.0	29.4	30.8	32.0	. .	. .	. .	14 23.88	+ 5.56	15.66	18 14 13.78	+ 1.34
	δ Ursæ Minoris . .	31	. .	. .	. .	. .	. .	. .	. .	. .	25.9	46.5	21.5	18 51.30	− 3 49.65	15.66	. . . . .	− 29.53
	O. Arg. S. 18489 .	32	. .	. .	45.5	55.6	56.5	. .	. .	. .	10.3	. .	13.7	31 0.32	2.48	15.65	18 30 42.19	+ 1.20
	*− 1° 31′ . . .	33	8.6	10.9	12.0	21.6	22.9	24.0	25.2	26.2	36.1	37.2	39.2	59 23.99	0.10	15.65	18 59 8.24	0.87
	*− 1° 31′ . . .	34	29.4	31.4	32.6	42.5	43.6	44.8	45.9	47.0	56.9	58.1	0.0	0 44.75	0.10	15.65	19 0 29.00	0.87
	*−41° 15′ . . .	35	. .	. .	. .	50.0	51.7	54.4	14.1	16.0	18.5	20.3	22.0	11 8.37	33.97	15.65	19 10 18.75	1.27
	*−27° 23′ . . .	36	. .	. .	. .	10.4	11.6	12.8	14.0	15.1	. .	. .	. .	31 12.78	0.00	15.64	19 30 57.14	1.12
	*−24° 33′ . . .	37	. .	. .	. .	. .	. .	. .	32.5	34.6	35.9	37.8	39.0	34 35.96	− 36.26	15.64	19 33 44.06	1.08
	*−39° 45′ . . .	38	29.1	32.0	33.4	46.0	47.1	48.8	50.4	51.7	4.1	5.6	8.4	48 48.78	+ 0.04	15.64	19 48 33.18	1.15
	*+ 7° 52′ . . .	39	55.7	57.9	59.0	8.8	9.9	11.0	12.3	13.2	23.0	24.3	26.3	57 11.04	− 0.13	15.64	19 56 55.27	0.59
	O. Arg. S. 20311 .	40	9.9	12.0	13.1	23.6	24.9	26.0	27.4	28.4	39.0	40.1	42.6	5 26.09	0.02	15.63	20 5 10.44	1.01
	O. Arg. S. 20339 .	41	. .	. .	. .	31.4	32.8	33.8	34.9	36.1	46.0	47.1	49.5	7 38.95	5.22	15.63	20 7 18.10	0.93
	α^2 Capricorni . . .	42	50.0	52.0	53.0	3.0	4.1	5.2	6.5	7.5	17.3	18.5	20.7	11 5.25	0.06	15.63	. . . . .	0.90
	π Capricorni. . .	43	51.6	53.9	54.9	5.0	6.1	7.3	8.6	9.8	19.8	20.9	23.1	20 7.36	0.04	15.63	. . . . .	0.95
	*−31° 3′ . . .	44	. .	. .	. .	. .	. .	. .	55.2	57.5	58.8	0.2	1.4	44 58.62	38.46	15.62	20 44 4.54	1.01
	O. Arg. S. 20921 .	45	. .	. .	. .	. .	. .	. .	19.3	21.7	23.2	24.8	26.3	46 23.06	37.53	15.62	20 45 29.91	0.99
	O. Arg. S. 21245 .	46	12.5	14.5	15.7	26.0	27.0	28.5	29.9	30.8	41.3	42.5	44.4	8 28.46	0.03	15.62	21 8 12.81	+ 0.92
10	Moon I. . . .	†47	5.4	7.5	8.6	18.5	19.6	20.8	22.0	23.0	32.9	34.1	36.1	0 20.77	− 0.11	15.44	12 0 5.22	
Y.	Polaris, S. P. . .	48	. .	. .	. .	17.5	57.0	48.0	36.5	19.0	. .	. .	. .	11 47.60	+ 11.10	−15.42	. . . . .	− 24.85

13. Very unsteady.
19. Very unsteady.
Aug. 7. Image west 0r.18. Clamp east.
21h. Image west 0r.41. Clamp west.
Stars very unsteady this night.
47. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m	n	c
1869. h.	s.	s.	s.	s.	s.
Aug. 6, 19.2	− 19.90	+ 0.008	. .	− 0.25	+ 0.07
7, 17.3	− 27.17	+ 0.005	+ 0.50	− 0.25	+ 0.07
9, 19.5	− 15.64	+ 0.015	. .	− 0.21	− 0.10

DATE.	OBJECT.	Number.	I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Corrections. Inst.	Corrections. Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 10 Y.	α Virginis	1	18.5	20.6	21.8	31.4	32.6	33.8	34.9	36.1	45.7	46.8	49.0	18 33.75	− 0.07	−15.41	. . . .	+ 2.56
	α Ophiuchi	2	53.2	55.4	56.4	6.1	7.3	8.5	9.7	10.7	20.6	21.8	23.9	29 8.51	0.14	15.33	17 28 53.04	1.02
	*−35° 19′	3	. .	. .	. .	41.5	42.8	44.1	45.6	47.0	. .	. .	. .	41 44.20	0.00	15.32	17 41 28.88	1.56
	*−35° 17′	4	18.7	21.4	22.6	. .	. .	. .	. .	. .	51.7	53.0	55.7	42 37.18	0.00	15.32	17 42 21.86	1.55
	*−35° 17′	5	. .	. .	. .	36.5	37.7	39.1	40.5	41.7	. .	. .	. .	42 39.10	0.00	15.32	17 42 23.78	1.55
	*−35° 15′	6	4.0	6.6	8.1	19.9	21.0	22.7	24.2	25.3	37.1	38.5	41.0	43 22.58	0.00	15.32	17 43 7.26	1.55
	*−35° 15′ ±	7	. .	. .	. .	24.1	25.4	26.8	28.3	29.6	. .	. .	. .	44 26.84	0.00	15.32	17 44 11.52	1.55
	*−35° 15′	8	. .	. .	. .	. .	. .	. .	11.1	13.9	15.5	17.0	18.6	45 15.22	40.36	15.32	17 44 19.54	1.54
	*−31° 54′ ±	9	. .	. .	. .	. .	. .	. .	49.3	51.6	53.1	54.9	56.3	47 53.04	38.84	15.32	17 46 58.88	1.50
	*−31° 54′ ±	10	. .	. .	. .	17.6	18.8	20.2	21.5	22.9	34.2	35.4	37.9	47 26.06	5.86	15.32	17 47 4.88	1.50
	W'sse(2) 1601, (1st *)	11	. .	. .	. .	. .	. .	. .	. .	. .	9.4	10.6	12.8	51 10.93	14.14	15.32	17 50 41.47	0.79
	W'sse(2) 1601, (2d *)	12	. .	. .	. .	. .	. .	. .	28.5	30.6	32.0	33.4	34.6	51 31.82	34.89	15.32	17 50 41.61	0.79
	*−23° 36′	13	50.9	53.1	54.3	4.7	5.8	7.3	8.5	9.7	20.1	21.3	23.6	57 7.21	0.03	15.32	17 56 51.86	1.38
	B. A. C. 6173	14	42.6	45.0	46.2	57.3	58.6	59.9	1.4	2.4	13.5	14.7	17.2	6 59.89	0.02	15.31	18 6 44.56	1.41
	B. A. C. 6190	15	6.4	8.7	9.9	21.0	22.2	23.5	24.9	26.0	37.0	38.2	40.5	9 23.48	0.02	15.31	18 9 8.15	1.39
	B. A. C. 6236	16	3.9	6.4	7.6	19.1	20.2	21.6	22.9	24.2	35.6	36.9	39.5	16 21.63	0.01	15.31	18 16 6.31	1.40
	*−32° 13′	17	0.9	3.6	4.7	16.2	17.3	18.7	20.1	21.3	32.8	34.1	36.3	17 18.73	0.01	15.31	18 17 3.41	+ 1.39
	δ Ursæ Minoris	18	. .	. .	. .	. .	. .	. .	30.0	5.0	25.0	50.0	8.0	24 23.60	9 22.22	15.31	. . . .	− 29.23
	O. Arg. S. 18509	19	44.1	46.5	47.7	. .	. .	. .	. .	. .	14.0	15.1	17.5	32 0.82	0.03	15.31	18 31 45.48	+ 1.28
	Madras 8666	20	16.7	18.9	20.0	30.3	31.3	32.6	33.9	34.9	45.1	46.3	48.6	45 32.60	− 0.04	15.30	18 45 17.26	1.16
	*−39° 41′	21	42.1	44.7	46.1	58.7	0.1	1.5	3.0	4.4	16.8	18.3	21.0	48 1.52	+ 0.01	15.30	18 47 46.23	1.34
	Lacaille 7932	22	5.9	8.7	9.9	22.7	24.1	25.6	27.2	28.4	40.8	42.2	44.9	50 25.49	+ 0.01	15.30	18 50 10.20	+ 1.33
	ι Lyræ	23	36.7	39.5	40.6	52.4	53.9	55.3	56.9	58.2	9.9	11.2	13.9	2 55.32	− 0.25	15.29	19 2 39.78	− 0.08
	δ Aquilæ	24	56.1	58.2	59.3	9.0	10.1	11.3	12.6	13.6	23.0	24.2	26.4	19 11.25	0.11	15.29	19 18 55.85	+ 0.78
	*−23° 25′	25	7.8	10.2	11.5	21.9	23.1	24.3	25.6	26.7	37.2	38.4	40.7	23 24.31	− 0.03	15.29	19 23 8.99	1.10
	Lacaille 8174	26	58.5	1.3	2.6	15.2	16.6	18.1	19.8	21.0	33.5	34.8	37.5	31 18.08	+ 0.01	15.28	19 31 2.81	+ 1.20
	*+38° 34′	27	1.2	3.5	4.7	17.5	18.7	20.3	21.7	23.1	35.9	37.3	40.1	34 20.36	− 0.26	15.28	19 34 4.82	− 0.30
	*+38° 33′	28	. .	. .	. .	56.7	58.5	0.6	19.2	22.0	23.7	25.5	27.8	35 14.25	− 32.96	15.28	19 34 26.01	− 0.30
	*−22° 30′	29	56.9	59.6	0.9	10.4	11.4	12.7	13.9	15.0	. .	. .	. .	44 7.60	+ 5.36	15.28	19 43 57.68	+ 1.04
	*−22° 19′	30	10.0	12.5	14.0	38.8	40.2	42.6	57.7	0.3	1.6	3.2	4.6	48 42.32	− 16.22	15.28	19 48 10.82	+ 1.03
	*+36° 10′	31	10.6	12.3	13.6	15.2	18.3	. .	. .	. .	. .	. .	. .	55 14.00	+ 41.44	15.28	19 55 40.16	− 0.24
	*+36° 12′	32	49.3	51.8	53.3	. .	. .	. .	. .	. .	22.5	23.9	26.6	56 7.90	− 0.25	15.28	19 55 52.37	0.25
	*+36° 12′	33	. .	. .	. .	7.3	8.7	10.2	11.7	13.0	. .	. .	. .	56 10.18	− 0.25	15.28	19 55 54.65	0.25
	Lalande 38283	34	27.3	28.9	30.3	31.9	35.0	. .	49.1	51.8	53.2	55.3	56.5	56 11.93	+ 0.18	15.28	19 55 56.83	− 0.25
	*−39° 6′	†35	16.5	18.6	20.0	31.4	33.0	34.7	36.5	38.1	50.7	51.9	54.2	0 35.05	+ 0.01	15.27	20 0 19.79	+ 1.12
	O. Arg. S. 20286	36	34.3	36.6	37.7	. .	. .	. .	24.7	27.1	28.5	30.1	31.5	4 8.81	− 17.67	15.27	20 3 35.87	1.04
	*−39° 25′	37	25.4	28.1	29.5	41.9	43.2	44.8	46.3	47.6	0.1	1.5	4.1	8 44.77	+ 0.01	15.27	20 8 29.51	+ 1.10
	κ Cephei, (1st *)	38	29.6	38.6	43.9	. .	. .	. .	. .	. .	31.6	36.5	45.9	13 37.68	− 1.21	15.27	20 13 21.20	− 7.89
	κ Cephei, (2d *)	39	. .	. .	. .	29.1	34.2	39.5	44.8	49.4	. .	. .	. .	13 39.40	1.21	15.27	20 13 22.92	− 7.89
	π Capricorni	40	51.2	53.2	54.4	4.7	5.8	7.0	8.2	9.3	19.4	20.6	22.8	20 6.96	0.04	15.27	20 19 51.65	+ 0.95
	*−21° 21′	41	51.4	53.7	54.8	5.1	6.2	7.4	8.7	9.9	20.2	21.4	23.7	26 7.50	0.04	15.27	20 25 52.19	0.96
	*−16° 43′	42	37.2	39.4	40.5	50.5	51.6	52.8	54.0	55.2	5.2	6.3	8.3	32 52.82	0.05	15.26	20 32 37.51	+ 0.90
	*+44° 48′	43	. .	12.0	13.3	26.8	28.3	30.0	31.8	33.2	46.5	48.3	. .	35 30.02	0.31	15.26	20 35 14.45	− 0.73
	η Cephei	44	25.5	29.9	31.8	51.8	54.3	56.9	59.3	1.3	21.5	23.8	28.1	42 56.75	0.52	15.26	20 42 40.97	− 2.35
	ζ Cygni	45	22.5	24.8	25.9	37.0	38.3	39.6	41.1	42.4	53.3	54.5	56.9	7 39.66	− 0.21	15.25	21 7 24.20	0.00
	Lacaille 8760	46	33.0	35.8	36.9	49.6	50.8	52.6	53.9	55.4	8.0	9.2	11.8	9 52.45	+ 0.01	15.25	21 9 31.21	+ 0.99
11 F.	1 Aquilæ	47	7.1	9.3	10.5	20.2	21.3	. .	23.6	24.7	34.3	35.5	37.5	28 22.40	− 0.07	15.40	. . . .	1.09
	*− 8° 51′	48	. .	. .	. .	22.9	23.7	24.8	26.0	27.0	. .	. .	. .	0 24.88	− 0.07	15.39	19 0 9.42	1.00
	*−34° 0′	49	43.0	44.3	46.2	47.6	50.4	. .	. .	. .	. .	. .	. .	59 46.30	+ 40.56	15.39	19 0 11.47	1.27
	B. A. C. 6590	50	. .	. .	. .	47.3	48.3	49.6	51.0	52.0	. .	. .	. .	10 49.64	− 0.06	−15.38	19 10 34.20	+ 1.06

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 10, 18.3	− 15.31	+ 0.021	− 0.17	− 0.10

35. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 11	23 Aquilæ	1	. .	. .	. .	21.8	23.0	25.0	39.9	42.0	43.2	44.7	45.8	12 35.68	− 25.67	−15.38	19 11 54.63	+ 0.82
F.	δ Aquilæ	2	. .	. .	. .	9.0	10.0	11.2	12.4	13.4	22.9	24.0	26.0	19 16.11	5.08	15.38	. . . .	+ 0.78
	B. A. C. 6721 . .	3	. .	. .	. .	. .	. .	14.9	16.4	18.0	32.2	33.8	37.0	31 25.38	− 11.02	15.38	19 30 58.98	− 0.82
	λ Ursæ Minoris . .	4	. .	. .	. .	30.0	23.0	. .	. .	. .	. .	. .	. .	54 56.50	+ 1 19.30	15.37	. . . .	− 111.99
	64 Sagittarii . . .	5	. .	. .	. .	21.3	22.3	24.3	39.1	41.4	42.7	44.1	45.3	58 35.06	− 26.22	15.37	19 57 53.47	+ 0.90
	*−14° 16′ . . .	6	12.3	14.5	15.5	25.5	26.8	. .	28.9	30.1	40.1	41.2	43.4	4 27.83	0.06	15.36	20 4 12.41	0.92
	Weisse 135. . .	7	. .	. .	. .	. .	. .	. .	. .	. .	21.0	22.2	23.7	8 22.23	33.86	15.36	20 7 33.01	0.88
	B. A. C. 6949 . .	8	. .	. .	. .	. .	. .	. .	. .	26.9	28.3	29.6	31.0	8 28.95	34.49	15.36	20 7 39.10	0.88
	π Capricorni . . .	9	. .	. .	. .	4.6	5.8	7.1	8.2	9.2	19.5	20.5	. .	20 10.70	− 3.79	15.36	. . . .	0.94
	O. Arg. S. 20675 .	10	45.3	47.7	49.0	59.2	0.4	1.6	3.0	4.0	. .	. .	. .	30 56.28	+ 5.31	15.36	20 30 46.23	0.95
	*−39° 26′ . . .	11	7.8	10.2	11.6	24.7	25.8	27.1	28.8	29.9	42.5	44.2	47.0	44 27.24	− 0.02	15.35	20 44 11.87	1.03
	ζ Cygni	12	22.8	25.0	26.3	37.3	38.4	40.0	41.4	42.5	53.5	54.7	57.0	7 39.90	0.17	15.34	. . . .	0.00
	α Equulei . . .	13	. .	. .	. .	46.0	47.5	49.3	3.8	6.8	7.7	9.0	10.2	10 0.04	25.77	15.34	21 9 18.93	0.60
13	*−32° 2′ . . .	14	. .	. .	. .	10.8	11.8	13.1	14.6	15.9	28.4	29.5	32.3	48 19.55	− 5.83	14.93	17 47 58.79	1.53
	γ² Sagittarii . . .	15	23.4	25.9	27.1	38.3	39.5	40.8	42.2	43.5	54.5	55.9	58.3	57 40.85	+ 0.02	14.93	17 57 25.94	1.47
	O. Arg. S. 17853 .	16	. .	. .	. .	16.2	17.3	18.5	20.0	21.4	. .	. .	. .	6 18.68	− 0.01	14.93	18 6 3.74	1.36
	O. Arg. S. 17871 .	17	. .	. .	. .	38.5	39.7	41.0	42.2	43.5	. .	. .	. .	6 40.98	0.01	14.93	18 6 26.04	1.36
	*−18° 59′ . . .	18	. .	. .	. .	. .	. .	. .	39.5	42.0	43.3	44.8	46.0	7 43.12	34.88	14.93	18 6 53.31	+ 1.32
	δ Ursæ Minoris . .	19	. .	. .	. .	. .	. .	. .	. .	42.0	23.5	43.0	. .	17 36.17	2 36.62	14.92	. . . .	− 28.34
	B. A. C. 6537 . .	20	. .	. .	. .	16.6	17.8	20.4	37.6	40.0	41.5	43.0	44.3	1 32.65	29.77	14.92	19 0 47.96	+ 1.25
	*−30° 51′ . . .	21	. .	. .	. .	. .	. .	. .	53.8	56.5	57.7	59.5	1.2	1 57.79	38.37	14.92	19 1 4.50	+ 1.25
	54 Draconis . . .	22	. .	. .	. .	. .	. .	. .	48.3	52.1	54.2	57.0	59.1	12 54.14	1 1.78	14.91	19 11 37.45	− 1.55
	κ Cygni	23	. .	. .	. .	. .	. .	. .	12.1	15.5	17.6	19.9	21.6	15 17.34	55.34	14.91	19 14 7.09	− 1.14
	δ Aquilæ	24	. .	. .	. .	22.7	23.8	25.8	40.6	42.6	43.8	45.0	46.6	19 36.36	− 25.70	14.91	19 18 55.75	+ 0.79
	*−28° 51′ . . .	25	40.1	42.2	43.4	54.4	55.7	57.0	58.3	59.4	10.4	11.8	14.0	39 56.97	+ 0.01	14.91	19 39 42.07	1.12
	Lacaille 8394 . .	26	. .	. .	. .	19.8	21.0	23.9	40.7	43.5	44.9	46.4	47.9	9 36.01	− 29.99	14.91	20 8 51.11	+ 1.06
	η Cephei	27	25.0	29.1	31.2	51.3	53.8	56.2	58.8	0.7	21.0	23.2	27.4	42 56.15	− 0.52	14.90	20 42 40.73	− 2.32
	O. Arg. S. 21012 .	28	10.9	13.0	14.3	24.4	25.6	26.7	28.0	29.5	. .	. .	. .	52 21.55	+ 5.26	14.90	20 52 11.91	+ 0.90
	O. Arg. S. 21245 .	29	11.7	14.0	15.0	. .	26.7	27.7	29.0	30.2	40.5	41.8	44.0	8 28.06	− 0.26	14.90	21 8 12.90	0.90
	1 Pegasi	30	3.4	5.5	6.7	16.9	18.0	19.3	20.8	22.1	31.8	32.9	35.2	16 19.33	0.15	14.89	21 16 4.29	0.30
14	Moon I. . . .	31	32.3	34.4	35.5	45.8	46.9	48.2	49.5	50.5	0.6	1.9	4.1	45 48.15	0.02	14.49	15 45 33.64	
Y.	δ Scorpii	32	35.2	37.5	38.7	49.0	50.1	51.5	52.8	53.9	4.3	5.5	7.8	52 51.48	0.00	14.49	. . . .	1.96
	β¹ Scorpii	33	49.5	51.8	52.8	3.0	4.0	5.5	6.7	7.8	17.9	19.1	21.4	58 5.41	0.01	14.49	. . . .	1.95
	δ Ophiuchi . . .	34	29.9	31.9	33.0	42.6	43.7	45.0	46.2	47.2	56.8	57.8	0.0	7 44.92	0.06	14.49	. . . .	1.71
	Weisse 794. . .	35	7.0	9.3	10.5	20.3	21.5	22.6	23.9	24.9	34.7	35.8	38.0	42 21.59	0.14	14.48	16 42 6.97	+ 1.35
	ε Ursæ Minoris . .	36	55.5	11.0	18.9	30.4	38.0	47.2	55.8	3.0	14.7	23.2	38.0	59 46.88	2.13	14.48	. . . .	− 7.45
	O. Arg. S. 17871 .	37	. .	. .	. .	38.0	39.1	40.4	41.6	42.9	53.1	54.2	56.4	6 45.71	5.36	14.47	18 6 25.88	+ 1.37
	B. A. C. 6181 . .	38	. .	. .	. .	13.0	14.3	16.7	33.7	36.0	37.7	39.2	40.9	8 28.94	29.87	14.47	18 7 44.60	+ 1.46
	δ Ursæ Minoris . .	†39	. .	. .	. .	25.5	44.0	. .	. .	. .	24.0	43.0	. .	16 34.12	1 35.25	14.47	. . . .	− 28.01
	B. A. C. 6309 . .	40	30.5	32.7	33.8	44.0	45.0	46.3	47.5	48.6	58.7	59.8	2.1	25 46.27	0.02	14.47	18 25 31.78	+ 1.26
16	ο Serpentis . . .	41	. .	. .	. .	17.7	18.8	20.0	21.2	22.2	32.2	33.2	35.4	34 25.09	5.15	14.84	17 34 5.10	1.42
	Moon I. . . .	42	59.3	1.4	2.7	13.2	14.4	15.6	17.0	18.1	28.5	29.9	32.0	39 15.65	0.03	14.84	17 39 0.78	
	μ Herculis . . .	43	. .	. .	. .	34.0	35.2	36.4	38.0	39.0	49.8	51.0	53.4	41 42.10	− 5.75	14.84	17 41 21.51	0.70
	*+8° 43′, (1st *) .	44	18.7	20.0	21.2	22.5	24.9	. .	25.5	27.7	28.9	30.3	31.6	46 55.13	+ 0.26	14.84	17 46 40.55	1.06
	*+8° 43′, (2d *) .	45	43.0	45.0	46.1	55.8	56.8	58.0	59.2	0.2	10.1	11.2	13.4	46 58.07	− 0.09	14.84	17 46 43.14	1.06
	4 Sagittarii . . .	46	. .	. .	. .	17.5	18.8	21.1	37.3	39.4	40.8	42.3	43.6	52 32.60	27.98	14.84	17 51 49.78	1.47
	*−18° 57′ . . .	47	49.0	51.2	52.3	2.6	3.4	4.8	6.0	7.4	17.4	18.9	20.6	7 4.87	0.04	14.83	18 6 50.00	+ 1.35
	δ Ursæ Minoris. .	48	. .	. .	. .	24.0	41.5	1.0	21.0	39.5	. .	. .	. .	15 1.40	2.92	14.83	. . . .	− 27.28
	κ Aquilæ. . . .	49	52.7	54.9	55.9	5.6	6.6	7.8	9.0	10.0	19.7	20.8	22.9	30 7.81	− 0.05	−14.82	19 29 52.94	+ 0.92

39. Cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 11, 19.8	− 15.37	+ 0.021	− 0.12	− 0.09
13, 19.7	− 14.91	+ 0.010	− 0.19	− 0.08
14, 16.0	− 14.49	+ 0.010	− 0.21	− 0.08

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Aug. 16 F.	*—38° 5′	1	53.0	55.5	56.8	9.0	10.3	11.5	12.8	14.2	26.9	28.2	31.0	49 11.75	— 0.01	—14.82	19 48 56.92	+ 1.16
	O. Arg. S. 20111	2	42.1	44.4	45.7	56.7	57.9	59.2	0.6	1.8	12.8	14.0	16.4	50 59.24	0.02	14.82	19 50 44.40	1.10
	Weisse 1402	3	35.4	37.4	38.5	48.3	49.4	50.5	51.8	52.8	2.4	3.5	5.6	56 50.51	0.09	14.81	19 56 35.61	0.61
	O. Arg. S. 20322	4	3.2	5.5	6.6	16.6	17.8	19.0	20.1	21.2	31.2	32.3	34.5	6 18.91	0.03	14.81	20 6 4.07	0.93
	α^2 Capricorni	5	. .	. .	. .	. .	. .	. .	34.8	36.8	38.2	39.8	41.0	11 38.12	33.88	14.81	20 10 49.43	0.90
	π Capricorni	6	50.9	53.0	54.0	4.3	5.3	6.6	8.0	8.9	19.1	20.2	22.3	20 6.61	0.04	14.81	20 19 51.76	0.94
17 Y.	μ Sagittarii	7	56.1	58.3	59.5	9.9	10.9	12.2	13.5	14.6	24.9	26.0	28.4	6 12.21	0.04	14.23	. . . .	1.40
	21 Sagittarii	8	33.3	35.6	36.7	47.0	48.0	49.4	50.6	51.7	2.0	3.2	5.4	17 49.35	0.04	14.23	18 17 35.08	1.34
18 F.	O. Arg. S. 17159	9	22.3	24.4	25.6	35.8	36.8	38.0	39.2	40.2	50.4	51.4	53.7	37 37.98	— 0.10	14.88	17 37 23.00	1.53
	*—35° 9′	10	21.2	24.1	25.3	37.0	38.2	39.9	. .	42.5	54.3	55.5	58.2	41 39.62	+ 0.01	14.88	17 41 24.75	1.66
	*—25° 43′	11	6.8	9.0	10.1	20.9	22.0	23.2	24.7	25.7	36.5	37.7	40.0	45 23.33	— 0.11	14.87	17 45 8.35	1.55
	*—31° 54′	12	28.6	31.4	32.6	. .	. .	46.2	47.5	48.7	1.0	2.2	4.3	47 46.94	— 0.57	14.87	17 47 31.50	+ 1.60
	δ Ursæ Minoris	13	45.0	19.5	36.5	. .	. .	. .	. .	. .	. .	. .	. .	11 13.66	+ 3 44.42	14.87	. . . .	— 26.51
	*+85° 40′	14	. .	. .	. .	. .	. .	. .	. .	. .	42.0	58.3	24.7	18 1.67	— 2 55.56	14.87	18 14 51.24	— 20.33
	η Serpentis	15	33.8	35.9	36.9	46.5	47.7	48.7	50.0	50.9	0.6	1.7	3.8	14 48.77	0.07	14.87	. . . .	+ 1.13
	B. A. C. 6304	16	14.7	17.0	18.2	28.7	29.8	31.0	32.4	33.5	44.2	45.4	47.6	25 31.14	0.11	14.87	18 25 16.16	+ 1.36
	Lalande 34831	17	15.0	21.7	25.3	56.0	59.7	4.0	7.6	10.6	43.5	46.0	53.0	35 3.86	— 0.01	14.87	18 34 48.98	— 3.82
	Lalande 34918	18	. .	14.0	17.4	48.7	52.0	55.8	59.6	3.1	35.0	38.6	. .	36 56.02	+ 0.01	14.87	18 36 41.16	3.83
	Lalande 35004	19	. .	. .	. .	41.8	44.5	49.0	52.8	56.2	. .	. .	. .	37 48.86	— 0.01	14.87	18 37 33.98	3.86
	Lalande 35006	20	. .	. .	. .	24.8	27.9	30.8	35.9	39.2	. .	. .	. .	38 31.72	0.01	14.87	18 38 16.84	3.85
	Lalande 35041	21	. .	. .	. .	24.4	27.7	31.7	35.5	38.7	. .	. .	. .	39 31.60	0.01	14.87	18 39 16.72	— 3.87
	B. A. C. 6504	22	31.1	33.4	34.5	45.0	46.0	47.3	48.7	49.7	0.0	1.0	3.5	56 47.29	0.10	14.86	18 56 32.33	+ 1.21
	β Coronæ Australis	23	59.0	1.8	3.0	15.5	17.0	18.7	20.1	21.4	34.0	35.4	38.2	1 18.55	0.15	14.86	19 1 3.54	1.36
	*—32° 6′	24	43.2	45.9	47.0	58.7	59.9	1.0	2.4	3.7	15.1	16.4	18.8	11 1.10	— 0.12	14.86	19 10 46.12	1.26
	O. Arg. S. 19460	25	26.8	28.7	30.2	41.6	42.7	43.9	45.2	46.2	. .	. .	. .	15 38.16	+ 5.57	14.86	19 15 28.87	1.22
	O. Arg. S. 19466	26	. .	. .	. .	48.5	50.0	51.4	52.4	54.9	. .	. .	. .	15 51.44	— 0.12	14.86	19 15 36.46	1.22
	Weisse (2) 616	27	6.0	8.4	9.6	19.8	20.9	22.2	23.5	24.5	34.8	36.0	38.2	21 22.17	— 0.05	14.86	19 21 7.26	+ 0.46
	B. A. C. 6721	28	19.9	21.3	23.3	25.2	29.0	. .	. .	. .	. .	. .	. .	30 23.74	+ 50.15	14.86	19 30 59.03	— 0.72
	Moon I	29	27.1	29.3	30.7	41.1	42.4	43.7	45.0	46.2	56.7	58.0	0.2	31 43.67	— 0.09	14.86	19 31 28.72	
	f Sagittarii	30	44.4	46.6	47.8	58.0	59.2	0.4	1.8	2.7	13.0	14.1	16.6	39 0.42	— 0.10	14.86	19 38 45.46	+ 0.40
	Weisse (2) 1729	31	57.4	0.2	1.5	14.0	15.3	16.6	. .	. .	32.0	33.3	36.1	53 16.27	+ 0.46	14.85	19 53 1.88	— 0.30
	*+38° 16′	32	. .	. .	. .	. .	. .	. .	57.0	59.4	1.0	. .	. .	7 59.13	— 40.21	14.85	20 7 4.07	0.30
	*+38° 17′	33	. .	. .	. .	. .	. .	. .	. .	5.5	7.3	9.1	10.4	8 8.07	41.15	14.85	20 7 12.07	— 0.30
	π Capricorni	34	50.9	53.1	54.1	4.4	5.3	6.5	7.9	9.0	19.2	20.4	22.5	20 6.66	0.10	14.85	. . . .	+ 0.94
19 Y.	μ Herculis	35	17.9	20.3	21.5	32.3	33.6	35.0	36.3	37.5	48.3	49.6	51.9	41 34.93	— 0.16	13.28	17 41 21.49	0.75
	*—28° 1′	36	3.8	6.2	7.5	18.4	19.4	20.8	22.0	23.2	34.2	35.3	37.8	45 20.78	+ 0.03	13.28	17 45 7.53	+ 1.53
	δ Ursæ Minoris	37	45.0	5.5	27.0	47.0	28.0	. .	. .	. .	. .	. .	. .	5 30.50	9 25.31	13.27	. . . .	— 26.13
	*—26° 31′	38	26.9	29.2	30.4	41.2	42.3	43.7	45.0	46.3	. .	. .	. .	14 38.12	+ 5.58	13.27	18 14 30.43	+ 1.44
	*—26° 31′	39	. .	. .	. .	1.2	2.2	4.2	20.6	23.0	24.9	26.5	28.2	15 16.35	— 28.56	13.27	18 14 34.52	1.44
	*—31° 49′	40	. .	. .	. .	37.0	38.3	39.6	41.0	42.2	53.7	55.0	57.4	17 45.52	5.81	13.27	18 17 26.44	1.48
	O. Arg. S. 18209	41	. .	. .	. .	11.7	12.9	15.3	31.4	33.7	35.1	36.6	37.8	19 26.81	27.88	13.27	18 18 45.66	+ 1.39
	Lalande 34831	42	. .	. .	. .	54.7	58.4	2.2	6.2	9.3	. .	. .	. .	35 2.16	0.76	13.27	18 34 48.13	— 3.76
	Lalande 34918	43	. .	. .	. .	46.9	50.0	54.1	58.0	1.2	. .	. .	. .	36 54.04	0.76	13.27	18 36 40.01	3.77
	Lalande 35004	44	. .	. .	. .	40.4	43.8	47.8	51.8	55.0	. .	. .	. .	37 47.76	0.76	13.27	18 37 33.73	3.78
	Lalande 35006	45	. .	. .	. .	22.6	26.6	30.2	34.1	37.4	. .	. .	. .	38 30.18	0.76	13.27	18 38 16.15	3.79
	Lalande 35041	46	. .	. .	. .	22.9	26.4	30.1	34.3	37.8	. .	. .	. .	39 30.30	0.76	13.27	18 39 16.27	— 3.81
	Madras 8666	47	14.7	16.8	17.8	28.2	29.2	30.5	31.7	32.9	42.9	44.1	46.4	45 30.47	0.00	13.27	18 45 17.20	+ 1.24
	*—7° 38′	48	37.0	39.1	40.2	49.9	50.9	52.0	53.2	54.3	4.0	5.1	7.3	55 52.09	0.04	13.27	18 55 38.78	1.06
	B. A. C. 6504	49	. .	. .	. .	58.4	59.5	1.8	17.6	19.9	21.2	22.7	24.1	57 13.15	27.52	13.27	18 56 32.36	+ 1.22
	B. A. C. 6606	50	3.6	6.5	. .	. .	. .	. .	. .	. .	. .	44.3	47.4	12 25.45	— 0.30	— 13.26	19 12 11.89	— 0.55

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 16, 19.4	— 14.82	+ 0.010	— 0.10	— 0.07
17, 18.1	— 14.23	+ 0.010	— 0.10	— 0.07
18, 19.2	— 14.86	+ 0.010	+ 0.07	— 0.07

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 19 Y.	δ Aquilæ	1	54.0	56.2	57.4	7.0	8.0	9.1	10.4	11.5	21.0	22.1	24.1	19 9.16	− 0.07	−13.26	19 18 55.83	+ 0.83
	Weisse (2) 616 . .	2	4.7	6.9	8.1	18.2	19.3	20.7	21.9	22.9	33.2	34.3	36.6	21 20.62	0.13	13.26	19 21 7.23	+ 0.47
	B. A. C. 6718 . .	3	20.5	23.3	24.7	37.6	39.1	40.8	42.4	43.7	56.6	58.1	0.9	30 40.70	0.25	13.26	19 30 27.19	− 0.37
	Weisse 958 . .	4	2.8	4.9	6.0	15.7	16.6	18.0	19.2	20.2	29.7	30.8	33.0	38 17.90	0.07	13.26	19 38 4.57	+ 0.73
	*+4° 41′ . . .	5	47.0	49.2	50.1	59.9	0.9	2.1	3.3	4.3	13.9	14.9	17.1	40 2.06	0.07	13.26	19 39 48.73	+ 0.73
	Weisse (2) 1729 .	6	56.0	58.7	0.0	12.4	13.8	15.4	16.8	18.3	30.5	31.8	34.6	53 15.30	0.22	13.26	19 53 1.82	− 0.29
	Weisse (2) 1753 .	7	. .	. .	. .	46.5	48.0	49.5	51.0	52.5	4.6	6.0	8.7	53 55.85	6.62	13.26	19 53 35.97	− 0.29
	Weisse 1421 . .	8	. .	. .	. .	32.7	33.9	36.0	50.8	53.0	54.2	55.7	56.8	57 46.64	− 25.91	13.26	19 57 7.47	+ 0.62
	O. Arg. S. 20297 .	9	9.7	11.9	13.0	23.7	24.9	25.2	27.5	28.6	39.2	40.3	42.7	4 25.15	+ 0.02	13.26	20 4 11.91	+ 1.03
	*+38° 21′ . . .	10	52.2	54.0	55.4	7.2	8.9	10.3	11.9	13.3	25.6	27.0	29.7	8 10.50	− 0.22	13.26	20 7 57.02	− 0.30
	Weisse (2) 306. .	11	. .	. .	. .	51.2	52.5	54.0	55.8	56.9	. .	. .	. .	8 54.08	0.22	13.25	20 8 40.61	− 0.30
	Weisse (2) 304 . .	12	. .	. .	. .	. .	. .	. .	. .	33.7	35.2	37.1	39.6	9 36.40	43.29	13.25	20 8 39.86	0.30
	*+38° 21′ ± . .	13	. .	. .	. .	3.9	5.2	6.9	8.4	9.6	. .	. .	. .	9 6.80	0.22	13.25	20 8 53.33	− 0.30
	π Capricorni. . .	14	49.1	51.3	52.5	2.6	3.7	5.0	6.2	7.3	17.4	18.7	20.9	20 4.97	0.01	13.25	20 19 51.71	+ 0.94
	ρ Capricorni . . .	15	23.1	25.4	26.5	36.6	37.7	39.0	40.3	41.3	51.4	52.5	54.7	21 38.95	− 0.01	13.25	20 21 25.69	0.93
	Moon I	16	41.3	43.4	44.5	55.0	56.2	57.5	58.7	59.9	10.4	11.6	13.8	25 57.48	+ 0.01	13.25	20 25 44.24	
	Weisse 755 . .	17	46.4	48.6	49.6	59.4	0.5	1.7	3.0	4.0	13.8	14.9	17.0	31 1.72	− 0.03	13.25	20 30 48.44	0.84
	τ^2 Capricorni. . .	18	56.7	58.9	0.2	10.2	11.2	12.5	13.7	14.7	24.7	25.8	28.0	32 12.42	− 0.01	13.25	20 31 59.16	+ 0.88
	Weisse (2) 1407 .	19	32.7	34.3	36.0	37.6	40.8	0.3	3.0	4.3	. .	. .	. .	42 46.12	+ 33.15	13.25	20 43 6.02	− 0.37
	Lalande 40277 .	20	59.5	2.0	3.3	15.2	16.5	18.0	19.4	20.6	32.4	33.7	36.2	44 17.89	− 0.20	13.25	20 44 4.44	− 0.21
	O. Arg. S. 20973 .	21	21.8	. .	25.2	35.8	36.9	38.3	39.6	40.8	51.3	. .	54.7	49 38.27	+ 0.02	13.25	20 49 25.04	+ 0.93
	*−19° 41′ . . .	22	52.1	54.7	55.9	5.2	6.4	7.6	8.9	10.0	20.1	21.3	23.3	52 7.77	0.00	13.25	20 51 54.52	0.98
	γ Equulei . . .	23	. .	0.7	1.8	11.7	12.8	14.0	15.2	16.3	26.0	27.0	. .	4 13.94	− 0.09	13.25	21 4 0.60	0.49
	δ Equulei . . .	24	48.1	49.4	50.6	51.9	54.4	. .	55.2	57.4	58.6	0.0	1.2	4 24.68	+ 0.26	13.25	21 4 11.69	+ 0.49
	ξ Cygni	25	20.3	22.7	24.0	35.0	36.2	37.6	39.0	40.2	51.3	52.6	54.9	7 37.62	− 0.17	13.24	21 7 24.21	− 0.02
20 F.	ζ Cygni	†26	19.1	21.4	22.8	33.9	35.0	36.4	37.6	39.0	50.1	51.3	53.6	7 36.38	− 0.07	13.02	. . . .	− 0.02
	Moon I	27	58.2	0.0	. .	11.8	13.0	14.1	15.4	16.6	. .	28.1	30.2	18 14.16	+ 0.09	13.02	21 18 1.23	
	β Aquarii. . . .	28	40.0	42.0	43.2	52.9	54.0	55.0	56.3	57.4	7.2	8.1	10.2	24 55.12	0.05	13.02	. . . .	+ 0.71
	ξ Aquarii. . . .	29	. .	. .	. .	59.9	0.8	1.9	3.3	. .	. .	. .	. .	31 1.47	+ 0.61	13.02	. . . .	0.74
	λ Capricorni . . .	30	. .	. .	. .	56.2	57.4	59.5	15.1	17.6	18.8	20.1	21.5	40 10.77	− 26.52	13.02	21 39 31.23	0.76
	Lacaille 8945 . .	31	. .	. .	. .	21.8	22.8	25.3	44.4	47.3	48.7	50.8	52.1	45 39.15	32.23	13.02	21 44 52.90	0.87
23	Moon II . . .	32	7.9	10.3	11.3	20.9	22.2	23.5	24.7	25.6	35.4	36.6	38.8	45 23.38	− 0.05	11.52	23 45 11.81	
	ω Piscium . . .	33	34.3	36.0	37.1	46.7	47.8	49.2	50.4	51.4	1.4	2.4	4.3	52 49.18	+ 0.01	. .	. . . .	0.73
	α Andromedæ . .	34	34.2	36.6	37.7	38.9	39.9	41.2	42.5	43.7	54.7	55.9	58.2	1 41.23	− 0.07	. .	. . . .	+ 0.47
24	δ Ursæ Minoris . .	35	48.5	8.5	32.5	53.0	27.5	. .	. .	. .	. .	. .	. .	5 34.00	+ 9 17.69	10.95	. . . .	− 24.39
	*+36° 14′ . . .	36	27.9	30.5	31.8	43.8	45.1	46.6	48.0	49.3	. .	. .	. .	17 40.38	6.07	10.96	18 17 35.49	+ 0.37
	*−33° 2′ . . .	37	43.4	45.8	47.3	58.6	59.9	1.2	2.8	4.0	15.9	17.1	19.3	24 1.39	+ 0.16	10.96	18 23 50.59	1.55
	B. A. C. 6310 . .	38	21.4	22.7	24.4	25.8	28.3	. .	38.3	41.0	42.4	44.0	45.5	26 3.38	− 0.25	10.96	18 25 52.17	1.51
	*−31° 0′ . . .	39	53.6	56.0	57.5	8.5	9.6	11.1	12.6	13.8	25.0	26.2	28.6	26 11.14	+ 0.15	10.96	18 26 0.33	1.51
	α Lyræ	40	23.8	26.4	28.0	40.2	41.4	43.0	44.6	46.0	58.3	59.5	2.3	32 43.05	− 0.11	10.96	. . . .	0.19
	Lalande 34990. .	41	48 7	49.9	51.5	52.7	54.9	. .	59.0	1.5	2.9	4.2	5.5	43 27.08	− 0.27	10.96	18 43 15.85	1.31
	Lalande 34993 .	42	17.1	19.3	20.4	31.0	31.9	33.2	34.4	35.6	45.8	47.0	49.1	43 33.16	+ 0.10	10.96	18 43 22.30	1.31
	Lacaille 7961 . .	43	47.5	50.2	51.4	3.2	4.3	5.9	7.2	8.4	20.4	21.6	24.1	54 5.84	+ 0.17	10.97	18 53 55.04	1.42
	*− 1° 26′ . . .	44	. .	. .	. .	53.2	54.3	56.4	11.5	13.9	15.0	16.5	17.6	59 7.30	− 25.98	10.97	18 58 30.35	1.00
	*−32° 7′ . . .	45	45.4	46.7	48.4	49.8	52.4	. .	3.2	6.0	7.4	8.9	10.6	8 27.88	− 0.25	10.97	19 8 16.66	1.33
	*−32° 5′ . . .	46	17.3	19.7	21.0	32.5	33.5	35.0	36.4	37.7	48.9	50.1	52.6	8 34.97	+ 0.16	10.97	19 8 24.16	1.33
	*−32° 7′ . . .	47	59.8	1.2	2.8	4.3	6.7	. .	17.5	20.4	21.9	23.3	24.8	8 42.27	− 0.25	10.97	19 8 31.05	+ 1.33
	δ Draconis . . .	48	. .	. .	. .	15.7	18.2	23.8	3.5	9.8	13.0	16.1	19.6	13 52.46	1 8.15	10.97	19 12 33.34	− 2.78
	O. Arg. S. 19466 .	49	. .	. .	. .	. .	. .	. .	21.8	24.7	26.0	27.6	29.0	16 25.82	− 38.32	10.98	19 15 36.52	+ 1.27
	*−26° 2′ . . .	50	40.9	43.2	44.6	55.2	56.3	57.6	58.9	0.0	10.8	11.9	14.1	21 57.59	+ 0.13	−10.98	19 21 46.74	+ 1.22

26. Increase the record 1^s.
Aug. 19, 21^h 30^m. Image west $0^r.50$. Clamp west.
Image west $0^r.37$. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	*n*	*c*
1869. h.	s.	s.	s.	s.
Aug. 19, 19.6	− 13.26	+ 0.010	− 0.18	− 0.06
20, 21.3	− 13.02	+ 0.010	− 0.18	+ 0.03
23, 0.0	− 11.52	+ 0.010	− 0.18	+ 0.03

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug 24 F.	*−27° 23′ . . .	1	27.6	28.7	30.6	31.8	34.2	50.7	53.2	54.4	. .	. .	. .	30 38.90	+ 28.97	−10.98	19 30 56.89	+ 1.20
	ε Sagittæ	2	19.1	21.2	22.4	32.4	33.4	34.7	35.9	37.0	47.0	48.1	50.3	31 34.68	− 0.02	10.98	19 31 23.68	0.56
	Weisse (2) 956. .	3	25.2	27.4	28.6	38.5	39.6	40.6	42.0	43.2	53.3	54.4	56.4	31 40.84	− 0.02	10.98	19 31 29.84	0.56
	*−28° 42′ . . .	4	3.8	6.4	7.8	18.5	19.6	20.9	22.3	23.5	34.6	35.6	38.8	39 21.07	+ 0.14	10.98	19 39 10.23	1.18
	*−38° 9′ . . .	5	48.6	51.0	52.6	4.7	6.2	7.6	8.2	10.6	. .	. .	. .	49 1.19	+ 6.51	10.99	19 48 56.71	1.21
	*−38° 5′ . . .	6	. .	. .	. .	17.8	18.9	20.4	21.9	23.4	35.4	36.7	38.5	49 26.62	− 6.13	10.99	19 49 9.50	1.21
	Weisse 1402 . .	7	31.2	33.3	34.5	44.0	45.2	46.5	47.5	48.7	58.2	59.5	1.7	56 46.39	+ 0.01	10.99	19 56 35.41	0.65
	Weisse 1421 . .	8	3.0	5.2	6.2	16.0	17.1	18.3	19.4	20.5	30.2	31.2	33.2	57 18.21	0.01	10.99	19 57 7.23	0.65
	Lacaille 8369 . .	9	47.0	49.8	51.0	3.6	4.7	6.2	8.1	9.2	21.8	23.0	25.6	5 6.36	0.19	10.99	20 4 55.56	1.15
	Lacaille 8403 . .	10	37.7	40.0	41.5	52.8	54.0	55.4	57.0	58.3	9.6	10.9	13.4	11 55.51	+ 0.16	10.99	20 11 44.68	1.09
	ε Delphini . . .	11	55.3	57.3	58.5	8.5	9.4	10.6	11.7	12.8	22.7	23.9	25.7	27 10.58	0.00	11.00	. . . .	0.52
	*+14° 14′ . . .	12	. .	. .	. .	2.3	3.4	4.7	5.9	7.0	17.0	18.0	19.3	28 9.70	− 5.15	11.00	20 27 53.55	0.45
	Weisse 755 . .	13	. .	. .	. .	57.0	57.9	59.0	0.2	1.3	11.1	12.2	14.4	30 4.14	− 5.01	11.00	20 29 48.13	0.86
	*−35° 38′ . . .	†14	. .	. .	. .	27.1	29.0	30.4	31.8	33.2	. .	. .	. .	38 30.30	+ 0.18	11.00	20 38 19.48	1.05
	Lalande 40235. .	15	3.1	5.5	6.8	17.0	18.0	19.2	20.4	21.6	31.6	32.7	35.0	44 19.17	+ 0.09	11.00	20 44 8.26	0.89
	O. Arg. S. 20917 .	16	. .	. .	. .	23.6	24.7	25.8	27.2	28.4	39.0	40.2	42.4	45 31.41	− 5.36	11.00	20 45 15.05	0.94
	Lacaille 8638, (1st *)	17	56.4	57.7	59.9	1.4	4.4	. .	27.3	30.5	32.3	34.1	35.7	52 45.97	− 0.26	11.01	20 52 34.70	0.99
	Lacaille 8638, (2d *)	18	30.0	32.8	34.3	47.6	48.9	50.4	52.3	53.8	7.0	8.4	11.5	52 50.64	+ 0.22	11.01	20 52 39.85	0.99
	γ Equulei . . .	19	35.6	36.8	38.1	39.5	41.4	. .	42.2	44.8	45.9	47.3	48.5	4 12.01	− 0.35	11.01	21 4 0.65	0.49
	6 Equulei . . .	20	7.4	9.5	10.4	20.3	21.4	22.6	23.7	24.8	34.4	35.8	37.8	4 22.55	0.00	11.01	21 4 11.54	+ 0.49
	ζ Cygni	21	18.1	20.4	21.8	32.7	33.9	35.3	36.6	38.0	49.1	50.2	52.6	7 35.34	0.07	11.01	. . . .	− 0.01
	Weisse 258 . .	22	50.0	52.2	. .	3.4	. .	5.6	6.7	7.7	. .	19.0	21.0	13 5.70	− 0.05	11.01	21 12 54.64	+ 0.79
	17 Aquarii . . .	23	52.8	54.8	56.0	5.8	6.9	8.0	9.2	10.3	20.1	21.3	23.2	16 8.04	+ 0.06	11.01	21 15 57.09	+ 0.75
25	Polaris	24	. .	. .	. .	. .	18.0	6.0	56.0	42.0	. .	. .	. .	12 30.50	− 25.84	11.53	. . . .	− 35.43
	Moon II . . .	25	27.4	29.6	30.7	40.5	41.6	42.7	43.9	45.0	54.9	56.0	58.0	16 42.75	+ 0.04	11.53	1 16 31.26	
	μ Piscium . . .	26	18.0	20.0	21.2	30.8	31.9	33.0	34.1	35.3	44.9	45.9	48.2	23 33.03	0.03	11.54	1 23 21.52	+ 1.05
	Weisse 557 . .	27	50.5	52.7	54.0	. .	. .	. .	. .	. .	18.4	19.6	21.6	34 6.13	0.01	11.54	1 33 54.60	1.08
	Weisse 558 . .	28	51.4	53.6	54.7	4.7	5.8	7.0	8.1	9.1	19.0	20.4	22.4	34 6.93	+ 0.01	11.54	1 33 55.40	1.08
	ν Piscium . . .	29	. .	. .	. .	2.4	3.4	5.6	20.9	23.2	24.5	25.8	27.0	35 16.60	− 26.07	11.54	. . . .	1.10
	o Piscium . . .	30	27.1	29.2	30.3	40.0	41.0	42.3	43.4	44.5	54.2	55.3	57.4	38 42.25	+ 0.02	11.54	. . . .	1.12
26	O. Arg. S. 17159 .	31	19.0	21.4	22.5	32.9	33.9	35.0	36.4	37.5	47.9	49.0	51.3	37 35.16	+ 0.03	12.43	17 37 22.76	1.65
	Lacaille 7448 . .	32	. .	. .	. .	. .	. .	. .	34.2	37.2	38.7	40.0	41.5	41 38.32	− 41.21	12.43	17 40 44.68	1.81
	*−35° 19′ . . .	33	. .	. .	. .	55.4	57.0	59.6	18.0	20.5	22.5	24.0	25.6	42 12.82	31.84	12.43	17 41 28.55	1.80
	*−35° 19′ . . .	34	. .	. .	. .	. .	. .	. .	. .	. .	49.0	50.5	52.8	42 50.77	16.23	12.43	17 42 22.11	1.80
	*−35° 19′ . . .	35	. .	. .	. .	. .	. .	. .	13.5	16.0	17.5	19.2	20.8	43 17.40	− 41.21	12.43	17 42 23.76	1.80
	γ² Sagittarii . . .	36	10.9	13.0	14.5	25.7	26.9	28.2	29.5	30.6	42.0	43.2	45.5	57 28.18	+ 0.03	12.43	. . . .	+ 1.68
	δ Ursæ Minoris . .	37	. .	. .	. .	14.5	31.0	51.8	11.0	29.0	. .	. .	. .	14 51.46	1.12	12.44	. . . .	− 23.70
	Moon II . . .	38	31.4	33.6	34.8	44.6	45.5	46.8	47.9	49.2	59.0	0.2	2.3	2 46.85	0.05	12.59	2 2 34.31	
	Weisse 231 . .	39	36.2	38.2	39.4	49.2	50.2	51.4	52.6	53.6	3.5	4.6	6.6	15 51.41	0.04	12.60	2 15 38.85	+ 1.22
	ξ² Ceti.	40	11.0	13.0	14.2	24.0	25.0	26.1	27.4	28.5	38.0	39.1	41.3	21 26.15	+ 0.05	12.60	2 21 13.60	1.26
	B. A. C. 790, (1st *)	41	. .	. .	. .	33.9	35.0	37.4	. .	57.7	58.9	0.4	2.0	28 49.33	− 31.04	12.60	2 28 5.69	1.10
	B. A. C. 790, (2d *)	42	. .	. .	. .	16.9	18.2	19.4	20.8	22.1	. .	. .	. .	28 19.48	+ 0.03	12.60	2 28 6.91	1.10
	γ Ceti.	43	. .	. .	. .	43.0	44.0	45.1	46.3	47.4	57.0	58.2	0.2	36 50.15	− 4.94	12.61	. . . .	1.38
	μ Ceti.	44	. .	. .	. .	4.0	5.2	6.3	7.5	8.5	18.3	19.3	21.5	38 11.32	− 4.99	12.61	2 37 53.72	+ 1.29
27	Polaris, S. P. . .	45	. .	. .	. .	30.0	9.0	57.0	50.0	. .	. .	. .	. .	11 36.50	+ 26.06	8.47	. . . .	− 36.46
	α Virginis . . .	46	. .	. .	. .	. .	. .	. .	57.3	59.8	0.9	2.3	3.4	19 0.74	− 34.17	8.47	. . . .	+ 2.74
	*−35° 19′ . . .	47	46.7	48.0	49.9	51.4	54.0	. .	7.4	10.2	11.6	13.2	14.7	42 30.71	− 0.29	8.52	17 42 21.90	1.82
	*−35° 19′ . . .	48	13.8	16.4	17.7	29.5	30.7	32.2	33.7	35.0	46.9	48.0	50.5	42 32.22	+ 0.14	8.52	17 42 23.84	1.82
	O. Arg. S. 17282 .	49	. .	. .	. .	56.2	57.3	58.7	0.0	1.1	11.8	12.9	15.1	44 4.14	− 5.42	8.52	17 43 50.20	1.69
	*−34° 58′ . . .	50	. .	. .	. .	3.5	4.8	7.4	25.9	28.9	30.3	31.9	33.2	45 20.74	− 31.60	− 8.52	17 44 40.62	+ 1.80

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 24, 20.0	− 10.99	− 0.020	− 0.19	+ 0.03
25, 1.6	− 11.54	− 0.021	− 0.12	+ 0.04
26, 22.3	− 12.52	− 0.020	+ 0.03	+ 0.04

14. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Aug. 27 F.	Weisse 915 . .	1	. .	. .	. .	. .	. .	. .	32.8	35.2	36.5	37.7	39.0	46 36.24	− 34.03	− 8.52	17 45 53.69	+ 1.23
	Weisse 929 . .	2	. .	. .	. .	. .	. .	. .	3.8	6.1	7.4	8.7	9.9	47 7.18	− 34.03	8.52	17 46 24.63	1.23
	μ Sagittarii . . .	3	50.2	52.4	53.5	4.1	5.0	6.3	7.6	8.8	19.0	20.2	22.3	6 6.31	+ 0.09	8.52	. . . .	+ 1.53
	O. Arg. N. 18555 .	4	. .	. .	. .	34.8	37.9	42.2	45.9	49.5	. .	. .	. .	37 42.06	− 0.24	8.53	18 37 33.29	− 3.31
	Weisse 971. . .	5	30.0	31.8	33.0	42.8	43.9	45.2	46.3	47.2	57.1	58.2	0.2	39 45.06	+ 0.07	8.53	18 39 36.60	+ 1.28
	Lalande 34990 .	6	46.3	47.5	49.0	50.3	52.6	. .	56.5	59.2	0.3	1.7	3.1	43 24.65	− 0.28	8.53	18 43 15.84	1.36
	Lalande 34993. .	7	14.7	17.0	18.1	28.4	29.6	30.8	32.1	33.2	43.5	44.7	46.7	43 30.80	+ 0.09	8.53	18 43 22.36	1.36
	*−7° 38′ . . .	8	54.0	56.1	57.4	7.0	8.0	9.1	10.4	11.5	21.3	22.4	24.4	57 9.24	+ 0.05	8.53	18 57 0.76	1.14
	*−7° 34′ . . .	9	. .	. .	. .	. .	. .	. .	27.8	30.2	31.3	32.7	33.9	57 31.18	− 33.90	8.53	18 56 48.75	1.14
	d Sagittarii . . .	10	52.9	55.0	56.5	6.6	7.6	8.9	10.1	11.2	21.5	22.5	24.7	10 9.86	+ 0.09	8.53	. . . .	1.17
	π Arietis	11	54.9	57.0	58.0	8.2	9.3	10.5	11.8	13.0	23.0	24.1	26.2	42 10.55	0.01	8.78	2 42 1.78	1.41
28	Moon II . . .	12	9.7	12.0	13.1	23.0	24.2	25.4	26.6	27.9	37.9	39.2	41.2	39 25.47	+ 0.02	8.79	3 39 16.70	
	η Tauri	13	. .	. .	. .	. .	. .	. .	25.5	28.1	29.5	31.0	32.3	40 29.28	− 36.78	8.79	. . . .	1.84
	e Tauri	14	. .	. .	. .	. .	. .	. .	46.5	48.9	50.0	51.3	52.5	41 49.84	34.23	8.79	3 41 6.82	1.75
	ζ Persei	15	47.0	49.6	50.9	2.1	3.4	4.8	6.2	7.3	19.0	20.1	22.3	46 4.79	− 0.03	8.79	3 45 55.97	1.96
	λ Tauri	16	20.2	22.5	23.5	33.4	34.4	35.6	36.8	37.9	47.9	49.0	51.0	53 35.65	+ 0.02	8.79	3 53 26.88	1.83
	γ Tauri	17	15.0	17.2	18.3	28.4	29.4	30.6	31.8	32.9	43.0	44.0	46.0	12 30.60	0.01	8.79	. . . .	1.99
30	α Ophiuchi . . .	18	46.3	48.5	49.7	59.5	0.5	1.8	3.0	4.0	13.9	15.0	17.1	29 1.75	0.01	9.01	17 28 52.75	1.32
	O. Arg. S. 17291 .	19	. .	. .	. .	32.1	33.3	34.6	36.3	37.3	. .	. .	. .	44 34.72	0.12	9.01	17 44 25.83	1.76
	Weisse 929 . .	20	18.4	20.4	21.6	31.5	32.4	33.7	34.9	35.9	45.6	46.6	48.7	46 33.61	0.02	9.01	17 46 24.62	1.26
	*−32° 2′ . . .	21	50.7	53.0	54.2	5.7	6.9	8.3	9.8	11.0	22.2	23.6	26.0	49 8.31	0.14	9.01	17 48 59.44	+ 1.80
	δ Ursæ Minoris . .	22	46.5	5.5	29.5	50.0	26.0	. .	. .	. .	. .	. .	. .	5 31.50	9 16.03	9.02	. . . .	− 22.12
	*−31° 49′ . . .	23	53.2	54.6	56.1	57.7	0.2	17.5	20.0	21.2	. .	. .	. .	17 5.06	30.24	9.02	18 17 26.28	+ 1.65
	B. A. C. 6249 . .	24	45.3	46.7	48.4	49.8	52.4	. .	24.2	25.3	26.8	28.0	29.3	18 7.62	+ 19.24	9.02	18 18 17.84	1.63
	O. Arg. S. 18209 .	25	. .	. .	. .	. .	. .	. .	27.2	29.2	31.2	32.6	34.0	19 30.84	− 36.60	9.02	18 18 45.22	1.54
	Weisse 972. . .	26	34.5	36.6	37.8	47.6	48.7	. .	50.8	51.7	2.1	3.1	5.3	39 49.82	+ 0.08	9.03	18 39 40.87	1.31
	Weisse 1058, (1st *)	27	15.4	16.5	17.9	19.0	21.4	. .	20.5	24.1	25.5	26.7	27.8	42 51.48	− 0.29	9.03	18 42 42.16	1.21
	Weisse 1058, (2d *)	28	37.5	39.5	40.6	50.3	51.3	52.4	53.7	54.9	4.4	5.5	7.5	42 52.51	+ 0.06	9.03	18 42 43.54	1.21
	O. Arg. S. 19140 .	29	6.7	8.0	9.3	10.6	12.6	. .	. .	17.6	18.9	20.1	21.4	1 40.58	+ 3.41	9.03	19 1 34.96	1.25
	*−15° 24′ . . .	30	. .	. .	. .	42.7	44.0	45.3	46.8	48.0	57.7	58.9	1.2	1 50.57	− 5.07	9.03	19 1 36.47	1.25
	*−32° 6′ . . .	31	12.7	14.0	15.6	17.0	19.7	. .	52.1	53.2	54.4	56.0	57.4	10 35.21	+ 19.58	9.03	19 10 45.76	1.40
	23 Aquilæ	32	1.3	2.7	3.7	5.0	6.1	. .	33.8	36.3	37.5	38.6	39.9	12 20.49	− 16.79	9.03	19 11 54.67	0.98
	δ Aquilæ	33	49.4	51.6	52.8	2.4	3.5	4.6	5.8	6.8	16.6	17.5	19.6	19 4.60	+ 0.03	9.03	19 18 55.60	0.93
	ε Sagittæ	34	55.6	56.8	58.2	59.6	1.8	. .	4.3	6.7	8.0	9.3	10.6	31 33.09	− 0.35	9.04	19 31 23.70	0.63
	Weisse (2) 956. .	35	23.3	25.5	26.7	36.6	37.6	38.9	40.2	41.3	51.3	52.4	54.5	31 38.94	0.00	9.04	19 31 29.90	0.63
	Dorpat 2601, (2d *)	36	8.6	11.1	12.2	. .	. .	. .	. .	. .	36.2	37.2	39.3	50 24.10	+ 0.04	9.04	19 50 15.10	0.83
	τ Aquilæ	37	40.4	42.5	43.8	53.4	54.4	55.6	57.0	58.0	7.8	8.7	10.9	57 55.68	+ 0.02	9.04	19 57 46.66	0.64
	β Tauri	38	. .	. .	. .	8.6	9.8	11.1	12.5	13.7	24.6	26.0	28.0	18 16.79	− 5.69	9.15	5 18 1.95	2.57
	Moon II . . .	39	22.7	25.2	26.4	36.7	37.8	39.0	40.3	41.7	52.1	53.3	55.3	26 39.14	− 0.01	9.16	5 26 29.97	
	α Orionis. . . .	40	59.6	1.8	3.0	12.5	13.6	14.9	16.0	17.1	26.8	27.8	29.9	48 14.82	+ 0.02	9.16	5 48 5.68	2.39
31	O. Arg. S. 18468 .	41	. .	. .	12.0	13.4	14.8	16.0	45.7	48.7	50.0	51.2	52.4	30 33.80	− 20.29	9.39	18 30 4.12	+ 1.48
	O. Arg. N. 18555 .	42	. .	. .	. .	. .	. .	. .	20.9	29.1	33.0	36.9	41.5	39 32.28	1 50.12	9.39	18 37 32.77	− 3.00
	Lalande 35041 . .	43	. .	. .	. .	. .	. .	. .	3.4	11.1	15.7	20.4	24.5	41 15.02	− 1 50.12	9.39	18 39 15.51	− 3.00
	d Sagittarii . . .	44	53.9	56.0	57.2	7.5	8.4	9.7	10.9	12.0	22.4	23.5	25.5	10 9.73	+ 0.10	9.39	19 10 0.44	+ 1.21
	*−28° 58′ . . .	45	40.0	42.5	43.7	53.8	56.0	57.4	58.8	0.1	11.0	12.2	14.6	15 57.28	+ 0.13	9.39	19 15 48.02	1.35
	Lalande 36557 . .	46	. .	. .	. .	50.0	51.2	53.3	9.2	11.7	13.0	14.3	15.6	18 4.79	− 26.88	9.40	19 17 28.51	1.19
	κ Aquilæ	47	47.0	49.1	50.3	59.9	1.0	2.2	3.4	4.4	14.1	15.2	17.0	30 2.15	+ 0.06	9.40	19 29 52.81	1.04
	μ Geminorum . .	48	56.3	58.5	59.7	10.0	11.2	12.5	13.8	14.9	25.4	26.4	28.8	15 12.50	− 0.02	9.48	6 15 3.00	+ 2.79
	Moon II . . .	49	39.7	42.0	43.2	53.6	54.8	56.2	57.5	58.5	9.3	10.4	12.6	24 56.16	− 0.01	− 9.48	6 24 46.67	

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 27, 16.9	− 8.51	− 0.010	− 0.12	+ 0.04
28, 3.9	− 8.79	− 0.010	− 0.12	+ 0.04
30, 23.2	− 9.08	− 0.012	− 0.15	+ 0.04

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Aug. 31 F.	γ Geminorum	1	3.1	5.3	6.5	16.5	17.4	18.7	20.1	21.2	31.3	32.4	34.5	30 18.82	0.00	− 9.48	6 30 9.34	+ 2.76
Sept. 1 Y.	α^1 Herculis, (1st *)	2	35.8	38.2	39.3	49.1	50.2	51.5	52.7	53.9	3.7	4.8	7.0	8 51.47	+ 0.01	9.71	. . . .	1.44
F.	μ Herculis	3	14.0	16.4	17.7	28.6	29.9	31.2	32.5	33.7	44.6	45.7	48.2	41 31.14	− 0.01	9.90	17 41 21.23	1.00
	O. Arg. S. 17291	4	55.7	57.0	58.5	59.9	2.4	33.1	34.3	35.4	36.8	38.0	. .	44 17.11	+ 18.59	9.90	17 44 25.80	1.79
Y.	*−25° 43′	5	. .	. .	. .	31.2	32.0	34.6	51.8	54.4	55.7	57.0	58.3	45 46.87	− 28.78	9.90	17 45 8.19	+ 1.77
	δ Ursæ Minoris	6	46.0	5.0	29.0	48.0	25.0	. .	. .	. .	. .	. .	. .	5 30.60	+ 9 16.75	9.73	. . . .	− 21.27
F.	Lacaille 7961	7	46.6	49.0	50.4	2.0	3.3	4.8	6.3	7.4	19.1	20.5	23.0	54 4.76	+ 0.12	9.93	18 53 54.95	+ 1.54
	O. Arg. S. 19140	8	8.1	8.9	10.2	. .	13.7	. .	15.9	. .	19.5	20.9	22.2	1 44.92	− 0.01	9.93	19 1 34.98	1.27
	*−15° 21′	9	. .	. .	. .	44.0	45.0	46.3	47.8	49.3	. .	. .	. .	1 46.48	+ 0.07	9.93	19 1 36.62	+ 1.27
	κ Cygni	10	51.4	54.9	56.6	13.0	14.4	16.5	18.4	20.0	36.3	38.0	41.4	14 16.45	− 0.07	9.93	19 14 6.45	− 0.68
	Lalande 36557	11	22.6	24.8	25.9	36.0	37.0	38.2	39.3	40.4	50.4	51.6	53.7	17 38.17	+ 0.07	9.94	19 17 28.30	+ 1.09
	κ Aquilæ	12	47.4	49.4	50.8	0.4	1.3	2.5	3.8	4.9	14.5	15.6	17.7	30 2.57	0.05	9.94	19 29 52.68	1.05
	*−28° 42′	13	2.9	5.2	6.3	17.1	18.4	19.8	21.1	22.3	33.3	34.6	37.0	39 19.82	0.10	9.94	19 39 9.98	1.26
	Dorpat 2601, (2d *)	14	49.3	50.3	51.6	52.7	55.0	. .	22.6	23.6	24.7	25.9	27.0	50 8.27	16.52	9.95	19 50 14.84	0.85
	O. Arg. S. 20124	15	3.3	5.5	6.8	17.6	18.7	20.1	21.5	22.6	33.4	34.6	36.9	51 20.09	0.09	9.95	19 51 10.23	1.17
	Weisse 1421	†16	2.1	4.2	5.3	15.1	16.3	17.3	18.4	19.4	29.4	30.3	32.6	57 17.31	+ 0.03	9.95	19 57 7.39	+ 0.72
	*+38° 16′	17	44.6	47.1	48.6	10.9	12.2	13.5	15.2	16.4	28.7	30.0	32.6	7 13.62	− 0.03	9.95	20 7 3.64	− 0.14
	*+38° 17′	18	. .	. .	37.6	39.2	42.0	. .	58.3	1.5	3.0	4.5	6.3	7 31.55	11.74	9.95	20 7 9.86	− 0.14
	Lacaille 8394	19	. .	. .	. .	. .	. .	. .	36.4	39.1	40.4	41.9	43.3	9 40.22	− 39.52	9.95	20 8 50.75	+ 1.16
	π Capricorni	20	45.6	47.9	49.0	59.3	0.3	1.6	2.8	3.9	14.1	15.1	17.3	20 1.54	+ 0.08	9.96	20 19 51.66	1.01
	*−39° 26′	21	. .	. .	. .	18.6	20.0	21.6	23.0	24.3	37.0	38.8	40.8	44 28.01	− 6.29	9.96	20 44 11.76	1.05
	B. A. C. 7242	22	. .	. .	. .	5.6	6.6	7.9	9.0	10.1	19.9	21.0	23.1	46 12.90	5.03	9.97	20 45 57.90	+ 0.85
	B. A. C. 7373	23	4.7	7.2	8.4	20.5	21.7	23.0	24.6	25.8	37.8	39.1	41.7	8 23.14	− 0.02	9.97	21 8 13.15	− 0.20
	Weisse 258	24	49.3	51.4	52.7	2.4	3.7	4.8	5.9	7.0	17.0	18.0	20.0	13 4.75	+ 0.07	9.97	21 12 54.85	+ 0.80
	17 Aquarii	25	51.9	53.9	55.2	5.0	6.0	7.1	8.4	9.4	19.2	20.2	22.4	16 7.15	0.06	9.98	21 15 57.23	0.76
	*−16° 28′	26	41.6	43.5	44.8	. .	. .	. .	. .	. .	9.5	10.5	12.9	23 57.13	0.07	9.98	21 23 47.22	0.80
	*−26° 21′	27	13.2	15.6	16.9	27.7	28.8	30.2	31.5	32.6	. .	. .	. .	27 24.56	+ 5.65	9.98	21 27 20.23	+ 0.84
	O. Arg. N. 22729	28	49.0	54.9	58.5	27.7	30.8	34.5	37.8	40.8	10.4	13.6	19.1	37 34.28	− 0.16	9.98	21 37 24.14	− 3.98
	c^2 Capricorni	29	. .	. .	. .	41.1	42.2	44.3	59.9	2.3	3.4	4.7	6.0	39 55.49	26.34	9.98	21 39 19.17	+ 0.71
	B. A. C. 7596	30	. .	. .	. .	34.4	35.5	37.5	52.9	55.3	56.5	57.7	59.1	42 48.61	26.10	9.98	21 42 12.53	0.67
	*−19° 47′	31	. .	. .	. .	1.8	2.9	4.0	5.3	6.4	16.4	17.6	20.1	45 9.31	5.20	9.98	21 44 54.13	+ 0.78
	Weisse (2) 1140	32	. .	. .	. .	. .	. .	. .	12.0	15.0	16.6	18.2	19.9	48 16.34	42.87	9.99	21 47 23.48	− 0.31
	Weisse (2) 1398	33	. .	. .	. .	49.0	50.2	51.5	53.2	54.5	6.6	7.7	10.4	56 57.89	− 6.19	9.99	21 56 41.71	− 0.22
	Weisse 167	34	5.2	6.5	7.8	9.0	11.2	. .	. .	14.9	16.3	17.7	19.0	9 38.62	+ 3.34	9.99	22 9 31.97	+ 0.69
	Weisse 175	35	42.8	45.0	46.2	55.8	56.9	58.1	59.3	0.5	. .	. .	. .	9 53.07	5.17	9.99	22 9 48.25	0.69
	B. A. C. 7809	36	47.6	49.7	51.0	0.6	1.6	2.7	4.0	5.0	14.6	15.7	17.8	18 2.75	0.04	10.00	22 17 52.79	+ 0.59
	B. A. C. 7851	37	37.6	5.1	18.6	19.9	30.3	47.5	1.3	15.5	15.9	29.5	55.9	23 47.01	0.74	10.00	22 23 36.27	− 21.96
	ζ Pegasi	38	53.1	55.2	56.3	6.0	7.1	8.3	9.5	10.6	20.4	21.4	23.5	35 8.31	+ 0.02	10.00	22 34 58.33	+ 0.45
2	γ^2 Sagittarii	39	33.4	34.6	36.1	37.3	38.6	. .	11.0	14.0	15.2	16.7	18.2	57 55.51	− 19.25	10.69	17 57 25.57	+ 1.78
Y.	δ Ursæ Minoris	40	. .	. .	. .	10.0	27.0	46.0	6.0	24.0	. .	. .	. .	14 46.60	+ 1.25	10.69	. . . .	− 20.85
	*+61° 9′	41	. .	. .	. .	33.9	35.9	39.6	11.6	16.6	19.2	21.9	24.5	26 2.90	− 53.54	10.69	18 24 58.67	− 0.87
	β^1 Lyræ	42	8.7	11.3	12.6	24.1	25.2	26.7	28.2	29.5	40.9	42.3	44.7	45 26.75	+ 0.29	10.70	18 45 16.34	+ 0.46
	*−8° 22′	43	37.2	39.2	40.4	50.0	51.0	52.3	53.5	54.5	4.4	5.4	7.5	51 52.31	+ 0.27	10.70	18 51 41.88	1.24
	Weisse 1293	44	. .	. .	. .	20.5	21.6	23.6	38.9	41.5	42.6	44.2	45.4	52 34.79	− 26.02	10.70	18 51 58.07	1.24
	*+36° 42′	45	. .	. .	. .	17.8	19.0	20.5	22.0	23.3	. .	. .	. .	56 20.52	+ 0.30	10.70	19 56 10.12	0.29
	*+36° 42′	46	. .	. .	. .	36.3	37.6	39.0	40.6	42.0	. .	. .	. .	56 39.10	+ 0.30	10.70	19 56 28.70	0.29
	*+36° 35′	47	. .	. .	. .	41.9	43.3	44.6	46.1	47.5	59.5	0.9	3.6	59 50.92	− 5.89	10.71	19 59 34.32	0.27
	b^2 Cygni	48	27.8	30.2	31.7	43.7	44.8	46.5	48.0	49.3	1.1	2.4	5.0	4 46.41	+ 0.30	10.71	20 4 36.00	0.25
	*−39° 27′	49	20.5	23.3	24.6	37.3	38.5	40.0	41.6	42.9	55.5	56.7	59.5	8 40.04	0.30	10.71	20 8 29.63	1.71
	π Capricorni	50	46.3	48.6	49.8	59.8	0.9	2.1	3.4	4.4	14.7	15.8	18.0	20 2.16	+ 0.26	−10.73	20 19 51.69	+ 1.02

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Aug. 31, 0.9	− 9.44	− 0.008	− 0.15	+ 0.04
Sept. 1, 20.0	− 9.95	− 0.020	− 0.10	+ 0.04

September 1. Image west $0^r.20$. Clamp east.

16. Right ascension diminished by 1^s., to correspond to three other observations, this star standing alone on sheet.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 2 Y.	*+27° 25′	1	. .	. .	. .	36.3	37.6	39.0	40.3	41.5	. .	. .	. .	30 38.94	+ 0.29	−10.74	20 30 28.49	+ 0.18
	Weisse(2)1140,(1st*)	2	36.1	39.0	40.3	. .	. .	. .	. .	. .	10.4	11.6	14.4	33 55.30	0.30	10.74	20 33 44.86	− 0.20
	Weisse(2)1140,(2d*)	3	. .	. .	. .	53.2	54.5	56.0	57.5	58.9	. .	. .	. .	33 56.02	+ 0.30	10.74	20 33 45.58	− 0.20
	*−35° 39′	4	. .	. .	. .	4.6	5.9	7.5	8.9	10.1	22.2	23.4	25.9	37 13.56	− 5.87	10.74	20 36 56.95	+ 1.07
	Weisse 1125	5	50.4	52.6	53.7	3.5	4.5	5.7	6.9	7.9	17.7	18.8	20.9	45 5.69	+ 0.27	10.74	20 44 55.22	0.83
	γ Equulei	6	56.0	58.1	59.2	. .	. .	. .	. .	. .	23.3	24.3	26.4	4 11.22	0.28	10.75	21 4 0.75	0.52
	6 Equulei	7	6.9	9.2	10.3	. .	. .	. .	. .	. .	34.3	35.3	37.5	4 22.25	0.28	10.75	21 4 11.78	+ 0.52
	B. A. C. 7377	8	12.3	16.6	18.7	37.6	39.5	42.0	44.2	46.2	5.4	7.3	11.3	8 41.92	+ 0.35	10.75	21 8 31.52	− 1.79
	*+69° 54′	9	40.4	43.0	45.8	49.7	51.8	. .	12.9	21.2	24.8	28.7	32.2	24 35.05	− 48.55	10.75	21 23 35.75	− 3.73
	ε Pegasi	10	42.9	45.1	46.2	55.9	56.9	58.1	59.3	0.4	10.1	11.2	13.4	37 58.14	+ 0.28	10.76	21 37 47.66	+ 0.48
3 F.	Polaris, S. P.	11	. .	. .	. .	45.0	27.0	13.0	1.0	42.0	. .	. .	. .	12 13.60	− 4.14	11.24	. . . .	− 40.67
	α Bootis	12	36.6	38.8	40.0	50.2	51.3	52.6	53.9	54.9	5.1	6.3	8.5	9 52.56	+ 0.06	11.26	. . . .	+ 2.57
	O. Arg. S. 17861	13	10.5	12.6	14.0	25.1	26.2	27.5	28.8	30.0	41.1	42.2	44.6	6 27.51	0.00	11.35	18 6 16.16	1.74
	*−8° 22′	14	49.0	51.0	52.2	2.1	3.2	4.2	5.4	6.5	16.3	17.4	19.3	52 4.24	0.02	11.37	18 51 52.89	1.25
	Lamont 6587	15	26.5	28.6	29.7	39.4	40.4	41.6	42.8	43.8	53.5	54.5	56.7	59 41.59	0.03	11.37	18 59 30.25	1.12
	Weisse 1542	16	38.5	40.5	41.7	51.3	52.4	53.5	54.7	55.7	5.4	6.4	8.6	0 53.52	+ 0.03	11.37	19 0 42.18	1.12
	α Aquilæ	17	. .	. .	. .	34.7	35.8	36.8	38.1	39.2	49.0	50.0	52.0	44 41.95	− 4.99	11.38	19 44 25.58	0.79
	β Aquilæ	18	51.2	53.2	54.3	4.0	5.0	6.3	7.5	8.5	18.1	19.2	21.2	49 6.23	+ 0.04	11.39	19 48 54.88	0.81
	*−39° 12′	19	. .	. .	. .	46.3	47.5	49.6	51.3	53.1	5.0	6.7	9.3	59 56.10	− 6.44	11.39	19 59 38.27	1.27
	3 Capricorni	20	5.7	7.9	9.0	18.8	19.8	21.0	22.3	23.4	33.2	34.3	36.4	9 21.07	+ 0.02	11.39	20 9 9.70	0.99
	π Capricorni	21	47.0	49.3	50.5	0.8	1.8	3.0	4.3	5.3	15.4	16.6	18.8	20 2.98	+ 0.01	11.40	20 19 51.59	1.02
	*+27° 26′	22	. .	. .	. .	25.9	27.0	29.4	46.5	49.2	50.7	52.1	53.4	30 41.77	− 29.25	11.40	20 30 1.12	0.19
	*+27° 26′	23	37.1	38.3	39.7	41.0	42.3	. .	13.5	16.3	17.7	19.0	20.5	30 58.54	− 18.89	11.40	20 30 28.25	0.19
	*− 8° 43′	24	45.0	47.0	48.1	57.9	59.0	0.0	1.2	2.2	12.0	13.2	15.4	28 0.09	+ 0.02	11.42	21 27 48.69	0.68
	O. Arg. S. 21519	25	47.9	49.2	50.6	52.0	54.4	. .	24.5	25.6	26.9	28.4	29.5	30 8.90	+ 18.07	11.42	21 30 15.55	0.84
	Lacaille 8867	26	. .	. .	. .	24.5	25.6	27.0	28.4	29.8	41.4	42.8	45.4	31 33.11	− 6.03	11.42	21 31 15.66	0.87
	B. A. C. 7675	27	6.5	8.9	10.1	21.0	22.0	23.4	24.7	26.0	36.7	38.0	40.3	58 23.42	0.00	11.43	21 58 11.99	0.78
	*−27° 31′	28	. .	. .	. .	14.0	15.5	17.7	35.0	37.8	39.2	40.6	42.0	59 30.22	29.32	11.43	21 58 49.47	+ 0.78
	Lalande 43751	29	. .	. .	. .	35.8	37.2	39.8	59.2	2.2	3.8	5.4	7.0	18 53.80	32.85	11.44	22 18 9.51	− 0.26
	*−28° 6′	30	. .	. .	. .	38.7	39.8	41.3	42.6	43.8	54.6	55.9	58.3	26 46.88	5.63	11.44	22 26 29.81	+ 0.72
	*−28° 7′	31	. .	. .	. .	22.5	23.6	25.0	26.3	27.6	38.6	40.2	42.0	27 30.72	5.63	11.44	22 27 13.65	0.72
	*−28° 7′	32	. .	. .	. .	59.0	0.2	1.4	3.0	4.2	15.1	16.2	18.6	28 7.21	5.63	11.44	22 27 50.14	0.72
	*− 6° 20′	33	. .	. .	. .	27.2	28.4	29.6	30.7	31.8	41.3	42.5	44.5	43 34.50	4.98	11.45	22 43 18.07	0.62
	Weisse 897	34	. .	. .	. .	52.1	53.2	55.2	10.9	13.1	14.4	15.6	16.9	44 6.42	26.15	11 45	22 43 28.82	0.62
	α Piscis Australis	35	21.0	23.2	24.6	35.8	37.0	38.3	39.7	41.0	52.2	53.3	55.6	50 38.34	0.01	11.45	22 50 26.88	0.69
	*−40° 2′	36	45.6	48.4	49.9	2.2	3.7	5.3	6.9	8.3	21.1	22.3	25.0	9 5.34	0.02	11.46	23 8 53.86	0.61
	Lacaille 9432	37	. .	. .	. .	6.6	7.8	9.5	11.1	12.4	25.1	26.6	29.5	11 16.07	6.66	11.46	23 10 57.95	0.58
	Lacaille 9445	38	3.9	6.7	8.2	21.7	23.1	24.8	26.4	28.1	41.3	42.8	45.5	13 24.77	− 0.03	11.46	23 13 13.28	0.55
	Weisse 359	39	. .	. .	. .	53.6	54.8	55.9	57.0	58.1	. .	. .	. .	18 55.88	+ 0.04	11.46	23 18 44.46	0.53
	θ Piscium	40	. .	. .	. .	. .	. .	. .	3.8	6.3	7.5	8.7	10.0	22 7.26	− 33.78	11.46	23 21 22.02	0.53
4 Y.	γ^2 Sagittarii	41	19.2	21.7	23.0	34.2	35.4	36.8	38.0	39.3	50.5	51.7	54.0	57 36.71	+ 0.05	11.08	17 57 25.68	1.82
	O. Arg. S. 17861	42	10.1	12.5	13.9	24.8	25.9	27.4	28.6	29.7	40.8	42.2	44.5	6 27.31	0.05	11.09	18 6 16.27	1.76
	O. Arg. S. 17927	43	56.8	59.3	0.5	11.5	12.6	14.0	15.3	16.6	27.6	28.8	31.2	8 14.02	0.05	11.09	18 8 2.98	+ 1.76
	δ Ursæ Minoris	44	. .	. .	. .	10.0	26.0	46.5	6.0	24.0	. .	. .	. .	14 46.50	1.02	11.09	. . . .	− 20.04
	24 Ursæ Minoris	45	. .	. .	. .	45.5	5.5	28.0	50.5	10.5	. .	. .	. .	19 28.00	1.14	11.09	18 19 18.05	− 23.36
	O. Arg. S. 18489	46	37.1	39.3	40.4	50.6	51.6	53.0	54.2	55.3	5.5	6.7	8.8	30 52.95	0.05	11.10	18 30 41.90	+ 1.50
	*−0° 53′	47	24.1	26.3	27.3	36.9	37.9	39.1	40.3	41.4	51.0	52.0	54.2	0 39.14	0.05	11.11	19 0 28.08	+ 1.13
	54 Draconis	48	20.0	23.8	25.9	43.7	45.4	47.9	50.1	52.0	9.8	11.9	15.8	11 47.85	0.11	11.11	19 11 36.85	− 0.93
	Weisse 345	49	12.0	14.1	15.2	24.9	26.0	27.2	28.4	29.5	39.2	40.3	42.4	15 27.20	0.05	11.12	19 15 16.13	+ 1.17
	*−8° 27′	50	15.1	16.3	17.7	19.0	21.0	36.0	38.1	39.3	. .	. .	. .	16 25.31	+ 25.91	−11.12	19 16 40.10	+ 1.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	m	n	c
1869. h.	s.	s.	s.	s.	s.
Sept. 2, 19.7	− 10.72	− 0.020	+ 0.24	+ 0.03	+ 0.03
3, 20.0	− 11.39	− 0.022	. .	+ 0.07	+ 0.03

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 4	*−8° 27′ . . .	1	43.2	45.3	46.5	. .	. .	. .	. .	. .	10.3	11.4	13.5	16 58.37	+ 0.05	−11.12	19 16 47.30	+ 1.16
Y.	*−34° 39′ . . .	2	. .	. .	. .	. .	. .	. .	3.4	6.4	8.0	9.5	11.0	18 7.66	− 40.86	11.12	19 17 15.68	1.46
	*−41° 49′ . . .	3	27.4	30.1	31.7	44.7	45.9	47.6	49.0	50.6	3.3	4.6	7.5	28 47.49	+ 0.06	11.12	19 28 36.43	1.47
	κ Aquilæ	4	. .	. .	. .	1.5	2.6	3.8	4.9	6.0	15.8	16.8	18.9	30 8.79	− 4.96	11.12	19 29 52.71	1.09
	*−28° 50′ . . .	5	35.9	38.2	39.7	50.6	51.6	53.0	54.4	55.7	6.6	7.7	10.1	39 53.05	+ 0.05	11.12	19 39 41.98	1.29
	*−22° 19′ . . .	6	5.2	7.5	8.7	19.2	20.2	21.4	22.7	23.7	34.4	35.5	37.6	48 21.46	0.05	11.13	19 48 10.38	1.19
	O. Arg. S. 20123 .	7	3.2	5.7	7.0	17.9	19.0	20.3	21.6	22.8	33.6	35.0	37.3	51 20.31	0.05	11.13	19 51 9.23	1.23
	Lacaille 8340 . .	8	44.3	46.9	48.4	0.0	1.4	2.8	4.2	5.5	17.6	18.9	21.4	59 2.85	0.06	11.13	19 58 51.78	1.27
	*−18° 18′ . . .	9	11.5	13.7	14.9	25.2	26.2	27.4	28.7	29.8	39.9	41.0	42.9	0 27.38	0.05	11.13	20 0 16.30	1.10
	*−14° 4′ . . .	10	51.4	53.4	54.6	4.5	5.6	6.7	7.9	9.0	19.0	20.1	22.2	5 6.76	0.05	11.14	20 4 55.67	1.04
	*−14° 3′ . . .	11	. .	. .	. .	28.3	29.3	30.6	31.8	32.8	. .	. .	. .	5 30.56	0.05	11.14	20 5 19.47	1.03
	Weisse 101 . .	12	58.6	0.7	2.0	11.7	12.8	14.0	15.2	16.3	26.2	27.3	29.5	6 14.03	0.05	11.14	20 6 2.94	1.03
	*−13° 58′ . . .	13	8.5	10.5	11.8	. .	. .	. .	. .	. .	36.0	37.2	39.2	9 23.87	0.05	11.14	20 9 12.78	1.02
	π Capricorni . .	14	46.7	48.9	50.2	0.3	1.4	2.7	4.0	5.0	15.1	16.4	18.6	20 2.66	0.05	11.14	20 19 51.57	1.03
	Lacaille 8512 . .	15	1.4	4.2	5.5	18.7	20.2	21.8	23.1	24.9	37.9	39.5	42.3	32 21.77	+ 0.06	11.14	20 32 10.69	+ 1.14
	*+38° 4′ . . .	16	. .	. .	. .	45.0	46.3	48.9	8.4	11.5	13.1	14.7	16.3	34 3.02	− 32.96	11.14	20 33 18.92	− 0.17
	*−27° 26′ . . .	†17	40.2	42.5	43.7	54.6	55.8	57.0	58.2	59.4	10.5	11.6	13.6	37 57.01	+ 0.05	11.15	20 37 45.91	+ 1.04
	O. Arg. S. 20906 .	18	9.4	11.9	13.2	24.5	25.6	26.9	28.3	29.6	40.8	42.0	44.6	44 26.98	0.05	11.15	20 44 15.88	1.03
	α Equulei . . .	19	14.9	17.1	18.2	27.8	28.8	30.0	31.2	32.4	41.9	43.0	45.0	9 30.03	0.05	11.16	21 9 18.92	0.60
	Lacaille 8764 . .	20	58.8	1.7	3.2	16.3	17.5	19.1	20.7	22.3	35.1	36.6	39.3	11 19.15	0.06	11.16	21 11 8.05	0.96
	ι Pegasi	21	59.4	1.7	2.9	12.9	14.0	15.3	16.6	17.7	27.9	28.9	31.2	16 15.32	0.06	11.16	21 16 4.22	0.30
	*−26° 19′ . . .	22	14.5	16.9	18.0	29.0	30.0	31.2	32.6	33.7	44.7	45.8	48.1	27 31.32	0.05	11.17	21 27 20.20	0.86
	O. Arg. S. 21519 .	23	10.3	12.5	13.7	24.3	25.4	26.6	27.9	29.0	39.6	40.9	43.1	30 26.66	0.05	11.17	21 30 15.54	0.84
	*−36° 26′ . . .	24	53.0	55.6	56.9	8.9	10.0	11.7	13.1	14.4	26.5	27.8	30.[illegible]	32 11.65	0.06	11.17	21 32 0.54	0.87
	B. A. C. 7538 . .	25	33.3	36.0	37.6	50.9	52.2	54.0	55.6	57.1	10.4	12.0	14.8	34 53.99	0.06	11.17	21 34 42.88	0.85
	Weisse 965 . .	26	55.3	57.3	58.5	8.3	9.3	10.5	11.7	12.8	22.8	23.7	26.0	41 10.56	0.05	11.17	21 40 59.44	+ 0.73
	*+38° 41′ . . .	27	26.9	29.8	31.2	43.4	44.8	46.3	47.8	49.2	1.7	2.9	5.6	46 46.33	0.07	11.17	21 46 35.23	− 0.31
	B.A.C. 7735, (1st *)	28	17.4	33.2	42.0	. .	. .	. .	. .	. .	36.5	44.0	58.5	3 8.60	0.45	11.18	22 2 57.87	12.32
	B.A.C. 7735, (2d *)	29	. .	. .	. .	59.2	7.2	15.3	24.0	32.1	. .	. .	. .	3 15.56	0.45	11.18	22 3 4.83	− 12.32
	θ Aquarii. . . .	30	53.6	55.9	57.0	6.6	7.6	8.8	10.0	11.0	20.7	21.8	24.0	10 8.82	+ 0.05	11.19	22 9 57.68	+ 0.66
6	o^2 Cygni	31	. .	. .	. .	37.7	39.1	41.0	42.7	44.2	57.8	59.6	2.5	9 48.07	− 7.24	7.91	20 9 32.92	− 0.38
F.	ε Delphini . . .	32	52.1	54.2	55.4	5.0	6.2	7.3	8.5	9.6	19.5	20.5	22.6	27 7.35	+ 0.03	7.91	. . . .	+ 0.62
7	Madras 8666 . .	33	8.4	10.7	11.9	22.0	23.0	24.3	25.7	26.8	36.9	38.0	40.2	45 24.35	0.09	7.55	18 45 16.89	1.50
Y.	ζ Aquilæ	34	17.1	19.4	20.5	30.4	31.4	32.7	33.9	34.9	44.8	46.0	48.0	59 32.65	+ 0.03	7.55	. . . .	+ 0.94
	λ Ursæ Minoris . .	35	. .	. .	. .	. .	52.0	57.0	59.0	. .	. .	. .	. .	55 56.00	− 1.96	7.57	. . . .	− 89.16
	Lalande 38708. .	36	58.4	1.0	2.4	14.8	16.0	17.6	19.2	20.4	32.9	34.3	37.0	5 17.64	− 0.02	7.58	20 5 10.04	− 0.04
	α^2 Capricorni. . .	37	41.5	43.7	44.7	54.6	55.6	56.8	58.0	59.2	9.0	10.0	12.2	10 56.85	+ 0.08	7.58	. . . .	+ 1.03
	48 Cygni	38	40.4	41.9	43.5	45.0	47.4	. .	57.4	0.4	1.7	3.3	4.8	32 22.58	− 0.41	7.59	20 32 14.58	0.13
	B. A. C. 7132 . .	39	5.8	8.3	9.6	20.7	21.9	23.3	24.7	25.9	37.1	38.4	40.8	32 23.32	0.00	7.59	20 32 15.73	0.13
	O. Arg. S. 20906 .	40	5.7	8.3	9.5	20.8	22.2	23.3	24.7	25.9	37.4	38.6	41.0	44 23.40	+ 0.12	7.60	20 44 15.92	1.07
	*−30° 2′ . . .	41	44.1	46.5	47.7	58.8	0.0	1.4	2.7	4.0	15.1	16.5	18.7	1 1.41	+ 0.12	7.61	21 0 53.92	0.99
	ζ Cygni	42	14.3	16.8	18.1	29.2	30.3	31.8	33.0	34.3	45.4	46.7	49.0	7 31.72	0.00	7.61	21 7 24.11	+ 0.08
	*+36° 7′ . . .	43	. .	. .	. .	2.5	3.7	5.2	6.5	8.0	. .	. .	. .	20 5.18	− 0.01	7.62	21 19 57.55	− 0.15
	*+36° 7′ . . .	44	17.6	20.0	21.5	33.3	34.5	36.1	37.6	39.0	50.7	52.0	54.5	20 36.07	0.01	7.62	21 20 28.44	0.16
9	Weisse (2) 189. .	45	43.0	45.7	47.0	59.4	0.5	2.3	3.8	5.0	17.2	18.7	21.6	6 2.20	0.29	27.87	20 5 34.04	0.01
	o^2 Cygni	46	38.9	41.9	43.7	57.4	59.0	0.8	2.5	4.1	18.2	19.5	22.6	10 0.78	− 0.36	27.87	20 9 32.55	0.38
	O. Arg. N. 20246 .	47	9.2	10.9	12.8	14.7	18.2	. .	45.2	48.0	49.8	52.0	53.5	10 1.43	+ 0.15	27.87	20 9 33.71	− 0.38
	π Capricorni. . .	48	. .	. .	. .	17.1	18.3	19.5	20.8	22.0	32.0	33.0	35.2	20 24.74	− 5.26	27.87	20 19 51.61	+ 1.08
	λ Ursæ Minoris . .	49	. .	. .	. .	. .	. .	. .	. .	. .	. .	5.0	8.0	27 36.50	−31 24.75	27.88	. . . .	− 87.31
	48 Cygni	50	0.0	1.6	3.0	4.5	7.4	. .	17.3	19.9	21.4	22.9	24.3	32 42.23	+ 0.18	−27.88	20 32 14.53	+ 0.16

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 4, 20.3	− 11.14	− 0.024	+ 0.01	+ 0.05
6, 20.5	− 7.91	− 0.024	− 0.10	+ 0.05
7, 20.1	− 7.58	− 0.029	− 0.10	+ 0.05

17. Faint.
September 7, 22h. Image west 0r.19. Clamp east.
Image west 0r.36. Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 9	B. A. C. 7132	1	26.2	28.8	30.0	41.2	42.4	43.9	45.3	46.5	57.6	59.0	1.2	32 43.83	− 0.23	−27.88	20 32 15.72	+ 0.16
Y.	*−27° 25′	†2	. .	. .	. .	11.7	12.4	13.8	15.3	16.8	. .	. .	. .	38 14.00	+ 0.03	27.88	20 37 46.15	1.09
	O. Arg. S. 20906	3	26.1	28.6	29.7	41.0	42.1	43.5	45.0	46.2	57.4	58.7	1.2	44 43.59	0.05	27.88	20 44 15.76	1.09
	*−30° 1′	4	4.3	6.9	8.0	19.1	20.3	21.6	23.0	24.2	35.3	36.7	39.1	1 21.68	+ 0.04	27.89	21 0 53.83	1.01
	ζ Cygni	5	34.9	37.3	38.4	49.6	50.8	52.2	53.7	54.8	5.9	7.1	9.5	7 52.20	− 0.22	27.89	21 7 24.09	0.10
	Weisse 628	6	53.0	55.2	56.3	6.0	7.1	8.3	9.5	10.6	20.4	21.4	23.5	28 8.30	0.05	27.91	21 27 40.34	0.78
	Lalande 42108	7	21.0	23.2	24.3	34.2	35.3	36.6	37.8	38.7	48.5	49.6	51.8	31 36.45	− 0.03	27.91	21 31 8.51	0.77
	μ Cygni, (1st *)	8	6.3	7.8	9.3	10.7	13.4	. .	. .	23.8	25.2	27.0	28.3	38 43.53	+ 3.97	27.91	21 38 19.59	0.10
	μ Cygni, (2d *)	9	31.0	33.5	34.7	45.5	46.6	48.0	49.4	50.5	1.2	2.6	5.0	38 48.00	− 0.22	27.91	21 38 19.87	0.10
	B. A. C. 7570	10	. .	. .	. .	14.6	15.8	18.2	35.0	37.3	38.8	40.5	41.7	39 30.24	29.24	27.91	21 38 33.09	+ 0.10
	B. A. C. 7610	11	32.2	38.3	41.2	8.5	12.0	15.4	18.8	21.4	49.0	52.0	58.0	45 15.16	0.85	27.91	21 44 46.40	− 3.45
	O. Arg. N. 22961	12	. .	. .	. .	35.6	38.5	42.1	45.4	48.4	. .	. .	. .	46 42.00	− 0.85	27.91	21 46 13.24	− 3.46
	*−27° 29′	13	0.6	2.8	4.1	15.3	16.4	17.8	19.0	20.1	30.9	32.0	34.2	58 17.56	+ 0.03	27.92	21 57 49.67	+ 0.80
	O. Arg. S. 22027	14	9.6	11.8	13.0	23.3	24.5	25.8	27.0	28.2	38.6	39.6	41.9	9 25.75	+ 0.01	27.93	22 8 57.83	+ 0.75
	Lalande 43751	15	18.4	21.2	22.4	34.6	35.9	37.6	39.0	40.4	52.5	54.0	56.6	18 37.61	− 0.28	27.93	22 18 9.40	− 0.24
	*−28° 8′	16	41.0	43.3	44.6	55.5	56.6	57.9	59.3	0.4	11.4	12.6	15.0	26 57.96	+ 0.03	27.93	22 26 30.06	+ 0.72
	*−28° 5′	17	. .	. .	. .	38.7	40.0	41.5	42.8	43.9	54.8	56.0	58.4	27 47.01	− 5.61	27.93	22 27 13.47	0.72
	*−28° 15′	18	. .	. .	. .	15.5	16.8	18.1	19.5	20.7	31.6	32.9	35.2	28 23.79	5.60	27.93	22 27 50.26	0.72
	B. A. C. 7951, (1st *)	19	20.0	22.1	23.2	. .	. .	. .	. .	. .	46.9	48.0	50.3	41 35.08	− 0.06	27.94	22 41 7.08	0.60
	B. A. C. 7951, (2d *)	20	58.8	0.1	1.4	2.6	5.0	. .	5.2	7.3	8.6	10.0	11.2	41 35.02	+ 0.29	27.94	22 41 7.37	0.60
	Weisse 850	21	. .	. .	. .	35.0	36.1	37.4	38.6	39.6	. .	. .	. .	41 37.34	− 0.06	27.94	22 41 9.34	0.60
	Lacaille 9315, (1st *)	22	52.0	55.3	56.4	. .	. .	. .	. .	. .	22.7	24.0	26.5	51 9.63	+ 0.03	27.95	22 50 41.71	0.67
	Lacaille 9315, (2d *)	23	. .	. .	. .	7.1	8.3	9.6	11.0	12.2	. .	. .	. .	51 9.64	0.03	27.95	22 50 41.72	0.67
	O. Arg. S. 22514	24	30.5	31.8	33.3	34.6	37.4	. .	44.6	46.9	48.3	50.1	51.4	51 10.89	+ 0.42	27.95	22 50 43.36	+ 0.67
	B. A. C. 8039	25	29.6	34.6	37.4	1.7	4.3	7.2	10.6	12.9	36.5	39.8	45.3	59 7.26	− 0.73	27.95	22 58 38.58	− 2.53
	O. Arg. S. 22711	26	56.2	58.5	59.7	10.0	11.1	12.4	13.8	14.9	25.4	26.5	28.7	9 12.47	+ 0.01	27.95	23 8 44.53	+ 0.64
	*−22° 0′	27	. .	. .	. .	. .	. .	. .	53.9	56.0	57.5	59.1	0.4	9 57.38	− 35.54	27.95	23 8 53.89	0.64
	*−34° 37′	28	53.8	56.6	57.8	9.4	10.7	12.3	13.8	15.0	26.6	28.0	30.5	14 12.23	+ 0.06	27.96	23 13 44.33	+ 0.60
	Radcliffe 6064	29	21.3	24.7	26.9	42.9	44.7	46.9	49.0	50.9	7.2	9.2	12.7	17 46.95	− 0.47	27.96	23 17 18.52	− 1.00
	θ Piscium	30	34.9	37.2	38.3	47.8	48.9	50.1	51.4	52.4	2.0	3.0	5.1	21 50.10	0.10	27.96	23 21 22.04	+ 0.49
	Lalande 46097	31	45.6	48.3	49.6	1.6	2.9	4.5	6.0	7.2	19.3	20.7	23.5	26 4.47	0.28	27.96	23 25 36.23	− 0.11
	Groombridge 4142	32	45.9	50.4	52.8	. .	. .	. .	. .	. .	44.9	47.4	52.4	42 18.97	0.63	27.97	23 41 50.37	1.69
	*+63° 4′	33	. .	. .	. .	21.6	24.1	26.4	29.2	31.8	. .	. .	. .	42 26.62	0.63	27.97	23 41 58.02	1.69
	O. Arg. N. 26093	34	35.2	40.0	42.2	3.9	6.3	8.8	11.6	13.8	34.8	37.4	41.8	45 8.71	0.63	27.97	23 44 40.11	1.69
	Weisse (2) 1107	35	44.2	46.9	48.3	0.5	1.8	3.4	4.9	6.1	18.3	19.6	22.3	54 3.30	− 0.28	27.98	23 53 35.04	− 0.01
	θ Sculptoris	36	15.8	18.6	19.9	31.7	33.0	34.5	36.0	37.2	49.1	50.5	52.9	5 34.47	+ 0.07	27.98	0 5 6.56	+ 0.52
	Weisse 115	37	21.4	23.7	24.8	34.2	35.4	36.6	37.8	38.8	48.4	49.5	51.6	8 36.56	− 0.09	27.98	0 8 8.49	0.58
	*+0° 3′	38	22.3	24.5	25.7	35.0	36.2	37.6	38.6	39.6	48.9	50.1	52.4	10 37.36	− 0.08	27.98	0 10 9.30	0.59
	π Andromedæ	39	41.0	42.5	44.0	45.6	48.6	. .	59.8	2.5	3.9	5.7	7.0	30 24.06	+ 0.17	27.99	0 29 56.24	0.30
	Weisse (2) 749	40	7.0	9.4	10.5	22.0	23.2	24.7	26.3	27.5	38.8	40.0	42.5	30 24.72	− 0.25	27.99	0 29 56.48	0.30
	Lalande 975	41	53.4	56.0	57.1	9.2	10.4	11.8	13.3	14.4	26.5	28.0	30.5	32 11.87	0.27	28.00	0.31 43 60	0.21
	β Ceti	42	15.3	17.4	18.6	28.7	29.8	31.1	32.5	33.5	43.6	44.7	47.0	37 31.11	0.01	28.00	0 37 3.10	0.64
	61 Piscium	43	12.9	15.0	16.2	26.4	27.7	28.9	30.2	31.3	41.5	42.7	44.9	41 28.88	0.17	28.00	0 41 0.71	0.51
	Rumker, N. F., 340	44	35.9	38.0	39.0	48.7	49.9	51.1	52.3	53.4	2.9	3.9	6.0	44 51.01	0.09	28.00	0 44 22.92	0.65
	Weisse 808	45	17.6	19.6	20.8	30.4	31.5	32.6	33.9	34.8	44.5	45.6	47.9	47 32.65	− 0.11	28.00	0 47 4.54	0.64
	Lacaille 277	46	21.6	24.5	25.8	38.3	39.5	41.0	42.6	43.8	56.6	58.0	0.7	55 41.13	+ 0.09	28.01	0 55 13.21	0.46
	Lacaille 290	47	22.6	25.2	26.4	37.8	39.1	40.6	42.1	43.3	54.7	56.0	58.5	57 40.57	+ 0.05	28.01	0 57 12.61	0.56
	Weisse 1043	48	4.2	6.4	7.4	17.2	18.2	19.4	20.7	21.7	31.3	32.5	34.6	0 19.42	− 0.11	28.01	0 59 51.30	0.67
	Weisse 1085	49	20.2	22.3	23.5	33.2	34.3	35.5	36.6	37.6	47.5	48.6	50.8	2 35.46	0.12	28.01	1 2 7.33	0.67
	Weisse 162	50	21.2	23.3	24.3	33.9	35.0	36.3	37.4	38.4	48.0	49.1	51.2	12 36.19	− 0.10	−28.01	1 12 8.08	+ 0.72

2. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 9, 23.0	− 27.95	− 0.029	− 0.23	− 0.08

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 9	Weisse 188, (1st *)	1	. .	. .	. .	0.8	1.9	4.1	19.4	21.5	22.7	24.3	25.5	14 15.02	− 26.41	−28.01	1 13 20.60	+ 0.69
Y.	Weisse 188, (2d *)	2	. .	. .	. .	47.1	48.3	49.5	50.8	51.7	. .	. .	. .	13 49.48	0.14	28.01	1 13 21.33	+ 0.69
	Polaris	3	. .	. .	. .	. .	. .	. .	. .	. .	51.5	36.0	2.0	21 49.83	9 19.82	28.02	. . . .	− 43.66
	π Andromedæ . .	4	7.2	10.1	11.7	25.9	27.6	29.3	31.2	32.7	46.9	48.8	51.7	30 29.37	0.38	28.02	1 30 0.97	+ 0.29
	*+13° 49′ . .	5	. .	. .	. .	40.0	41.2	42.4	43.7	44.7	. .	. .	. .	33 42.40	0.14	28.02	1 33 14.24	0.77
	*+13° 52′ . . .	6	. .	. .	. .	3.2	4.5	6.7	22.2	23.9	25.1	26.4	27.9	34 17.49	26.49	28.02	1 33 22.98	0.77
	Weisse 607. . .	7	. .	. .	. .	. .	. .	. .	32.5	34.6	35.9	37.3	38.4	35 35.74	33.18	28.02	1 34 34.54	0.80
	ο Piscium . . .	8	43.9	46.2	47.3	56.9	58.0	59.2	0.5	1.4	11.0	12.2	14.2	38 59.16	0.11	28.03	1 38 31.02	0.80
10	Moon I . . .	9	10.0	12.2	13.2	23.3	24.6	25.8	27.2	28.2	38.2	39.4	41.5	25 25.78	0.05	28.63	15 24 57.10	
F.	κ Ophiuchi . . .	10	42.8	44.8	45.9	55.7	56.8	58.0	59.1	0.2	9.8	11.0	13.1	51 57.93	0.08	28.68	16 51 29.17	1.76
	α Ophiuchi . . .	11	5.9	8.1	9.2	19.0	20.1	21.3	22.6	23.7	33.5	34.6	36.7	29 21.34	0.11	28.69	17 28 52.54	+ 1.52
	λ Ursæ Minoris . .	12	. .	. .	. .	. .	. .	17.0	25.0	17.0	. .	. .	. .	57 19.67	1 7.27	28.76	. . . .	− 86.33
	*−14° 5′ . . .	13	9.0	11.2	12.2	22.2	23.4	24.6	25.8	26.9	36.6	37.8	39.8	5 24.50	− 0.06	28.77	20 4 55.67	+ 1.11
	Lalande 39884. .	14	11.5	13.0	14.9	16.3	19.5	. .	54.9	56.2	57.7	59.2	0.8	32 36.40	+ 21.11	28.78	20 32 28.73	− 0.06
	Lalande 39885 .	15	. .	. .	. .	14.7	15.8	18.4	36.9	39.7	41.1	43.2	45.4	33 31.90	− 32.52	28.78	20 32 30.60	− 0.06
	O. Arg. S. 20819 .	16	. .	. .	. .	4.0	5.0	6.4	7.8	8.9	19.5	20.7	22.8	39 11.89	5.51	28.78	20 38 37.60	+ 1.07
	ζ Cygni	17	35.9	38.1	39.4	50.4	51.6	52.9	54.4	55.6	6.5	7.9	10.4	7 53.01	0.12	28.80	21 7 24.09	0.11
	μ Cygni, (1st *) .	18	46.2	47.3	48.5	49.9	50.9	. .	22.3	24.6	26.1	27.4	29.0	39 7.22	18.80	28.81	21 38 19.61	0.29
	μ Cygni, (2d *) .	19	. .	. .	. .	. .	. .	. .	22.6	25.2	26.5	28.0	29.4	39 26.34	37.51	28.81	21 38 20.02	0.29
	B. A. C. 7570 . .	20	59.6	0.8	2.1	3.5	4.6	. .	35.9	38.2	39.6	41.2	42.5	39 20.80	− 18.80	28.81	21 38 33.19	0.29
	*−21° 51′ . . .	21	49.0	51.4	52.9	3.1	4.3	5.5	6.7	8.0	. .	. .	. .	9 0.11	+ 5.31	28.83	22 8 36.59	0.75
	Weisse 167. . .	22	45.4	47.4	48.5	58.4	59.5	0.7	2.0	3.2	13.0	14.0	16.2	10 0.75	− 0.06	28.83	22 9 31.86	0.69
	Weisse 175. . .	23	. .	. .	. .	29.3	30.5	32.7	47.4	49.9	51.2	52.6	53.7	10 43.41	− 26.24	28.83	22 9 48.34	0.69
	B. A. C. 7809 . .	24	45.1	46.4	47.8	49.0	51.4	. .	19.4	20.6	21.8	23.0	23.9	18 4.84	+ 16.77	28.83	22 17 52.78	0.59
	*+ 3° 6′ . . .	25	. .	. .	. .	5.2	6.4	8.7	23.3	25.3	26.6	27.8	29.0	19 19.04	− 25.69	28.83	22 18 24.52	0.54
	*−28° 8′ . . .	26	41.7	44.2	45.4	57.5	. .	59.2	. .	1.5	12.2	13.7	16.6	26 59.11	0.05	28.84	22 26 30.22	0.72
	*−28° 8′ . . .	27	. .	. .	. .	32.0	33.4	34.6	35.9	37.2	48.0	49.3	51.6	27 40.25	5.68	28.84	22 27 5.73	0.72
	*−28° 15′ ± . .	28	2.2	4.2	5.6	16.5	17.6	19.0	20.2	21.3	32.2	33.5	35.8	28 18.92	0.05	28.84	22 27 50.03	0.72
	Lacaille 9315, (1st *)	29	53.7	56.2	57.4	8.1	9.2	10.6	12.0	13.1	24.0	25.2	27.5	51 10.64	0.05	28.85	22 50 41.74	0.63
	Lacaille 9315, (2d *)	30	. .	. .	. .	. .	. .	. .	44.4	46.6	48.0	49.6	51.0	51 47.92	36.99	28.85	22 50 42.08	0.63
	Lacaille 9352 . .	31	37.1	39.6	41.0	53.0	54.1	55.6	57.0	58.3	10.6	12.0	14.4	57 55.79	0.04	28.85	22 57 26.81	0.62
	Weisse 143 . .	32	12.3	14.4	15.7	25.5	26.6	27.8	28.9	30.0	39.8	41.0	42.8	9 27.71	0.06	28.86	23 8 58.79	0.61
	*−39° 12 . . .	33	8.2	9.4	11.1	12.7	14.0	. .	49.3	52.1	53.7	55.8	57.2	13 32.35	21.29	28.86	23 12 42.20	0.75
	Lalande 45758. .	34	. .	. .	. .	22.3	23.3	25.5	40.1	42.2	43.5	44.9	46.1	16 35.99	25.65	28.86	23 15 41.48	0.55
	υ Pegasi	35	19.9	21.2	22.4	23.7	24.8	. .	54.5	56.8	58.0	59.6	0.8	19 40.17	17.96	28.86	23 18 53.35	0.14
	Weisse 528 . .	36	10.0	12.1	13.4	23.0	24.1	25.5	26.7	27.8	37.6	38.7	40.8	28 25.43	0.09	28.87	23 27 56.47	0.29
	ι Piscium . . .	37	29.3	31.2	32.4	42.0	43.2	44.3	45.7	46.6	56.1	57.2	59.3	33 44.30	0.07	28.87	23 33 15.36	0.50
11	α Aquilæ	38	52.8	53.9	55.1	56.2	57.4	. .	25.0	27.4	28.5	30.0	31.2	45 11.75	16.74	29.43	19 44 25.58	0.90
Y.	*−22° 35′ . . .	39	24.0	25.2	26.3	27.6	28.7	. .	58.7	0.9	2.3	3.7	5.0	49 44.24	17.88	29.44	19 48 56.92	1.28
	*−11° 16′ . . .	†40	. .	. .	. .	48.3	49.4	51.7	6.6	8.9	10.0	11.2	12.4	8 2.31	26.14	29.44	20 7 6.73	1.07
	*−24° 17′ . . .	41	20.3	22.3	23.5	33.9	35.1	36.5	37.7	38.9	49.5	50.6	52.6	10 36.45	0.04	29.44	20 10 6.97	+ 1.20
	λ Ursæ Minoris . .	42	. .	. .	. .	. .	. .	. .	45.0	38.0	42.0	59.0	0.0	25 36.80	29 24.74	29.45	. . . .	− 85.28
	*+37° 49′ . . .	43	36.5	41.2	42.5	54.7	56.2	57.6	58.9	0.4	12.6	13.9	16.7	32 57.38	0.16	29.45	20 32 27.77	− 0.06
	ζ Cygni	44	36.3	38.8	39.9	50.9	52.1	53.6	55.0	56.2	7.3	8.5	11.0	7 53.60	0.13	29.46	21 7 24.01	+ 0.12
	Weisse (2) 225 .	45	30.3	32.8	34.0	46.0	47.4	48.9	50.5	51.7	3.7	5.0	7.8	10 48.92	0.16	29.46	21 10 19.30	− 0.12
	B. A. C. 7586 . .	46	41.6	43.8	45.0	55.7	56.9	58.3	59.5	0.7	11.1	12.4	14.6	41 58.15	0.12	29.47	21 41 28.56	+ 0.18
	B. A. C. 7596 . .	47	26.8	29.0	30.1	39.8	40.8	42.0	43.2	44.2	53.9	55.0	57.1	42 41.99	0.06	29.47	21 42 12.46	+ 0.69
	*+38° 39′ . . .	48	22.4	25.0	26.4	38.7	40.0	41.5	43.2	44.4	56.7	58.2	1.0	47 41.59	0.16	29.48	21 47 11.95	− 0.25
	O. Arg. N. 23385 .	49	. .	. .	. .	39.3	40.9	43.0	45.0	46.6	. .	. .	. .	1 42.96	0.24	29.48	22 1 13.24	1.07
	O. Arg. N. 23425 .	50	. .	. .	. .	13.4	15.0	17.0	18.9	20.7	. .	. .	. .	2 17.00	− 0.24	−29.48	22 1 47.28	− 1.08

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 10, 19.8	− 28.76	− 0.029	− 0.06	− 0.07
11, 21.5	− 29.47	− 0.020	− 0.09	− 0.07

40. Faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 11	*+53° 2′ . . .	1	. .	. .	. .	37.6	39.1	41.4	43.3	44.9	. .	. .	. .	2 41.26	− 0.24	−29.48	22 2 11.54	− 1.08
Y.	θ Aquarii. . . .	2	12.0	14.2	15.3	24.9	26.0	27.2	28.5	29.5	39.0	40.4	42.5	10 27.23	0.06	29.48	22 9 57.69	+ 0.67
	B. A. C. 7851 . .	3	. .	. .	. .	41.0	54.0	10.0	25.0	37.0	39.0	53.0	19.0	24 9.64	2.01	29.49	22 23 38.14	− 21.28
	9 Lacertæ . . .	4	9.1	12.3	14.0	29.1	30.9	32.8	34.6	36.2	51.5	53.4	56.6	32 32.77	0.23	29.49	22 32 3.05	− 0.89
	*−6° 18′ . . .	5	. .	. .	. .	56.0	57.4	58.6	59.8	0.8	. .	. .	. .	43 58.52	0.06	29.49	22 43 28.97	+ 0.59
	Lacaille 9351 . .	6	32.1	34.8	36.1	48.9	50.3	52.0	53.8	55.0	7.6	9.3	12.2	56 52.01	0.02	29.50	22 56 22.49	0.57
	α Pegasi	7	. .	. .	. .	58.5	59.5	1.9	17.2	19.4	20.7	22.1	23.4	59 12.84	26.52	29.50	22 58 16.82	0.36
13	μ¹ Sagittarii . . .	8	9.2	11.4	12.6	22.9	24.0	25.4	26.6	27.6	38.0	39.2	41.3	6 25.29	0.05	27.70	. . . .	+ 1.82
F.	δ Ursæ Minoris . .	9	. .	. .	. .	24.5	42.0	2.5	23.0	39.0	. .	. .	. .	15 2.20	1.65	27.71	. . . .	− 16.45
	Moon I. . . .	10	21.9	24.2	25.4	36.0	37.1	38.4	39.8	40.9	51.5	52.7	55.0	18 38.45	0.05	27.73	18 18 10.67	
	λ Sagittarii . . .	11	. .	. .	. .	20.4	21.5	22.9	24.2	25.3	. .	. .	. .	20 22.86	0.05	27.73	18 19 55.08	+ 1.80
	B. A. C. 6279 . .	12	57.9	0.0	1.0	11.1	12.2	13.4	14.7	15.7	25.6	26.6	28.8	22 13.36	0.05	27.73	18 21 45.58	1.64
	μ Aquarii . . .	13	50.1	52.3	53.4	3.2	4.2	5.3	6.5	7.5	17.4	18.5	20.7	46 5.37	0.05	27.76	. . . .	0.92
	σ Sagittarii . . .	14	21.5	23.8	25.0	35.8	37.0	38.3	39.5	40.7	51.4	52.7	55.0	47 38.25	0.05	27.74	. . . .	+ 1.67
	β Lacertæ . . .	15	31.9	35.5	36.9	52.5	54.3	56.0	58.0	59.7	15.1	17.0	20.2	18 56.10	0.15	27.81	22 18 28.14	− 0.94
14	ζ Aquilæ	16	36.9	39.1	40.3	50.0	51.2	52.5	53.7	54.8	4.4	5.7	7.9	59 52.41	0.10	27.25	18 59 25.06	+ 1.06
Y.	d Sagittarii . . .	17	. .	. .	. .	25.0	26.2	27.4	28.7	29.7	39.9	41.0	43.3	10 32.65	5.28	27.26	19 10 0.11	1.43
	Moon I. . . .	18	38.4	40.7	41.8	52.6	53.7	54.9	56.3	57.4	8.0	9.2	11.4	14 54.95	0.00	27.26	19 14 27.69	
	κ Aquilæ	19	4.7	6.8	7.9	17.5	18.6	19.8	21.0	22.1	31.7	32.8	34.9	30 19.80	0.04	27.27	19 29 52.49	1.23
	c² Sagittarii . . .	20	15.0	17.3	18.5	28.4	29.6	30.8	32.0	33.1	43.0	44.2	46.4	35 30.75	− 0.02	27.27	19 35 3.46	1.31
	*−39° 43′ . . .	21	48.4	51.1	52.5	4.9	6.2	8.0	9.5	10.7	23.1	24.8	27.3	38 7.86	+ 0.05	27.27	19 37 40.64	+ 1.57
	λ Ursæ Minoris . .	22	. .	. .	. .	20.0	15.0	16.0	21.0	15.0	. .	. .	. .	56 17.40	− 11.17	27.28	. . . .	− 81.75
	Weisse 135 . .	23	23.2	24.4	25.8	27.1	29.5	. .	30.6	32.9	34.2	35.6	36.8	8 0.01	+ 0.32	27.28	20 7 33.05	+ 1.10
	B. A. C. 6949 . .	24	51.0	53.1	54.2	4.0	5.0	6.3	7.6	8.5	18.4	19.4	21.7	8 6.29	− 0.03	27.28	20 7 38.98	+ 1.10
	33 Cygni	25	. .	. .	. .	46.9	48.8	51.0	53.0	54.9	. .	. .	. .	10 50.92	− 0.34	27.29	20 10 23.29	− 0.93
	*−16° 42′ . . .	26	13.6	14.9	16.2	17.5	19.9	. .	49.1	50.3	51.7	52.9	54.0	32 34.01	+ 17.54	27.30	20 32 24.25	+ 1.06
	ι Aquarii . . .	27	. .	. .	. .	. .	. .	. .	41.1	43.4	44.6	46.0	47.2	33 44.46	− 33.02	27.30	20 32 44.14	0.85
	*−41° 4′ . . .	28	51.4	54.0	55.3	8.2	9.5	11.0	12.6	14.1	26.7	28.1	31.2	47 11.10	+ 0.05	27.31	20 46 43.84	1.17
	ζ Cygni	29	34.2	36.7	37.9	48.9	50.2	51.5	52.9	54.1	5.1	6.4	8.8	7 51.52	− 0.16	27.31	21 7 24.05	0.15
	Lacaille 9351 . .	30	29.6	32.6	34.0	47.0	48.3	49.8	51.5	52.8	5.8	7.3	10.0	56 49.88	+ 0.06	27.37	22 56 22.57	+ 0.56
	O. Arg. N. 25122 .	31	57.8	3.3	5.8	30.3	32.6	35.7	39.0	41.5	5.4	8.6	13.7	0 35.79	− 0.50	27.37	23 0 7.92	− 2.54
	*−39° 9′ . . .	32	50.5	52.7	54.4	6.8	8.2	9.5	11.1	12.4	24.7	26.4	29.0	13 9.61	+ 0.05	27.38	23 12 42.28	+ 0.53
	*−39° 13′ . . .	33	. .	. .	. .	55.8	57.4	58.7	0.4	1.6	14.0	15.4	18.2	14 5.19	− 6.37	27.38	23 13 31.44	+ 0.53
	*+54° 15′ . . .	34	38.7	42.2	43.8	. .	2.2	4.3	6.3	. .	24.7	26.4	29.9	21 4.28	0.32	27.38	23 20 36.58	− 0.99
	*+54° 15′ . . .	35	53.6	57.0	58.9	. .	17.4	19.4	21.4	. .	39.6	41.3	44.9	21 19.28	0.32	27.38	23 20 51.58	− 0.99
	ι Piscium . . .	36	27.8	30.0	31.0	40.8	41.8	43.0	44.1	45.1	54.8	55.8	58.0	33 42.93	0.07	27.39	23 33 15.47	+ 0.47
	Groombridge 4142	37	45.6	50.1	52.2	13.5	15.8	18.3	21.0	23.8	44.4	46.9	51.7	42 18.48	0.42	27.39	23 41 50.67	− 1.74
	*+63° 4′ . . .	38	. .	57.8	0.2	. .	. .	26.0	29.0	. .	. .	54.9	59.5	42 27.90	2.03	27.39	23 41 58.48	1.73
	O. Arg. N. 26080 .	39	1.0	5.4	7.6	28.9	31.3	33.9	36.7	38.5	59.1	2.5	7.0	44 33.81	0.43	27.39	23 44 5.99	− 1.71
	*+10° 50′ . . .	40	15.4	16.6	17.7	18.9	20.0	. .	47.9	50.1	51.5	53.0	54.5	48 34.56	16.77	27.39	23 47 50.40	+ 0.43
	Weisse (2) 1107 .	41	43.8	46.4	47.7	59.9	1.3	2.8	4.3	5.6	17.6	19.1	21.8	54 2.75	0.19	27.40	23 53 35.16	− 0.07
	Lacaille 9724 . .	42	. .	. .	. .	35.2	36.5	37.6	38.9	40.0	50.6	52.7	54.0	0 43.19	− 5.44	27.40	0 0 10.35	+ 0.55
	*−23° 51′ . . .	43	20.4	21.7	23.1	24.6	27.0	. .	32.7	35.0	36.5	37.9	39.1	0 59.80	+ 0.38	27.40	0 0 32.78	0.55
	Weisse 97 . . .	44	33.1	35.3	36.5	46.1	47.2	48.3	49.5	50.6	0.1	1.4	3.4	6 48.32	− 0.08	27.40	0 6 20.84	0.49
	O. Arg. S. 90 . .	45	52.9	55.0	56.2	6.2	7.2	8.4	9.6	10.7	20.7	21.9	24.0	10 8.44	− 0.02	27.41	0 9 41.01	0.56
	Lacaille 50. . .	46	33.2	35.9	37.3	50.0	51.2	52.7	54.2	55.6	8.2	9.6	12.3	14 52.75	+ 0.05	27.41	0 14 25.39	0.39
	Lacaille 61. . .	47	26.9	29.8	31.2	43.8	45.2	46.7	48.2	49.5	2.2	3.4	6.3	16 46.65	0.05	27.41	0 16 19.29	0.39
	O. Arg. S. 312. .	48	46.9	49.4	50.6	1.7	2.9	4.2	5.6	6.9	18.0	19.2	21.5	32 4.26	+ 0.02	27.42	0 31 36.86	0.49
	*+4° 1′. . . .	49	50.0	52.1	53.2	. .	. .	. .	. .	. .	16.7	18.0	20.2	36 5.03	− 0.07	27.42	0 35 37.54	0.55
	*+4° 2′. . . .	50	28.6	30.0	31.2	32.5	34.9	. .	34.9	37.1	38.4	39.7	40.9	36 4.82	+ 0.28	−27.42	0 35 37.68	+ 0.55

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 13, 19.9	− 27.74	− 0.020	− 0.04	− 0.06
14, 21.3	− 27.32	− 0.030	− 0.15	− 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 14	*+4° 5′	1	. .	. .	. .	5.5	6.5	7.8	9.0	10.0	. .	. .	. .	36 7.76	− 0.07	−27.42	0 35 40.27	+ 0.55
Y.	Lacaille 234	2	19.4	21.9	23.4	35.8	37.1	38.9	40.2	41.6	53.8	55.4	58.0	45 38.68	+ 0.05	27.42	0 45 11.31	0.37
	*+1° 35′	3	29.3	30.6	31.8	33.0	35.8	. .	35.4	37.5	38.8	40.2	41.5	49 5.39	0.29	27.43	0 48 38.25	0.59
	*+1° 35′	4	39.3	40.7	41.9	43.2	45.5	. .	45.5	47.7	49.0	50.4	51.7	49 15.49	+ 0.29	27.43	0 48 48.35	0.59
	Weisse 917	5	36.8	38.9	40.0	49.6	50.7	51.9	53.0	54.0	3.7	4.9	7.0	53 51.86	− 0.07	27.43	0 53 24.36	0.59
	O. Arg. S. 596	6	13.0	15.4	16.5	27.5	28.6	30.0	31.3	32.5	43.5	44.8	47.0	57 30.01	+ 0.02	27.43	0 57 2.60	0.51
	ψ^2 Piscium	7	10.0	12.3	13.5	23.7	24.7	26.0	27.2	28.3	38.6	39.8	42.0	1 26.01	− 0.01	27.43	1 0 58.57	0.50
	O. Arg. S. 752.	8	32.8	35.3	36.5	47.6	48.8	50.2	51.6	52.7	3.7	4.9	7.4	12 50.14	+ 0.02	27.44	1 12 22.72	0.51
	94 Piscium	9	51.7	54.0	55.1	5.2	6.4	7.6	8.8	9.9	20.1	21.1	23.4	20 7.57	− 0.12	27.44	1 19 40.01	0.59
	Weisse 336	10	20.2	21.3	22.5	23.7	24.7	. .	52.5	54.7	56.0	57.4	58.6	21 39.16	16.71	27.44	1 20 55.01	0.65
	η Piscium	11	43.2	45.5	46.5	56.4	57.5	58.7	59.9	1.0	10.9	12.0	14.2	24 58.71	0.10	27.44	1 24 31.17	0.64
	*+3° 27′	12	11.1	13.2	14.2	23.9	25.0	26.2	27.4	28.4	38.0	39.0	41.2	31 26.15	0.07	27.45	1 30 58.63	0.69
	Weisse 582.	13	1.5	3.7	4.7	14.3	15.3	16.4	17.8	18.8	28.4	29.5	31.7	34 16.55	− 0.05	27.45	1 33 49.05	0.70
	B. A. C. 527	14	25.5	28.0	29.3	40.7	41.9	43.4	44.7	46.0	57.4	58.8	1.3	36 43.36	+ 0.03	27.45	1 36 15.94	0.49
	Weisse 709.	15	27.0	29.1	30.1	40.0	41.0	42.2	43.5	44.5	54.2	55.5	57.6	40 42.25	− 0.09	27.45	1 40 14.71	0.71
16	θ Capricorni.	16	49.1	51.3	52.3	2.5	3.5	4.8	6.0	7.0	17.2	18.4	20.6	59 4.79	0.02	27.61	20 58 37.16	0.98
	Moon I.	17	52.7	54.9	56.0	6.2	7.4	8.7	10.0	11.1	21.6	22.8	25.0	2 8.76	0.01	27.61	21 1 41.14	
	ξ Cygni	18	34.5	37.0	38.1	49.2	50.4	51.8	53.2	54.4	5.4	6.9	9.1	7 51.82	0.16	27.61	. . . .	0.18
18	θ Aquarii.	19	. .	. .	. .	. .	. .	. .	54.2	56.3	57.5	58.9	0.1	10 57.40	33.39	26.36	22 9 57.65	0.68
	π Aquarii.	20	49.0	51.2	52.2	1.9	2.9	4.1	5.3	6.4	15.9	17.0	19.2	19 4.10	0.06	26.36	22 18 37.68	0.56
	κ Aquarii.	21	12.2	14.3	15.4	. .	. .	. .	. .	. .	39.1	40.1	42.3	31 27.23	0.05	26.36	22 31 0.82	0.60
	Moon I.	22	53.6	55.6	56.8	6.9	7.9	9.0	10.3	11.5	21.4	22.5	24.8	41 9.12	0.03	26.36	22 40 42.73	
	λ Aquarii.	23	0.5	2.7	3.8	13.4	14.5	15.7	16.9	17.9	27.6	28.7	30.9	46 15.69	0.04	26.36	22 45 49.29	0.63
	78 Aquarii.	24	58.6	0.7	1.8	11.5	12.5	13.7	15.0	16.0	25.6	26.7	28.9	48 13.73	0.04	26.36	22 47 47.33	+ 0.59
	*+54° 24′	25	. .	. .	. .	24.7	26.2	28.4	30.7	32.3	. .	. .	. .	20 28.46	0.32	26.36	23 20 1.78	− 1.01
	*+54° 29′	26	28.5	32.3	34.2	50.6	52.4	54.5	56.7	58.3	14.9	16.8	20.4	21 54.51	0.32	26.36	23 21 27.83	1.01
	*+54° 25′	27	10.8	14.3	16.2	32.8	34.6	36.7	38.7	40.4	56.8	58.8	2.6	23 36.71	0.32	26.36	23 23 10.03	1.00
	γ Cephei	28	28.3	37.7	42.2	24.9	29.5	34.7	39.8	44.5	27.0	31.5	40.7	34 34.62	0.91	26.36	23 34 7.35	− 5.49
	ω Piscium	29	48.8	51.1	52.2	1.8	2.9	4.2	5.3	6.4	15.9	17.2	19.3	53 4.10	0.08	26.36	23 52 37.66	+ 0.45
	85 Pegasi	30	32.3	34.9	35.9	46.7	47.9	49.2	50.6	51.7	2.5	3.7	5.9	55 49.21	0.15	26.36	23 55 22.70	+ 0.18
	Lalande 47307.	31	16.4	19.0	20.4	32.6	33.9	35.4	37.0	38.3	50.4	51.8	54.5	1 35.43	0.20	26.36	0 1 8.87	− 0.08
	Lalande 81.	32	0.8	3.5	4.8	17.1	18.4	19.8	21.4	22.8	35.2	36.6	39.2	6 19.96	0.20	26.36	0 5 53.40	0.08
	23 Andromedæ	33	. .	. .	. .	28.0	29.5	32.3	51.6	54.6	56.0	57.9	59.5	7 46.17	33.75	26.36	0 6 46.06	0.14
	θ Andromedæ	34	25.6	28.4	29.8	42.0	43.3	44.9	46.3	47.6	59.9	1.3	3.9	10 44.82	0.20	26.36	0 10 18.26	0.05
20	λ Ursæ Minoris	35	. .	. .	. .	. .	. .	59.0	8.0	59.0	. .	. .	. .	57 2.00	− 1 8.91	21.19	. . . .	− 74.69
F.	Gr. C. 1810	36	2.0	4.2	5.3	15.2	16.4	17.7	18.9	19.9	. .	. .	. .	9 12.45	+ 5.10	21.18	20 8 56.37	+ 0.76
	*+16° 21′	37	. .	. .	. .	32.2	33.2	34.5	35.8	36.9	46.9	48.0	50.2	9 39.71	− 5.28	21.18	20 9 13.25	0.76
	π Capricorni.	38	56.8	59.0	0.1	10.4	11.5	12.7	14.0	14.9	25.1	26.2	28.3	20 12.64	0.03	21.18	20 19 51.43	1.21
	*+37° 47′	39	. .	. .	. .	4.4	5.9	8.6	27.4	30.0	31.3	33.1	34.7	33 21.92	32.51	21.17	20 32 28.24	+ 0.10
	73 Draconis	40	. .	. .	. .	22.1	26.3	33.8	29.1	36.9	41.5	46.5	51.1	35 13.41	1 36.34	21.17	20 33 15.90	− 4.15
	B. A. C. 7210	41	. .	. .	. .	35.1	36.2	37.4	38.9	39.9	. .	. .	. .	42 37.50	0.01	21.17	20 42 16.32	+ 1.19
	*−27° 53′	42	. .	. .	. .	52.1	53.5	55.6	12.5	14.7	16.1	17.7	19.0	43 7.65	28.94	21.17	20 42 17.54	1.19
	*−27° 44′	43	. .	. .	. .	10.9	12.2	14.5	31.3	33.6	35.1	36.8	38.0	44 26.55	− 28.90	21.17	20 43 36.48	1.18
	B. A. C. 7225	44	49.8	52.2	53.4	4.1	5.5	6.7	8.1	9.2	. .	. .	. .	44 1.12	+ 5.61	21.17	20 43 45.56	1.18
	O. Arg. S. 22133	45	14.0	15.6	17.5	18.9	21.6	. .	53.4	54.5	55.7	57.3	58.4	18 36.69	+ 18.89	21.14	22 18 34.44	0.76
	*−29° 47′	46	10.2	12.2	13.5	24.7	26.0	27.3	28.6	29.8	40.5	42.0	44.0	19 27.16	− 0.01	21.14	22 19 6.01	+ 0.75
	B. A. C. 7851	47	. .	. .	. .	31.9	45.1	1.5	16.0	27.8	. .	. .	. .	24 0.46	2.01	21.14	22 23 37.31	− 20.31
	Lacaille 9194	48	26.0	28.7	30.0	42.6	43.9	45.4	47.2	48.3	1.1	2.2	5.1	31 45.50	0:00	21.13	22 31 24.37	+ 0.68
	31 Cephei	49	. .	. .	. .	39.4	43.4	50.5	40.7	47.9	52.2	57.1	1.0	34 26.52	1 27.85	21.13	22 32 37.54	− 4.52
	λ Aquarii	50	. .	. .	. .	8.2	9.3	10.4	. .	. .	22.4	23.6	25.6	46 16.58	− 6.17	−21.13	22 45 49.28	+ 0.63

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 16, 21.0	− 27.61	0.000	− 0.15	− 0.06
18, 22.8	− 26.36	0.000	− 0.15	− 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 20 F.	α Pegasi	1	22.6	24.7	25.9	35.7	36.9	38.0	39.2	40.3	50.3	51.4	53.5	58 38.05	− 0.09	−21.13	22 58 16.83	+ 0.35
	*+54° 25′ . . .	2	5.5	9.2	11.1	27.5	29.5	31.2	33.2	35.3	51.4	53.6	57.5	23 31.36	− 0.25	21.12	23 23 9.99	− 1.00
	O. Arg. N. 26080 .	3	7.9	10.3	13.1	15.6	20.7	. .	21.6	25.2	27.6	30.1	32.4	43 50.45	+ 36.72	21.11	23 44 6.06	1.73
	O. Arg. N. 26093 .	4	41.2	43.8	46.5	49.3	54.9	. .	57.3	59.4	2.0	4.6	6.7	44 24.57	+ 37.06	21.11	23 44 40.52	− 1.76
	c^2 Piscium . . .	5	. .	. .	. .	9.5	10.7	12.0	13.2	14.2	23.9	24.9	26.9	56 16.91	− 5.10	21.11	23 55 50.70	+ 0.43
	B. A. C. 47 . .	6	5.2	7.3	8.5	18.2	19.1	20.2	21.4	22.4	32.1	33.2	35.4	10 20.27	− 0.06	21.10	0 9 59.11	0.48
	d Piscium . . .	7	38.6	39.8	41.1	42.3	44.7	. .	13.0	14.0	15.2	16.4	17.4	13 58.25	+ 16.89	21.10	0 13 54.04	0.44
	Moon II . . .	8	48.2	50.4	51.6	1.3	2.5	3.6	4.8	5.8	15.6	16.8	18.9	16 3.59	− 0.05	21.10	0 15 42.44	
	44 Piscium . . .	9	. .	. .	. .	17.0	18.0	20.0	34.7	36.8	38.1	39.4	40.6	19 30.57	25.64	21.10	0 18 43.83	0.48
	δ Andromedæ . .	10	. .	. .	. .	41.2	42.5	43.9	45.0	46.4	. .	. .	. .	32 43.80	0.16	21.09	0 32 22.55	0.19
	β Ceti	11	. .	. .	. .	21.9	23.0	24.3	25.6	26.5	36.7	37.9	40.2	37 29.51	5.26	21.09	0 37 3.16	0.51
27	O. Arg. S. 22142 .	12	. .	. .	. .	0.0	1.2	2.3	3.6	4.8	15.5	17.0	18.9	19 7.91	5.32	10.02	22 18 52.57	0.78
	η Aquarii . . .	13	. .	. .	. .	47.8	48.9	50.0	51.3	52.2	1.8	3.0	5.0	28 55.00	5.01	10.01	. . . .	0.61
	α Pegasi	14	11.6	13.6	14.8	24.7	25.7	27.0	28.3	29.4	39.2	40.5	42.6	58 27.04	− 0.13	10.01	. . . .	0.36
	Lacaille 9445 . .	15	2.9	5.6	7.2	20.8	22.2	23.6	25.8	26.9	40.1	41.7	44.7	13 23.77	+ 0.28	10.00	23 13 14.05	+ 0.47
	*+54° 12′ . . .	16	. .	. .	. .	. .	. .	. .	38.1	41.8	43.6	46.6	48.3	21 43.68	− 56.96	10.00	23 20 36.72	− 0.97
	*+54° 12′ . . .	17	36.5	40.0	41.9	. .	. .	. .	. .	. .	. .	27.8	. .	20 51.55	+ 10.06	10.00	23 20 51.61	0.97
	*+54° 1′ . . .	18	. .	. .	. .	14.6	16.7	18.8	20.6	22.0	. .	. .	. .	21 18.54	− 0.54	10.00	23 21 8.00	0.95
	*+54° 4′ . . .	19	. .	. .	. .	. .	. .	. .	9.1	12.8	14.7	17.5	19.3	22 14.68	− 56.68	10.00	23 21 8.00	− 0.95
	B. A. C. 8311 . .	20	40.8	42.0	43.3	44.5	46.8	2.2	4.3	5.3	. .	. .	. .	47 51.15	+ 25.97	10.00	23 48 7.12	+ 0.46
	Weisse 1090 . .	21	49.7	51.8	52.9	2.4	3.5	4.6	5.6	6.9	6.4	7.6	9.8	54 4.65	− 0.04	10.00	23 53 54.61	+ 0.45
	B. A. C. 8344 . .	22	. .	. .	. .	. .	. .	. .	12.5	16.6	19.1	21.9	24.2	56 18.86	− 1 7.61	10.00	23 55 1.25	− 1.40
	O. Arg. S. 52 . .	23	56.0	58.0	59.1	9.4	10.5	11.8	13.0	14.1	24.5	25.6	27.8	6 11.80	+ 0.08	9.99	0 6 1.89	+ 0.47
	Harvard Z., 97, 22.	24	59.8	0.8	1.8	3.0	4.1	. .	31.9	34.0	35.2	36.5	37.7	7 18.48	− 16.51	9.99	0 6 51.98	0.45
	* 0° 0′	25	. .	. .	. .	. .	. .	. .	49.6	51.6	53.0	54.2	55.4	10 52.76	33.00	9.99	0 10 9.77	0.45
	O. Arg. S. 169. .	26	. .	. .	. .	23.7	24.9	26.1	27.4	28.4	39.1	40.2	42.8	18 31.57	5.35	9.99	0 18 16.23	0.44
	Weisse 503 . .	27	. .	. .	. .	. .	. .	. .	10.3	12.5	13.7	15.1	16.3	31 13.58	33.02	9.99	0 30 30.57	0.45
	*−35° 6′ . .	28	. .	. .	. .	. .	. .	. .	17.9	20.0	21.3	22.7	23.9	36 21.16	− 40.03	9.99	0 35 31.14	0.30
	*−35° 8′ . .	29	32.9	35.0	36.1	. .	. .	. .	. .	. .	59.8	1.2	3.2	35 48.03	+ 0.19	9.99	0 35 38.23	0.30
	B. A. C. 296 . .	30	57.7	59.9	1.1	12.2	13.5	14.9	16.3	17.5	28.7	29.9	32.3	57 14.91	+ 0.15	9.98	0 57 5.08	+ 0.33
	O. Arg. N. 1118 .	31	. .	. .	. .	. .	. .	. .	26.8	30.2	32.2	34.6	36.6	1 32.08	− 57.25	9.98	1 0 24.85	− 0.58
	Neptune . . .	32	51.7	53.8	55.0	4.6	5.7	6.8	8.2	9.0	18.7	19.9	21.7	11 6.83	− 0.07	9.98	1 10 56.78	
	θ Ceti	33	. .	27.8	29.0	38.6	39.7	40.9	42.2	43.2	52.7	53.9	. .	17 40.89	+ 0.01	9.98	. . . .	0.47
	Polaris	34	. .	. .	. .	. .	. .	. .	27.0	4.0	43.0	27.0	52.0	18 30.60	− 6 12.69	9.98	. . . .	− 50.46
28 Y.	λ Aquarii. . . .	35	9.2	11.4	12.6	22.2	23.2	24.5	25.6	26.7	36.5	37.5	39.6	46 24.45	+ 0.02	35.18	22 45 49.29	+ 0.65
	h^2 Aquarii. . . .	36	42.3	44.5	45.6	55.2	56.3	57.5	58.8	59.8	9.5	10.6	12.8	58 57.54	0.02	35.18	22 58 22.38	0.59
	h^4 Aquarii. . . .	37	45.6	47.6	48.8	58.4	59.5	0.7	2.0	3.0	12.6	13.6	15.9	1 0.70	0.02	35.18	23 0 25.54	0.59
	Lacaille 9429 . .	38	27.1	29.4	30.7	41.6	42.8	44.2	45.5	46.7	57.7	58.9	1.5	10 44.19	0.03	35.18	23 10 9.04	0.59
	*−39° 9′ . . .	39	58.0	0.7	2.2	14.6	15.6	17.3	18.7	20.2	32.6	33.9	36.8	13 17.33	+ 0.05	35.18	23 12 42.20	0.53
	*−39° 12′ . . .	40	. .	. .	. .	3.5	4.9	6.5	8.0	9.4	21.9	23.4	25.9	14 12.94	− 6.37	35.18	23 13 31.39	0.52
	*+ 5° 22′ . . .	41	35.9	37.1	38.5	39.7	41.7	. .	42.2	44.6	45.7	46.9	48.2	19 12.05	− 0.35	35.18	23 18 36.52	0.45
	Weisse 359 . .	42	4.6	6.7	7.8	17.5	18.5	19.7	21.0	21.9	31.6	32.6	34.7	19 19.69	0.00	35.18	23 18 44.51	0.45
	*+15° 15′ . . .	43	49.5	51.9	53.1	3.0	4.0	5.3	6.5	7.5	17.5	18.6	20.8	26 5.25	0.00	35.18	23 25 30.07	0.33
	ι Piscium . . .	44	35.5	37.6	38.7	48.4	49.5	50.6	51.8	52.8	2.6	3.6	5.5	33 50.60	+ 0.01	35.18	23 33 15.43	+ 0.44
	*+34° 11′ . . .	45	28.0	30.5	32.0	43.5	44.7	46.2	47.7	48.8	0.5	1.9	4.5	46 46.21	− 0.01	35.17	23 46 11.03	− 0.04
	*+10° 52′ . . .	46	. .	. .	. .	. .	. .	. .	56.1	58.7	0.0	1.4	2.6	48 59.76	34.27	35.17	23 47 50.32	+ 0.37
	B. A. C. 8338 . .	47	11.8	16.2	18.5	38.6	40.7	43.4	45.9	48.2	8.0	10.6	15.1	54 43.36	0.06	35.17	23 54 8.13	− 1.51
	*+57° 39′ . . .	48	. .	. .	. .	30.5	32.6	34.6	37.1	38.8	. .	. .	. .	59 34.72	0.05	35.17	23 58 59.50	1.13
	*+57° 39′ . . .	49	. .	. .	. .	3.5	5.5	7.4	9.9	11.5	. .	. .	. .	0 7.56	− 0.05	35.17	23 59 32.34	− 1.12
	O. Arg. S. 48 . .	50	55.3	57.6	58.6	8.7	9.7	10.8	12.1	13.2	23.4	24.4	26.4	6 10.93	+ 0.03	35.17	0 5 35.79	+ 0.48
	B. A. C. 27. . .	51	. .	. .	. .	12.0	13.4	14.9	16.4	17.8	30.4	31.5	34.0	7 21.30	− 6.32	35.17	0 6 39.81	+ 0.32
	Lalande 231 . .	52	23.7	26.3	27.6	40.0	41.3	43.1	44.6	45.9	58.3	59.6	2.4	10 42.98	− 0.02	−35.17	0 10 7.79	− 0.14

September 27. Image west 0ʳ.18. Clamp west.
Image west 0ʳ.10. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 20, 22.7	− 21.13	+ 0.020	− 0.10	− 0.06
27, 23.6	− 10.00	+ 0.012	− 0.34	− 0.04

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Sept. 28 Y.	*+44° 13′ . . .	1	59.2	2.1	3.6	17.1	18.4	20.0	21.9	23.2	36.9	38.1	41.1	13 20.15	— 0.02	—35.17	0 12 44.96	— 0.31
	Radcliffe 65 . .	2	50.3	53.6	55.2	8.6	10.0	11.6	13.3	14.8	28.1	29.6	32.5	14 11.60	0.02	35.17	0 13 36.41	0.31
	Radcliffe 73 . .	3	. .	35.5	36.8	50.3	51.8	53.6	55.1	56.7	10.1	11.5	. .	14 53.49	— 0.02	35.17	0 14 18.30	— 0.31
	Weisse 321 . .	4	38.3	40.5	41.6	51.3	52.3	53.4	54.5	55.7	5.3	6.3	8.5	20 53.43	+ 0.01	35.17	0 20 18.27	+ 0.45
	*+ 7° 18′ . . .	5	50.0	52.0	53.2	3.0	3.9	5.1	6.3	7.4	17.1	18.0	20.3	31 5.12	0.00	35.17	0 30 29.95	0.40
	*—32° 45′ . . .	6	14.6	17.1	18.4	29.8	31.1	32.5	33.8	35.1	46.6	47.9	50.3	32 32.47	0.04	35.17	0 31 57.34	0.33
	β Ceti	7	22.6	24.9	26.0	36.2	37.2	38.4	39.6	40.8	51.0	52.1	54.3	37 38.46	0.03	35.17	0 37 3.32	0.44
	Weisse 762. . .	8	57.3	59.4	0.5	10.1	11.0	12.2	13.4	14.5	24.1	25.2	27.3	45 12.27	+ 0.01	35.17	0 44 37.11	0.45
	Weisse 772. . .	9	. .	. .	. .	45.8	46.9	49.0	4.1	6.7	7.8	9.0	10.3	45 59.95	— 26.01	35.17	0 44 58.77	0.45
	*—32° 47′ . . .	10	24.9	27.4	28.7	40.0	41.4	42.7	44.2	45.5	57.0	58.3	0.4	56 42.77	+ 0.04	35.17	0 56 7.64	0.29
	Lacaille 290 . .	11	30.1	32.6	33.8	45.3	46.4	47.9	49.3	50.7	2.1	3.3	5.7	57 47.93	0.04	35.17	0 57 12.80	0.29
	Rumker, N. F., 538	12	23.2	25.4	26.6	36.1	37.1	38.3	39.5	40.5	50.3	51.2	53.4	1 38.33	0.01	35.17	1 1 3.17	0.44
	O. Arg. S. 752 . .	13	40.6	43.1	44.3	55.2	56.5	57.8	59.3	0.6	11.6	12.8	15.2	12 57.91	0.03	35.17	1 12 22.77	0.32
	θ Ceti	14	51.0	53.2	54.2	4.0	4.9	6.1	7.4	8.3	18.2	19.2	21.4	18 6.17	+ 0.02	35.17	1 17 31.02	+ 0.46
	Polaris	15	. .	. .	. .	. .	. .	. .	. .	. .	53.0	39.0	5.0	21 52.33	— 9 8.83	35.17	. . . .	— 50.70
	Weisse 441. . .	16	51.0	53.0	54.2	3.9	4.8	6.0	7.2	8.2	17.9	19.0	21.1	27 6.03	+ 0.01	35.17	1 26 30.87	+ 0.48
	Lacaille 462 . .	17	. .	. .	. .	31.8	32.9	34.3	35.8	37.0	. .	. .	. .	29 34.36	+ 0.04	35.17	1 28 59.23	0.29
	*—30° 32′ . . .	18	. .	. .	. .	52.0	53.2	55.5	13.4	16.2	17.6	19.0	20.6	30 8.44	— 30.15	35.17	1 29 3.12	0.29
	Weisse 643. . .	19	. .	. .	. .	. .	. .	. .	8.9	11.2	12.5	13.8	15.0	37 12.28	— 34.09	35.17	1 36 3.02	0.48
	Weisse 672. . .	20	42.7	44.9	46.0	55.8	56.8	57.9	59.2	0.2	10.0	11.0	13.1	37 57.96	+ 0.02	35.17	1 37 22.81	0.48
	O. Arg. S. 1049 .	21	30.0	32.4	33.7	. .	. .	. .	. .	. .	0.2	1.4	3.8	39 46.92	0.03	35.17	1 39 11.78	0.34
	*—26° 58′ . . .	22	49.3	51.6	52.8	. .	. .	. .	. .	. .	19.4	20.5	22.9	40 6.08	+ 0.03	35.17	1 39 30.94	0.34
29 F.	θ Aquarii. . . .	23	18.8	20.8	22.0	31.7	32.8	34.0	35.1	36.3	45.8	47.0	49.0	10 33.94	0.00	36.38	22 9 57.56	0.74
	Weisse 300. . .	24	14.6	16.6	17.9	27.7	28.6	29.9	31.1	32.2	41.9	43.3	45.1	16 29.90	0.00	36.38	22 15 53.52	0.75
	Lacaille 9130 . .	25	. .	. .	. .	. .	. .	. .	0.0	2.6	4.1	5.5	6.9	20 3.82	— 38.80	36.38	22 18 48.64	0.81
	*—28° 10′ . . .	26	. .	. .	. .	19.6	20.8	23.4	40.5	43.3	44.6	46.0	47.4	27 35.70	— 29.53	36.38	22 26 29.79	0.78
	ζ Pegasi	27	19.5	21.5	22.6	32.2	33.3	34.5	35.9	37.0	46.9	47.9	49.8	35 34.65	+ 0.02	36.38	22 34 58.29	0.47
	Lacaille 9271 . .	28	2.1	4.4	5.7	17.3	18.4	19.8	21.2	22.4	34.1	35.4	37.8	43 19.87	0.04	36.38	22 42 43.53	0.70
	Lacaille 9315, (1st*)	29	. .	. .	. .	15.4	16.5	17.8	19.2	20.4	. .	. .	. .	51 17.86	+ 0.02	36.39	22 50 41.49	0.67
	Lacaille 9315, (2d*)	30	38.3	39.3	41.2	42.6	45.0	. .	52.0	54.8	56.0	57.5	58.9	51 18.56	— 0.37	36.39	22 50 41.80	0.67
	O. Arg. S. 22514 .	31	2.9	5.2	6.3	. .	. .	. .	. .	. .	33.0	34.1	36.3	51 19.63	+ 0.02	36.39	22 50 43.26	0.67
	α Pegasi	32	37.5	39.8	40.9	50.8	51.8	53.1	54.3	55.5	5.5	6.5	8.8	58 53.14	+ 0.03	36.39	22 58 16.78	0.37
	*—9° 19′ . . .	33	11.3	13.5	14.7	24.3	25.5	26.6	27.7	28.9	38.6	39.7	41.9	14 26.61	0.00	36.39	23 13 50.22	0.56
	B. A. C. 8134 . .	34	. .	. .	. .	27.2	28.3	30.4	45.6	47.9	49.2	50.4	51.7	15 41.34	— 26.13	36.39	23 14 38.82	+ 0.54
	*+54° 26′ . . .	35	38.4	41.9	44.0	0.3	2.2	4.2	6.2	8.2	24.7	26.7	30.0	22 4.45	+ 0.12	36.39	23 21 27.98	— 0.97
	*+54° 22′ . . .	36	20.5	24.0	26.1	42.6	44.3	46.5	48.4	50.4	6.5	8.4	12.0	23 46.34	+ 0.12	36.39	23 23 10.07	— 0.97
	*—32° 8′ . . .	37	. .	. .	. .	5.5	6.7	9.3	27.3	30.2	31.6	33.0	34.6	46 22.27	— 30.75	36.40	23 45 15.12	+ 0.46
	Lalande 47310. .	38	38.4	40.9	42.2	54.2	55.4	56.9	58.5	59.7	11.6	13.0	15.5	1 56.94	+ 0.06	36.40	0 1 20.60	— 0.09
	Lalande 89. . .	39	57.0	58.4	0.2	1.9	4.5	. .	19.5	22.5	24.1	25.8	27.2	6 42.11	— 0.37	36.40	0 6 5.34	0.09
	Lalande 100 . .	40	37.1	39.8	41.2	53.2	54.4	55.8	57.5	58.8	10.7	12.0	14.3	6 55.89	+ 0.06	36.40	0 6 19.55	0.09
	Radcliffe 316 . .	41	. .	. .	. .	. .	. .	. .	6.8	11.0	13.4	15.7	18.1	58 13.00	— 1 2.13	36.42	0 56 34.45	0.80
	Radclifle 317 . .	42	46.0	49.8	51.7	. .	. .	. .	. .	. .	35.4	37.2	41.2	57 13.55	+ 0.13	36.42	0 56 37.26	0.80
	Radcliffe 319 . .	43	. .	. .	. .	15.9	17.6	20.0	22.1	23.8	. .	. .	. .	57 19.88	0.13	36.42	0 56 43.59	0.81
	Neptune . . .	44	6.0	8.1	9.1	18.9	19.9	21.0	22.2	23.3	33.0	34.1	36.3	11 21.08	+ 0.02	36.42	1 10 44.68	
	Polaris	45	. .	. .	. .	. .	. .	41.0	31.0	13.5	52.0	36.0	1.0	17 39.08	— 4 54.20	36.42	. . . .	— 50.87
	θ Ceti.	46	52.3	54.4	55.5	5.1	6.2	7.5	8.7	9.7	19.3	20.4	22.5	18 7.42	0.00	36.42	1 17 31.00	+ 0.45
	Lacaille 438, (1st *)	47	9.3	10.7	12.4	13.6	16.2	. .	23.6	26.3	27.5	29.0	30.6	26 49.92	0.41	36.42	1 26 13.09	0.33
	Lacaille 438, (2d *)	48	33.9	36.0	37.5	48.2	49.4	50.6	51.9	53.3	4.1	5.4	7.8	26 50.74	— 0.02	36.42	1 26 14.30	+ 0.33
	O. Arg. N. 1812 .	49	43.5	48.8	52.0	16.4	19.4	22.6	25.7	28.2	53.4	56.3	1.6	33 22.54	+ 0.18	36.43	1 32 46.29	— 1.46
	*+0° 17′ . . .	50	41.0	43.1	44.3	. .	. .	. .	. .	. .	7.8	9.1	11.4	40 56.15	+ 0.01	—36.43	1 40 19.73	+ 0.49

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 28, 21.3	— 35.18	+ 0.002	— 0.04	+ 0.01
29, 23.8	— 36.40	— 0.015	+ 0.07	+ 0.01

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Sept. 29 F.	λ Arietis, (1st *).	1	0.9	3.2	4.5	14.8	16.0	17.4	18.7	19.7	30.0	31.2	33.5	51 17.26	+ 0.04	−36.43	1 50 40.87	+ 0.38
	λ Arietis, (2d *).	2	40.7	41.8	43.2	44.9	47.1	..	52.0	54.8	56.1	57.5	58.8	51 19.69	− 0.34	36.43	1 50 42.92	0.38
	γ Andromedæ, (1st *)	3	11.5	14.3	15.7	28.6	29.9	31.6	33.1	34.7	47.7	49.3	51.9	56 31.66	+ 0.07	36.43	1 55 55.30	0.05
	γ Andromedæ, (2d *)	4	..	..	..	..	..	..	13.2	16.6	18.1	19.8	21.3	57 17.80	− 45.01	36.43	1 55 56.36	0.05
	Weisse 1043	5	59.7	2.1	3.3	13.3	14.4	15.6	16.8	18.0	27.8	28.9	31.0	0 15.54	+ 0.03	36.43	1 59 39.14	0.47
	ξ^1 Ceti	6	27.4	29.5	30.6	40.5	41.5	42.5	43.8	44.8	54.7	55.6	57.7	6 42.60	0.02	36.43	2 6 6.19	0.54
30 Y.	φ Aquarii.	7	55.8	57.9	59.0	8.8	9.8	11.0	12.2	13.2	22.9	24.0	26.1	8 10.97	+ 0.02	36.35	23 7 34.64	0.56
	*−39° 9′	8	..	..	..	..	..	..	57.5	0.5	2.0	3.7	5.3	14 1.80	− 43.34	36.35	23 12 42.11	0.53
	*−39° 11′	9	..	..	..	22.9	24.3	26.7	46.5	49.6	51.3	52.7	54.6	14 41.07	33.51	36.35	23 13 31.21	+ 0.53
	*+54° 1′	10	..	..	..	40.5	42.1	44.4	46.4	47.9	..	..	..	21 44.26	0.05	36.36	23 21 7.85	− 0.93
	*+54° 4′	11	18.6	22.2	24.3	..	..	..	..	..	4.6	6.5	10.1	21 44.38	− 0.05	36.36	23 21 7.97	− 0.93
	*−32° 5′	12	34.0	36.5	37.6	48.8	49.9	51.4	52.9	54.1	5.6	6.8	9.0	45 51.41	+ 0.04	36.36	23 45 15.09	+ 0.46
	B. A. C. 8311	13	28.1	30.3	31.6	40.9	42.0	43.2	44.4	45.4	55.0	56.2	58.2	48 43.21	+ 0.01	36.36	23 48 6.86	0.46
	ω Piscium	14	59.0	1.1	2.4	11.8	12.9	14.1	15.2	16.4	26.0	27.0	29.2	53 14.10	0.00	36.36	23 52 37.74	+ 0.41
	Lalande 47307.	15	26.2	29.0	30.4	42.6	43.7	45.3	46.9	48.3	0.4	1.6	4.5	1 45.35	− 0.03	36.37	0 1 8.95	− 0.13
	O. Arg. S. 48	16	56.4	58.6	59.8	9.8	10.8	12.1	13.3	14.5	24.4	25.5	27.6	6 12.07	+ 0.03	36.37	0 5 35.73	+ 0.47
	B. A. C. 27.	17	..	..	..	13.3	14.6	16.2	17.8	19.0	31.3	32.7	35.2	7 22.51	− 6.32	36.37	0 6 39.82	0.32
	B. A. C. 57.	18	27.9	30.0	31.1	40.7	41.8	43.0	44.3	45.2	54.8	55.9	58.0	11 42.97	+ 0.01	36.37	0 11 6.61	0.43
	Lacaille 50.	19	41.9	44.8	46.3	58.8	0.1	1.7	3.2	4.6	17.3	18.5	21.3	15 1.68	0.05	36.37	0 14 25.36	0.27
	Lacaille 61.	20	36.0	38.8	40.2	52.6	53.9	55.5	57.0	58.5	11.1	12.5	15.0	16 55.55	0.05	36.37	0 16 19.23	0.27
	*+0° 26′	21	53.2	55.4	56.5	6.1	7.2	8.3	9.5	10.6	20.1	21.2	23.3	20 8.31	0.01	36.37	0 19 31.95	0.43
	Lacaille 155	22	6.0	8.9	10.5	23.4	24.7	26.5	28.0	29.3	42.3	43.9	46.6	32 26.37	0.06	36.37	0 31 50.06	0.17
	β Ceti	23	23.8	26.0	27.3	37.4	38.4	39.6	40.9	42.0	52.3	53.4	55.5	37 39.69	+ 0.03	36.38	0 37 3.34	0.42
	Weisse 800, (1st *)	†24	36.5	37.6	39.0	40.2	42.3	..	42.5	44.8	46.0	47.3	48.7	47 12.49	− 0.34	36.38	0 46 35.77	0.41
	Weisse 800, (2d *)	25	..	59.4	0.6	10.2	11.3	12.5	13.7	14.8	24.2	25.4	..	47 12.46	+ 0.01	36.38	0 46 36.09	0.41
	σ Sculptoris	26	31.7	34.5	35.7	47.0	48.2	49.7	51.0	52.4	3.8	5.0	7.4	56 49.67	0.04	36.38	0 56 13.33	0.28
	*+9° 50′	27	7.5	9.7	10.8	20.5	21.6	22.7	24.0	25.0	34.9	35.9	38.0	59 22.78	0.00	36.38	0 58 49.40	0.40
	θ Ceti	28	52.3	54.4	55.6	5.2	6.2	7.4	8.7	9.8	19.5	20.6	22.6	18 7.48	+ 0.02	36.38	1 17 31.12	+ 0.44
	Polaris	29	..	..	..	..	..	..	..	..	58.0	41.0	5.0	21 54.67	− 9 9.62	36.38	..	− 50.99
	Weisse 441.	30	52.3	54.4	55.5	5.0	6.0	7.2	8.4	9.4	19.1	20.2	22.2	27 7.25	+ 0.01	36.39	1 26 30.87	+ 0.46
	Weisse 450.	31	..	..	..	33.3	34.4	35.7	36.8	37.8	47.4	48.4	50.5	27 40.54	− 4.97	36.39	1 26 59.18	+ 0.46
	O. Arg. N. 1812	32	43.5	49.1	52.0	17.1	19.8	22.7	25.8	28.8	53.6	56.4	1.7	33 22.77	0.08	36.39	1 32 46.30	− 1.46
	*+5° 8′.	33	21.6	23.8	24.9	34.5	35.6	36.8	38.0	39.0	48.7	49.8	51.8	36 36.77	0.00	36.39	1 36 0.38	+ 0.47
	Weisse 655	34	12.7	14.8	15.9	25.5	26.5	27.8	29.0	30.0	39.8	40.8	42.9	37 27.79	0.00	36.39	1 36 51.40	0.47
	*+10° 13′	35	23.7	25.8	27.0	36.8	37.8	39.0	40.2	41.4	51.0	52.0	54.1	40 38.98	0.00	36.39	1 40 2.59	0.46
	Weisse 713	36	..	..	..	15.6	16.7	18.8	34.2	36.8	38.0	39.2	40.6	41 29.99	26.43	36.39	1 40 27.17	0.46
	β Arietis.	37	47.6	49.9	51.0	1.3	2.4	3.6	4.8	6.1	16.3	17.5	19.6	48 3.65	− 0.01	36.39	1 47 27.25	0.43
Oct. 1 F.	*+14° 21′	†38	15.2	18.0	19.2	28.6	29.7	31.0	32.5	33.8	..	..	..	58 26.00	+ 5.15	35.54	22 57 55.61	0.38
	α Pegasi	39	..	..	..	4.6	5.7	7.8	23.5	26.0	27.3	28.6	29.8	59 19.16	− 26.86	35.54	22 58 16.76	0.37
	*−9° 19′	40	10.4	12.6	13.7	..	..	..	..	..	37.8	39.9	40.9	14 25.88	+ 0.01	35.55	23 13 50.34	+ 0.57
	12 Andromedæ	41	..	..	..	..	..	..	51.0	54.0	55.5	57.1	58.7	15 55.26	+ 42.36	35.55	23 14 37.35	− 0.14
	Weisse 419.	42	..	..	..	24.3	25.3	26.4	27.7	28.8	38.5	39.5	41.6	22 31.51	− 4.99	35.55	23 21 50.97	+ 0.45
	ω Piscium	43	58.2	0.3	1.4	11.0	12.1	13.4	14.5	15.7	25.4	26.4	28.4	53 13.35	+ 0.01	35.56	23 52 37.80	+ 0.41
	B. A. C. 8338	44	12.2	16.8	19.0	39.0	41.4	43.7	46.2	48.5	8.7	10.7	15.1	54 43.75	+ 0.02	35.56	23 54 8.21	− 1.50
	Lacaille 9766	45	..	..	..	33.0	34.1	35.3	36.8	38.0	48.9	50.0	52.4	6 41.06	− 5.60	35.56	0 5 59.90	+ 0.43
	*−17° 58′	46	..	..	..	..	..	..	..	..	22.7	23.9	25.9	7 24.17	13.93	35.56	0 6 34.68	0.46
	*−17° 58′	47	..	..	..	..	..	..	43.4	46.0	47.2	48.5	49.7	7 46.96	− 35.35	35.56	0 6 36.05	0.46
	*− 0° 28′	48	44.2	46.2	47.2	57.0	58.0	59.2	0.3	1.5	11.0	12.0	14.2	11 59.16	+ 0.01	35.56	0 11 23.61	+ 0.43
	Radcliffe 73	49	..	..	..	10.2	11.8	14.6	35.9	39.3	41.0	42.7	44.4	15 29.99	− 36.28	35.57	0 14 18.14	− 0.32
	Lacaille 155	50	5.5	8.1	9.6	22.6	23.9	25.6	27.3	28.6	41.7	43.2	45.9	32 25.64	+ 0.01	−35.57	0 31 50.08	+ 0.17

24. Faint.
38. Very faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Sept. 30, 0.9	− 36.38	− 0.015	− 0.05	+ 0.01

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 1	Weisse 563	1	21.2	23.3	24.5	34.1	35.1	36.3	37.4	38.5	48.1	49.2	51.3	34 36.27	+ 0.01	−35.57	0 34 0.71	+ 0.43
F.	B. A. C. 174	2	. .	. .	. .	10.8	13.2	14.4	15.7	16.8	. .	. .	. .	35 14.18	− 33.77	35.57	0 34 4.84	+ 0.43
	B. A. C. 290	3	48.1	51.6	53.3	9.6	11.1	13.3	15.5	17.1	33.1	35.1	38.4	57 13.29	+ 0.02	35.58	0 56 37.73	− 0.59
	Neptune	4	52.8	55.0	56.0	5.9	6.9	8.0	9.2	10.2	19.8	21.0	23.0	11 7.98	+ 0.01	35.58	1 10 32.41	
	Polaris	5	. .	. .	. .	. .	54.0	44.0	33.0	15.0	. .	. .	. .	13 6.50	− 22.19	35.58	. . . . .	− 51.08
	O. Arg. S. 850, (1st *)	6	42.5	43.8	45.5	46.7	48.6	. .	51.9	54.5	55.7	57.0	58.2	22 20.44	− 0.36	35.58	1 21 44.50	+ 0.39
	O. Arg. S. 850, (2d *)	7	5.1	7.2	8.4	18.7	19.6	21.0	22.3	23.2	33.6	34.6	36.6	22 20.94	+ 0.01	35.58	1 21 45.37	0.39
	η Piscium	8	. .	. .	. .	. .	. .	. .	38.2	40.7	41.9	43.2	44.5	25 41.70	− 34.77	35.59	1 24 31.34	0.41
	B. A. C. 471	9	23.6	25.8	26.8	36.6	37.6	38.8	40.0	41.1	50.8	51.7	53.8	28 38.78	+ 0.01	35.59	1 28 3.20	0.44
	B. A. C. 503	10	57.2	59.9	1.1	13.3	14.8	16.1	17.5	19.0	31.0	32.4	35.0	33 16.12	0.01	35.59	1 32 40.54	0.14
	*+2° 43′	11	31.7	33.7	34.7	44.3	45.4	46.7	47.8	48.8	58.4	59.6	1.7	39 46.62	+ 0.01	35.59	1 39 11.04	0.46
	β Arietis	12	. .	. .	. .	0.5	1.6	3.0	4.2	5.3	15.6	16.7	18.9	48 8.22	− 5.29	35.59	1 47 27.34	0.42
	λ Arietis, (1st *)	13	0.2	2.4	3.7	14.1	15.2	16.5	17.7	19.0	. .	. .	. .	51 11.10	+ 5.42	35.59	1 50 40.93	0.41
	λ Arietis, (2d *)	14	. .	. .	. .	31.4	32.5	34.7	51.3	54.0	. .	56.6	58.0	51 45.50	− 27.01	35.59	1 50 42.90	0.41
4	λ Aquarii	15	9.2	11.2	12.4	22.0	23.0	24.4	25.6	26.6	36.3	37.3	39.4	46 24.31	+ 0.03	35.11	22 45 49.23	0.68
	*−9° 19′	16	6.3	. .	10.0	19.5	20.5	21.6	22.8	24.0	33.7	. .	37.0	14 21.71	0.04	35.12	23 13 46.63	0.57
	4 Ceti	17	54.0	56.1	57.3	7.0	8.0	9.2	10.3	11.3	21.0	22.1	24.3	1 9.15	+ 0.02	35.12	0 0 34.05	+ 0.45
	Lalande 202	18	. .	. .	. .	43.8	45.0	46.5	48.1	49.5	1.7	3.0	5.6	9 52.90	− 6.43	35.12	0 9 11.35	− 0.13
	O. Arg. N. 362	19	53.0	54.9	57.0	58.9	2.0	. .	33.9	37.7	39.6	41.4	43.4	20 18.18	0.72	35.12	0 19 42.34	0.53
	Groombridge 64	20	22.6	26.1	28.0	42.4	44.1	45.9	47.8	49.3	4.0	5.6	8.9	20 45.88	− 0.19	35.12	0 20 10.57	− 0.53
	Weisse 511	21	40.5	42.7	43.9	53.4	54.5	55.7	56.7	57.8	7.5	8.5	10.6	31 55.62	0.00	35.13	0 31 20.49	+ 0.39
	β Ceti	22	22.5	24.7	26.0	36.0	37.0	38.4	39.6	40.8	51.0	52.1	54.3	37 38.40	+ 0.07	35.13	0 37 3.34	0.41
	*+1° 10′	23	57.4	58.6	0.0	1.2	3.3	. .	3.3	5.6	7.0	8.1	9.4	47 33.39	− 0.34	35.13	0 46 57.92	0.40
	*+1° 16′	24	51.5	52.6	53.8	55.0	56.0	. .	23.9	26.4	27.8	29.0	30.2	48 10.62	16.83	35.13	0 47 18.66	0.40
	ε Piscium	25	31.5	33.7	34.8	44.4	45.4	46.6	47.7	48.9	58.7	59.7	1.7	56 46.65	0.01	35.13	0 56 11.51	0.32
	Weisse 1078	26	59.1	1.3	2.4	12.2	13.2	14.4	15.7	16.8	26.4	27.6	29.6	2 14.43	0.02	35.13	1 1 39.28	+ 0.38
	Neptune	27	34.2	36.2	37.4	47.1	48.1	49.3	50.5	51.6	1.1	2.2	4.3	10 49.27	0.01	35.13	1 10 14.13	
	Polaris	28	. .	. .	. .	. .	0.0	52.0	40.0	22.0	. .	. .	. .	13 13.50	29.35	35.13	. . . . .	− 51.36
	*+6° 17′	29	. .	. .	. .	. .	. .	. .	27.7	29.8	31.0	32.3	33.5	22 30.86	33.87	35.14	1 21 21.85	+ 0.40
	Weisse (2) 575	30	21.6	23.9	25.1	35.0	36.1	37.3	38.5	39.7	49.6	50.8	52.9	27 37.32	− 0.04	35.14	1 27 2.14	0.37
	Lacaille 477	31	0.6	3.2	4.5	16.1	17.2	18.5	20.0	21.2	32.9	34.0	36.4	33 18.60	+ 0.12	35.14	1 32 43.58	0.19
	Weisse 655	32	11.6	13.8	14.9	24.4	25.4	26.6	27.8	29.0	38.5	39.6	41.8	37 26.67	− 0.01	35.14	1 36 51.52	0.42
	B. A. C. 539	33	46.4	49.4	50.6	0.2	1.2	2.5	3.7	4.8	14.4	15.5	17.6	40 2.39	+ 0.03	35.14	1 39 27.28	0.42
	57 Ceti	34	57.9	0.0	1.2	11.6	12.8	14.0	15.2	16.2	26.8	28.0	30.2	54 13.99	+ 0.08	35.14	1 53 38.93	0.33
	γ Andromedæ, (1st *)	35	43.0	44.5	46.5	48.1	50.9	. .	11.3	14.5	16.1	17.8	19.4	56 31.21	− 0.60	35.14	1 55 55.47	0.11
	γ Andromedæ, (2d *)	36	11.5	14.2	15.8	28.6	30.1	31.7	33.3	34.6	47.6	49.0	51.9	56 31.66	− 0.14	35.14	1 55 56.38	0.11
	Weisse 231	37	59.3	1.3	2.5	12.4	13.5	14.7	15.8	16.9	26.7	27.8	29.8	16 14.61	+ 0.04	35.15	2 15 39.50	0.43
	γ Ceti	38	53.5	55.7	56.8	6.3	7.3	8.6	9.7	10.7	20.5	21.5	23.6	37 8.56	0.00	35.15	2 36 33.41	0.53
5	*−9° 16′	39	10.1	12.1	13.2	23.0	24.0	25.3	26.5	27.6	37.4	38.4	40.5	14 25.28	+ 0.05	35.24	23 13 50.09	0.58
Y.	θ Piscium	40	42.1	44.3	45.4	55.0	56.1	57.3	58.5	59.6	9.2	10.4	12.4	21 57.30	− 0.01	35.24	23 21 22.05	0.45
	*+34° 11′	41	27.9	30.6	31.8	43.6	44.8	46.3	47.7	48.8	0.6	1.8	4.4	46 46.21	0.16	35.25	23 46 10.80	0.18
	ω Piscium	42	57.9	0.0	1.1	10.8	11.8	13.1	14.3	15.4	25.0	26.0	28.1	53 13.05	− 0.01	35.25	23 52 37.79	0.41
	Weisse 1230	43	6.3	8.4	9.5	19.1	20.1	21.3	22.5	23.5	33.0	34.2	36.3	1 22.29	+ 0.02	35.25	0 0 47.06	0.54
	Weisse 1240	44	. .	. .	. .	52.7	53.8	55.8	11.0	13.5	14.8	16.0	17.2	2 6.85	− 26.00	35.25	0 1 5.60	0.54
	*−17° 54′	45	32.3	33.6	35.0	36.3	38.7	. .	41.6	44.2	45.5	46.8	48.0	7 10.20	− 0.28	35.25	0 6 34.67	0.46
	*−17° 57′	46	55.3	57.5	58.6	8.6	9.8	11.0	12.3	13.4	23.6	24.7	26.8	7 11.05	+ 0.09	35.25	0 6 35.89	+ 0.46
	Weisse (2) 256	47	36.5	39.0	40.4	52.3	53.5	55.0	56.4	57.6	. .	. .	. .	10 48.84	+ 5.96	35.25	0 10 19.55	− 0.06
	Lalande 251	48	2.0	4.6	6.1	18.0	19.2	20.8	22.2	23.5	35.4	36.8	39.2	11 20.71	− 0.17	35.25	0 10 45.29	0.06
	Lalande 975	49	0.7	3.5	4.8	16.6	17.7	19.4	20.7	22.0	34.0	35.3	37.9	32 19.33	− 0.17	35.26	0 31 43.90	− 0.04
	Weisse 563	50	20.8	23.0	24.0	33.8	34.8	36.0	37.1	38.2	47.8	48.9	51.0	34 35.95	+ 0.03	−35.26	0 34 0.72	+ 0.57

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Oct. 1, 0.5	− 35.57	− 0.017	0.00	+ 0.01
4, 0.7	− 35.13	− 0.011	− 0.17	+ 0.01

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 5	B. A. C. 174 . .	1	4.2	5.3	6.8	8.0	10.2	. .	10.5	12.8	14.2	15.4	16.6	34 40.40	— 0.32	—35.26	0 34 4.82	+ 0.57
Y.	Lalande 1492 . .	2	22.5	25.4	26.8	39.1	40.3	41.9	43.4	44.7	57.0	58.3	0.9	47 41.85	0.19	35.26	0 47 6.40	— 0.07
	Lalande 1504 . .	3	. .	. .	. .	17.8	19.0	21.7	41.2	44.3	45.8	47.5	48.5	48 35.72	33.40	35.26	0 47 27.06	0.07
	*+38° 27′ . . .	4	3.5	6.0	7.7	19.7	21.0	22.7	24.2	25.7	37.9	39.1	41.9	49 22.67	0.19	35.26	0 48 47.22	— 0.07
	*—24° 31′ . . .	5	. .	. .	. .	. .	. .	. .	45.4	48.0	49.4	50.9	52.2	57 49.18	— 36.86	35.26	0 56 37.06	+ 0.33
	Rumker, N. F., 538	6	23.3	24.5	26.6	36.2	37.2	38.4	39.6	40.6	50.3	51.4	53.4	1 38.32	0.00	35.26	1 1 3.06	+ 0.39
	Polaris	7	57.0	48.0	. .	. .	. .	. .	. .	. .	. .	. .	. .	4 22.50	+ 8 21.98	35.26	. . . .	— 51.53
	Rumker, N. F., 585	8	19.0	20.2	21.8	22.9	25.1	39.8	41.9	43.0	. .	. .	. .	12 29.21	+ 25.64	35.26	1 12 19.59	+ 0.39
	Weisse 188, (1st *).	9	. .	. .	. .	54.4	55.3	56.5	57.7	58.8	. .	. .	. .	13 56.54	— 0.05	35.26	1 13 21.23	0.35
	Weisse 188, (2d *).	10	41.5	43.6	44.8	. .	. .	. .	. .	. .	9.1	10.2	12.3	13 56.92	0.05	35.26	1 13 21.61	0.35
	Lalande 2603 . .	11	0.5	3.2	4.7	17.0	18.2	19.7	21.4	22.6	35.0	36.4	39.2	20 19.81	0.19	35.26	1 19 44.36	0.01
	B. A. C. 440 . .	12	53.6	55.8	56.9	6.5	7.6	8.8	10.0	11.1	20.9	21.8	23.9	22 8.81	0.02	35.26	1 21 33.53	0.39
	Weisse 348. . .	13	37.4	38.6	40.0	41.3	43.4	. .	43.8	46.4	47.5	48.9	50.2	22 13.75	0.37	35.26	1 21 38.12	0.39
	Weisse (2) 575 .	14	21.7	24.0	25.1	35.0	36.2	37.4	38.6	39.7	49.6	50.8	53.0	27 37.37	— 0.06	35.27	1 27 2.04	0.36
	Weisse 582. . .	15	9.4	11.6	12.7	22.2	23.3	24.4	25.6	26.7	36.4	37.5	39.6	34 24.49	+ 0.02	35.27	1 33 49.24	0.41
	4 Arietis	16	27.3	29.6	30.6	40.7	41.8	43.0	44.2	45.3	55.3	56.3	58.5	41 42.96	— 0.06	35.27	1 41 7.63	0.38
	β Arietis	17	46.6	49.0	50.1	0.3	1.4	2.7	3.9	5.0	15.3	16.6	18.7	48 2.69	— 0.08	35.27	1 47 27.34	0.36
	57 Ceti	18	57.9	0.2	1.4	11.6	12.7	13.9	15.3	16.5	26.8	27.9	30.1	54 14.03	+ 0.11	35.27	1 53 38.87	0.32
	Weisse 1043 . .	19	58.9	0.2	2.4	12.0	13.1	14.3	15.5	16.8	26.7	27.8	29.8	0 14.32	— 0.05	35.27	1 59 39.00	0.43
	Weisse 44 . . .	20	20.4	22.5	23.7	33.4	34.4	35.6	36.8	37.9	47.7	48.8	51.0	5 35.65	0.02	35.27	2 5 0.36	0.46
	*+8° 16′ . . .	21	5.5	6.8	8.0	9.3	11.4	. .	11.9	14.5	15.7	16.9	18.2	5 41.82	— 0.37	35.27	2 5 6.18	0.46
	O. Arg. S. 1735 .	22	46.4	48.7	50.0	1.2	2.4	3.8	5.3	6.5	17.6	18.8	21.3	35 3.82	+ 0.17	35.28	2 34 28.71	0.19
	γ Ceti	23	53.7	55.8	56.8	6.6	7.5	8.7	10.0	10.9	20.6	21.7	23.7	37 8.73	0.00	35.28	2 36 33.45	+ 0.52
6	Polaris, S. P. . .	24	. .	. .	. .	7.0	49.0	40.0	32.0	12.0	. .	. .	. .	12 40.00	4.73	35.43	. . . .	— 51.63
	δ Ophiuchi . . .	25	49.9	52.0	53.1	2.7	3.8	4.9	6.2	7.3	16.8	18.0	20.0	8 4.97	0.02	35.46	. . . .	+ 2.53
F.	Radcliffe 65 . .	26	51.2	54.2	55.6	9.2	10.5	12.2	13.9	15.5	28.7	30.0	33.1	14 12.19	0.01	35.78	0 13 36.42	— 0.33
	β Ceti.	27	23.2	25.4	26.6	36.8	37.8	38.9	40.3	41.4	51.6	52.8	54.8	37 39.05	0.01	35.79	. . . .	+ 0.40
	Neptune . . .	28	22.5	24.6	25.6	35.4	36.4	37.5	38.8	39.8	49.4	50.6	52.5	10 37.55	0.01	35.79	1 10 1.76	
	Polaris	29	. .	. .	. .	17.5	55.0	42.0	31.5	17.5	. .	. .	. .	13 44.70	0.43	35.80	. . . .	— 51.74
	Weisse 559. . .	30	11.2	13.4	14.5	24.1	25.1	26.2	27.5	28.4	38.1	39.1	41.3	33 26.26	+ 0.01	35.81	1 32 50.46	+ 0.40
	*+0° 17′ . . .	31	. .	. .	. .	7.6	8.6	10.7	26.0	. .	29.8	31.0	32.3	41 20.86	— 25.05	35.81	1 40 20.00	0.40
	α Arietis	32	10.0	12.2	13.4	24.1	25.1	26.5	27 7	28.9	39.4	40.5	42.6	0 26.40	+ 0.01	35.81	. . . .	0.37
	O. Arg. S. 1388 .	33	32.6	35.0	36.4	47.3	48.5	50.0	51.3	52.5	3.6	4.9	6.2	6 49.85	0.01	35.82	2 6 14.04	0.23
	O. Arg. S. 1404 .	34	55.7	58.1	59.3	10.5	11.7	13.1	14.4	15.6	26.7	27.8	30.2	8 13.01	0.01	35.82	2 7 37.20	0.23
8	O. Arg. S. 22712 .	35	6.6	8.8	10.0	20.4	21.5	22.8	24.0	25.2	35.7	36.9	39.1	9 22.82	+ 0.01	26.33	23 8 56.50	+ 0.65
	12 Andromedæ . .	36	28.6	30.0	31.8	33.4	36.0	. .	51.6	54.6	56.0	57.7	59.4	15 13.91	— 0.43	26.33	23 14 47.15	— 0.13
	θ Piscium . . .	37	43.3	45.3	46.4	56.0	57.0	58.3	59.4	0.5	10.3	11.3	13.3	21 58.28	+ 0.01	26.33	. . . .	+ 0.46
11	Moon I	38	5.2	7.5	8.8	19.5	20.6	21.9	23.2	24.4	35.0	36.2	38.4	55 21.88	0.07	26.06	18 54 55.89	
	π Sagittarii . . .	39	9.8	12.0	13.2	23.3	24.6	25.9	27.2	28.3	38.6	39.8	42.0	2 25.88	0.07	26.06	19 1 59.89	2.05
	d Sagittarii . . .	40	9.8	12.0	13.2	23.3	24.4	25.7	27.0	28.2	38.3	39.3	41.6	10 25.71	0.07	26.06	. . . .	1.89
	*—28° 42′ . . .	41	. .	9.7	11.1	22.0	23.2	24.6	26.0	27.3	38.0	39.2	. .	41 24.57	0.10	26.08	19 40 58.59	1.94
	Lacaille 8340 . .	42	58.2	1.0	2.2	14.1	15.3	16.9	18.4	19.5	31.6	32.9	35.5	59 16.87	0.12	26.08	19 58 50.91	1.95
	*—17° 17′ . . .	43	4.0	6.2	7.6	17.7	18.7	19.8	20.8	22.8	. .	. .	. .	7 14.70	5.27	26.08	20 6 53.89	1.62
	Weisse 284. . .	44	19.1	21.2	22.5	32.3	33.4	34.8	35.9	36.9	46.8	47.9	50.0	13 34.62	+ 0.05	26.09	20 13 8.58	1.54
	Weisse 841. . .	45	38.3	39.6	41.0	42.3	44.3	. .	44.8	47.3	48.5	49.7	51.0	34 14.68	— 0.32	26.09	20 33 48.27	1.34
	Weisse 846. . .	46	8.4	10.4	11.6	21.4	22.4	23.5	24.7	26.0	35.6	36.7	38.7	34 23.58	+ 0.03	26.09	20 33 57.52	1.34
	*—14° 0′ . . .	47	16.0	18.2	19.4	29.3	30.4	31.5	32.8	33.8	43.9	45.1	47.0	41 31.58	+ 0.05	26.10	20 41 5.53	1.39
	μ Aquarii. . . .	48	48.0	50.1	51.4	0.9	2.0	3.3	4.4	5.4	15.2	16.2	18.3	46 3.20	— 0.02	26.10	. . . .	1.29
	*—25° 5′ . . .	49	. .	. .	. .	6.0	7.0	8.3	9.6	10.7	21.5	22.6	24.9	34 13.82	— 5.40	26.11	21 33 42.31	1.20
	ζ Pegasi	50	8.9	11.2	12.4	22.1	23.0	24.3	25.6	26.6	. .	. .	. .	35 19.26	+ 5.03	—26.13	. . . .	+ 0.56

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Oct. 5, 0.9	— 35.26	— 0.011	— 0.25	+ 0.01
6, 1.3	— 35.80	— 0.020	0.00	+ 0.01
8, 23.3	— 26.33	0.000	0.00	+ 0.01
11, 20.9	— 26.10	— 0.020	— 0.15	+ 0.01

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Oct. 13	*−27° 4′ . . .	1	28.9	31.4	32.7	43.4	44.6	45.9	47.1	48.3	. .	. .	. .	48 40.29	+ 5.68	−26.82	19 48 19.15	+ 1.91
F.	τ Aquilæ . . .	2	57.8	58.7	0.9	10.8	11.7	12.7	14.1	15.2	24.8	25.9	28.0	58 12.78	− 0.01	26.83	. . . .	1.28
	*−17° 17′ . . .	3	5.2	7.4	8.5	18.6	19.7	20.7	22.1	23.2	33.3	35.0	36.7	6 20.95	+ 0.06	26.83	20 5 54.18	1.63
	Weisse 841 . .	4	39.3	40.5	41.9	43.0	45.1	. .	45.6	48.0	49.2	50.3	51.5	34 15.44	− 0.32	26.84	20 33 48.28	1.35
	Weisse 846 . .	5	9.3	11.4	12.6	. .	. .	. .	. .	. .	36.4	37.2	39.5	34 24.40	+ 0.03	26.84	20 33 57.59	1.35
	Weisse 851 . .	6	. .	. .	. .	30.4	31.4	32.6	33.8	34.9	. .	. .	. .	34 32.62	0.03	26.84	20 34 5.81	1.35
	*−14° 0′ . . .	7	18.6	20.8	22.0	31.8	32.8	34.0	35.6	36.3	46.2	47.6	49.5	40 34.11	0.05	26.84	20 40 7.32	1.40
	Moon I. . . .	8	8.0	10.2	11.2	21.7	22.8	24.0	25.4	26.5	37.0	38.1	40.2	45 24.10	+ 0.07	26.84	20 44 57.33	
	θ Capricorni . . .	9	. .	. .	. .	26.6	27.7	28.8	30.2	31.2	41.3	42.5	44.6	57 34.11	− 5.16	26.84	20 57 2.11	1.34
	ν Aquarii . . .	10	40.7	42.9	44.0	54.0	54.9	56.2	57.4	58.4	8.3	9.5	11.3	2 56.15	+ 0.05	26.85	21 2 29.35	1.25
	1 Pegasi	11	14.9	17.0	18.2	28.5	29.5	30.8	32.0	33.2	43.5	44.5	46.7	16 30.80	0.04	26.85	. . . .	0.76
16	ξ Aquarii . . .	12	. .	. .	. .	14.4	15.5	16.8	18.0	19.1	. .	. .	. .	31 16.76	0.16	28.30	21 30 48.62	1.12
Y.	θ Aquarii . . .	13	. .	. .	. .	23.0	24.2	25.4	26.8	27.9	. .	. .	. .	10 25.46	0.16	28.31	22 9 57.31	0.92
	Weisse 300 . . .	14	. .	. .	. .	18.9	20.0	21.3	22.5	23.7	. .	. .	. .	16 21.28	+ 0.18	28.31	22 15 53.15	+ 0.89
	β Lacertæ . . .	15	. .	. .	. .	52.3	54.0	56.2	57.8	59.7	. .	. .	. .	18 56.00	− 0.27	28.31	22 18 27.42	− 0.30
	*−10° 37′ . . .	16	. .	. .	. .	36.2	37.4	38.5	39.7	41.0	. .	. .	. .	22 38.56	+ 0.17	28.31	22 22 10.42	+ 0.85
	α Pegasi	17	. .	. .	. .	42.5	43.8	45.1	46.3	47.5	. .	. .	. .	58 45.04	0.02	28.32	22 58 16.74	0.48
	φ Aquarii . . .	18	. .	. .	. .	0.5	1.6	2.9	4.1	5.3	. .	. .	. .	8 2.88	0.14	28.33	23 7 34.69	0.63
	Moon I. . . .	19	. .	. .	. .	1.4	2.6	3.8	5.2	6.3	. .	. .	. .	13 3.86	0.17	28.33	23 12 35.70	
	θ Piscium . . .	20	. .	. .	. .	47.7	49.0	50.2	51.5	52.7	. .	. .	. .	21 50.22	+ 0.07	28.33	23 21 21.96	+ 0.51
	γ Cephei	21	. .	. .	. .	25.4	30.8	36.2	41.4	46.2	. .	. .	. .	34 36.00	− 1.05	28.33	. . . .	− 4.82
	ω Piscium . . .	22	. .	. .	. .	3.7	4.9	6.0	7.3	8.5	. .	. .	. .	53 6.08	+ 0.07	28.34	23 52 37.81	+ 0.43
20	O. Arg. S. 20973 .	23	22.3	24.0	25.5	36.0	37.3	38.6	39.9	41.0	51.4	52.7	54.6	49 38.48	+ 0.01	14.29	20 49 24.20	1.59
	ζ Cygni	24	35.3	36.6	38.0	39.4	40.8	. .	12.4	14.7	16.2	17.8	19.0	7 57.02	− 19.22	14.30	21 7 23.50	0.75
	O. Arg. S. 21534 .	25	27.3	29.2	30.7	41.2	42.5	43.7	45.1	46.3	56.8	58.0	0.0	31 43.71	+ 0.01	14.30	21 31 29.42	1.32
	*−25° 0′ . . .	26	40.0	42.0	43.2	53.8	55.0	56.4	57.8	59.0	9.5	10.8	12.7	33 56.38	+ 0.01	14.30	21 33 42.09	1.31
	Weisse 965 . .	27	58.2	59.8	1.0	11.1	12.3	13.5	14.6	15.7	25.4	26.5	28.4	41 13.32	− 0.02	14.31	21 40 58.99	1.14
	μ Capricorni . . .	28	10.3	12.2	13.3	23.2	24.3	25.7	26.9	28.0	37.7	38.9	40.7	46 25.56	0.03	14.31	21 46 11.22	+ 1.10
	ε Cephei	29	3.8	6.7	8.7	26.3	28.4	30.5	32.4	34.5	51.5	53.4	57.0	10 30.29	0.37	14.31	22 10 15.61	− 0.58
	Weisse 300 . .	30	52.5	54.3	55.4	5.3	6.3	7.5	8.8	9.9	19.6	21.7	22.6	16 7.63	0.02	14.32	22 15 53.29	+ 0.96
	Weisse 449 . .	31	8.7	10.4	11.7	21.5	22.6	24.0	25.1	26.2	35.7	36.9	38.7	22 23.77	− 0.03	14.32	22 22 9.42	0.91
	*−10° 37′ . . .	32	47.7	48.9	50.4	51.7	54.1	. .	55.0	57.0	58.4	59.7	1.1	22 24.40	+ 0.23	14.32	22 22 10.31	0.91
	*−28° 57′ . . .	33	31.9	34.1	35.4	46.4	47.7	49.1	50.5	51.7	2.3	3.7	5.8	32 48.96	0.03	14.32	22 32 34.67	0.96
	Lacaille 9292 . .	34	0.7	2.9	4.3	17.2	18.4	20.2	21.6	23.0	35.5	37.0	39.4	46 20.02	+ 0.06	14.32	22 46 5.76	0.89
	Lalande 44860 . .	35	. .	. .	. .	12.6	14.0	15.2	16.6	18.1	. .	. .	. .	49 15.30	− 0.06	14.33	22 49 0.91	0.84
	*+36° 48′ . . .	36	23.5	25.6	27.0	38.9	40.3	42.1	43.6	44.9	56.7	58.1	0.2	14 41.90	0.20	14.33	23 14 27.37	0.03
	*+ 5° 42′ . . .	37	28.3	29.9	31.0	40.7	41.8	43.0	44.1	45.4	54.7	55.9	58.0	22 42.98	0.08	14.34	23 22 28.56	0.53
	ι Piscium . . .	38	15.1	16.7	18.0	27.4	28.6	30.0	31.2	32.2	41.6	42.8	44.7	33 29.85	− 0.07	14.34	23 33 15.44	+ 0.51
	Lalande 81 . .	39	21.7	23.4	24.9	26.4	29.5	49.4	51.5	53.0	. .	. .	. .	5 34.98	+ 32.82	14.35	0 5 53.45	− 0.11
	23 Andromedæ . .	40	41.4	43.6	45.3	57.7	59.1	1.0	2.6	4.1	16.3	17.7	20.1	7 0.81	− 0.22	14.35	0 6 46.24	0.16
	Lalande 202 . .	41	. .	. .	. .	22.8	24.5	25.9	27.4	29.0	40.8	42.3	44.5	9 32.15	− 6.51	14.35	0 9 11.29	− 0.10
	Weisse 305 . .	42	53.2	54.5	55.7	56.9	59.4	. .	59.4	1.5	2.8	4.2	5.4	19 29.30	+ 0.19	14.35	0 19 15.14	+ 0.39
	Weisse 308 . .	43	20.5	22.1	23.2	32.7	33.9	35.2	36.4	37.5	46.9	48.1	49.9	19 35.13	− 0.07	14.35	0 19 20.71	0.39
	Weisse 572 . .	44	16.4	18.2	19.4	29.0	30.1	31.3	32.6	33.8	43.2	44.3	46.2	35 31.32	0.08	14.36	0 35 16.88	0.34
	Weisse 969 . .	45	2.6	4.3	5.5	15.0	16.2	17.5	18.6	19.8	29.3	30.4	32.0	56 17.38	0.06	14.36	0 56 2.96	0.33
	*−24° 31′ . . .	46	. .	. .	. .	. .	. .	. .	23.9	26.3	27.8	29.4	30.7	57 27.62	36.33	14.36	0 56 36.93	0.28
	Weisse 162 . .	47	8.0	9.6	10.9	20.5	21.6	22.9	24.2	25.3	34.7	35.9	37.6	12 22.84	0.07	14.37	1 12 8.40	+ 0.31
	Polaris	48	25.0	36.0	24.0	. .	. .	. .	. .	. .	39.0	28.0	40.0	12 32.00	7.64	14.37	. . . .	− 52.22
	*+2° 52′ . . .	49	. .	. .	. .	16.5	17.7	19.3	34.5	36.7	37.9	39.3	40.5	13 30.30	25.70	14.37	1 12 50.23	+ 0.31
	η Piscium . . .	50	30.8	32.5	33.6	43.6	44.7	46.2	47.4	48.4	58.1	59.3	1.0	24 45.96	− 0.10	14.37	1 24 31.49	0.26
	Weisse 709 . .	51	14.5	16.3	17.4	27.0	28.2	29.5	30.8	31.9	41.5	42.6	44.5	40 29.47	+ 0.09	−14.38	1 40 15.18	+ 0.27

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Oct. 13, 21.2	− 26.85	− 0.020	− 0.15	+ 0.01
16, 22.8	− 28.32	− 0.017	− 0.35	+ 0.05
20, 23.6	− 14.34	− 0.018	− 0.17	− 0.06

October 13. Wires of the diaphragm displaced by accident.
16. Wires replaced before observing.
After adjustment. Image west $0^r.06$. Clamp west.
Image east $0^r.11$. Clamp east.
October 20. Mr. Gardner finished inserting a new set of wires.
At 20^h. Image $0^r.00$. Clamp east.
Image west $0^r.44$. Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT.												CORRECTIONS.		Observed R. Ascension.	Reduct'n to 1870.0.
			I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	Inst.	Clock.		
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Oct. 20 Y.	Weisse 52 . . .	1	12.5	14.3	15.4	24.9	26.1	27.3	28.6	29.7	39.0	40.2	42.0	5 27.27	− 0.07	−14.39	2 5 12.81	+ 0.29
	ξ¹ Ceti	2	. .	. .	. .	32.6	33.9	35.7	50.9	53.0	54.4	55.8	57.0	6 46.66	− 25.94	14.39	2 6 6.33	0.28
	O. Arg. S. 1424 .	3	15.0	17.0	18.3	28.7	30.0	31.4	32.7	33.8	44.3	45.4	47.4	9 31.27	+ 0.01	14.39	2 9 16.89	0.13
	Moon II . . .	4	34.0	35.6	36.9	46.7	47.9	49.2	50.4	51.5	1.1	2.3	4.1	18 49.06	− 0.08	14.39	2 18 34.59	
	ξ² Ceti	5	. .	. .	. .	26.6	27.6	29.0	30.2	31.4	. .	. .	. .	21 28.96	0.14	14.39	2 21 14.43	+ 0.30
26	13 Andromedæ . .	6	36.0	38.3	39.9	52.7	54.4	56.0	57.8	59.0	11.7	13.3	15.8	20 55.90	0.50	3.65	23 20 51.75	− 0.07
	Weisse (2) 457. .	7	5.7	7.9	9.2	21.6	23.0	24.8	26.3	27.7	39.7	41.2	43.6	22 24.61	0.45	3.65	23 22 20.51	+ 0.03
	ι Piscium . . .	8	4.3	6.0	7.2	16.6	17.9	19.2	20.4	21.5	30.8	32.1	33.9	33 19.08	0.10	3.65	23 33 15.33	+ 0.54
	*+57° 36′ . . .	9	. .	. .	. .	32.4	34.5	36.8	38.9	41.0	. .	. .	. .	58 36.72	0.95	3.65	23 58 32.12	− 0.91
	*+57° 36′ . . .	10	. .	. .	. .	5.4	7.4	9.7	11.8	14.1	. .	. .	. .	59 9.68	0.95	3.65	23 59 5.08	0.91
	*+57° 40′ . . .	11	. .	. .	. .	32.3	34.4	36.8	39.1	41.0	. .	. .	. .	59 36.72	0.95	3.65	23 59 32.12	0.92
	Lalande 89. . .	12	50.7	52.9	54.4	6.4	7.8	9.5	10.9	12.2	24.0	25.4	27.7	6 9.26	− 0.43	3.64	0 6 5.19	− 0.03
	O. Arg. S. 87 . .	13	. .	. .	. .	34.7	35.9	37.4	38.5	39.7	. .	. .	. .	9 37.24	0.00	3.64	0 9 33.60	+ 0.40
	O. Arg. S. 90 . .	14	6.9	8.3	9.5	10.8	13.3	. .	15.5	17.8	19.0	20.4	21.8	9 44.33	+ 0.33	3.64	0 9 41.02	0.40
	Weisse 572. . .	15	5.7	7.6	8.7	18.3	19.4	20.7	22.0	23.0	32.5	33.6	35.4	35 20.63	− 0.11	3.64	0 35 16.88	0.40
	β Ceti	16	51.1	53.2	54.4	4.5	5.6	7.0	8.3	9.5	19.4	20.5	22.5	37 6.91	+ 0.09	3.64	0 37 3.36	+ 0.39
	Lalande 1504 . .	17	51.8	53.9	55.4	7.6	9.0	10.7	12.3	13.7	25.7	27.1	29.4	47 10.60	− 0.44	3.64	0 47 6.52	− 0.11
	B. A. C. 290 . .	18	17.2	20.0	22.1	38.1	39.8	42.2	44.0	46.0	1.8	3.6	6.8	56 41.96	0.74	3.64	0 56 37.58	0.68
	Polaris	19	. .	. .	. .	0.0	46.0	40.0	25.0	14.0	. .	. .	. .	12 37.00	− 23.79	3.64	. . . . .	− 51.94
	θ Ceti	20	20.0	21.7	22.9	32.5	33.7	35.0	36.3	37.3	56.8	52.0	59.8	17 34.91	+ 0.03	3.64	1 17 31.30	+ 0.29
	B. A. C. 469 . .	21	35.3	37.1	38.4	48.5	49.7	51.0	52.2	53.4	3.2	4.4	6.3	27 50.86	+ 0.21	3.64	1 27 47.01	0.20
	Weisse 601. . .	22	49.4	51.2	52.3	1.8	2.9	4.2	5.3	6.5	15.9	17.2	18.8	34 4.14	− 0.08	3.64	1 34 0.42	0.27
	Weisse 601. . .	23	. .	. .	. .	24.8	26.0	27.2	28.5	29.6	39.0	40.0	42.0	34 32.14	5.06	3.64	1 34 23.44	0.27
	4 Arietis	24	56.2	58.0	59.2	9.2	10.3	11.5	12.7	14.0	23.8	25.0	26.9	41 11.53	− 0.20	3.64	1 41 7.69	+ 0.21
	B. A. C. 619 . .	25	44.7	47.1	48.6	1.4	2.9	4.7	6.4	7.6	20.1	21.6	24.0	54 4.46	+ 0.34	3.64	1 54 1.16	− 0.21
	*−41° 21′ . . .	26	45.6	47.9	49.3	2.0	3.4	5.3	6.9	8.6	20.7	22.3	24.8	55 5.16	0.34	3.64	1 55 1.86	− 0.21
	*−29° 35′ . . .	27	36.2	37.4	38.9	40.2	43.1	. .	. .	54.3	55.8	57.5	58.9	6 13.59	4.34	3.63	2 6 14.30	+ 0.01
	*−29° 36′ . . .	28	12.0	14.0	15.3	26.4	27.7	29.0	30.4	31.8	42.4	43.7	45.7	6 28.95	+ 0.20	3.63	2 6 25.52	0.01
	γ Ceti	†29	22.7	24.5	25.5	34.9	36.3	37.6	38.7	39.7	49.1	50.6	52.0	36 37.42	− 0.08	3.63	2 36 33.71	0.24
29	Weisse 423. . .	30	57.0	59.0	0.3	9.6	10.8	12.0	13.3	14.5	24.3	25.5	27.2	22 12.14	0.06	5.00	23 22 7.08	0.71
	ι Piscium . . .	31	5.7	7.4	8.6	18.0	19.0	20.2	21.6	22.6	32.2	33.5	35.2	33 20.36	0.10	5.00	23 33 15.26	0.56
	Lacaille 9 . . .	32	56.7	58.8	0.2	10.6	11.9	13.3	14.7	16.0	26.7	28.0	30.0	7 13.35	0.05	5.01	0 7 8.29	0.50
	B. A. C. 47 . .	33	49.5	51.3	52.5	1.9	3.0	4.3	5.5	6.6	16.1	17.3	18.9	10 4.26	0.09	5.01	0 9 59.16	0.46
	*+4° 1′. . . .	34	28.0	29.7	30.8	40.1	41.3	42.6	43.9	45.0	54.5	55.7	57.4	35 42.64	0.10	5.01	0 35 37.53	0.37
	β Ceti	35	52.9	54.7	55.9	5.8	7.0	8.3	9.7	10.9	21.0	22.2	24.0	37 8.40	0.06	5.01	0 37 3.33	0.40
	*+9° 51′ . . .	36	51.9	53.8	54.9	4.4	5.6	6.8	8.0	9.2	18.9	20.0	21.8	40 6.85	0.11	5.01	0 40 1.73	0.32
	O. Arg. S. 596. .	37	51.0	52.8	53.9	5.0	6.3	7.7	9.1	10.5	20.4	22.6	24.7	57 7.64	0.05	5.01	0 57 2.58	+ 0.25
	μ Cassiopeæ. . .	†38	. .	. .	. .	40.3	42.2	44.0	46.3	48.4	4.4	6.6	9.5	59 52.71	8.74	5.01	0 59 38.96	− 0.71
	Neptune . . .	39	31.7	33.6	34.7	44.3	45.4	46.5	47.8	49.8	58.5	59.7	1.4	7 46.67	0.10	5.02	1 7 41.55	
	Rumker, N. F., 585	40	10.0	11.9	13.1	22.4	23.6	24.8	26.0	27.2	36.7	37.9	39.6	12 24.84	0.10	5.02	1 12 19.72	+ 0.29
	ξ Andromedæ . .	41	26.4	29.0	30.6	44.1	45.6	47.0	49.0	50.5	4.2	5.8	8.1	14 47.30	0.23	5.02	1 14 42.05	− 0.30
	Polaris	42	. .	. .	. .	. .	. .	. .	. .	. .	35.0	22.0	31.0	21 29.33	9 15.42	5.02	. . . . .	− 51.13
	η Piscium . . .	43	. .	. .	. .	34.2	35.4	36.6	37.9	39.2	48.9	50.2	52.0	24 41.80	5.21	5.02	1 24 31.57	+ 0.22
	ξ¹ Ceti	44	56.8	58.5	59.8	9.1	10.3	11.5	12.8	14.0	23.6	24.8	26.5	6 11.61	0.11	− 5.03	2 6 6.47	0.22
	γ Ceti	45	. .	. .	. .	39.7	40.9	42.7	58.0	0.5	1.8	3.0	4.2	36 53.85	26.05	+ 6.03	2 36 33.83	+ 0.18
	20 Persei	46	6.2	8.7	10.2	22.0	23.3	24.9	26.4	27.9	40.1	41.5	43.6	45 24.98	− 0.04	6.03	2 45 30.97	− 0.03
	B. A. C. 908 . .	47	11.7	23.4	29.7	29.5	36.5	43.9	51.9	59.3	0.2	7.5	17.9	51 43.77	+ 0.06	6.03	2 51 49.86	− 5.54
Nov. 2	Jupiter I . . .	48	23.5	24.8	26.2	27.4	29.6	. .	32.1	34.3	35.8	37.0	38.3	58 0.90	− 0.33	6.04	2 58 6.61	
	Jupiter II . . .	49	48.5	50.6	51.9	1.5	2.8	4.0	5.2	6.5	16.4	17.7	19.4	58 4.05	0.06	6.04	2 58 10.03	
	Weisse (2) 75 . .	50	36.2	38.2	39.3	. .	. .	. .	. .	. .	4.0	5.2	7.1	4 51.67	− 0.11	+ 6.04	3 4 57.60	+ 0.19

October 24, 12^{h}. Reduced collimation correction.
29. Unsteady.
October 29. Image east $0^{r}.33$. Clamp west.
Image east $0^{r}.48$. Clamp east.
38. Cloudy.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Oct. 26, 1.0	− 3.64	+ 0.005	− 0.46	− 0.06
29, 1.0	− 5.01	− 0.010	− 0.10	− 0.09

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Nov. 2 Y.	ζ Arietis	1	4.1	6.1	7.4	17.4	18.6	19.9	21.2	22.4	32.7	33.9	35.8	7 19.95	− 0.06	+ 6.04	3 7 25.93	+ 0.18
	*+22° 44′ . .	2	48.5	50.5	51.6	2.0	3.0	4.3	5.6	6.8	17.4	18.6	20.6	13 4.45	0.06	6.04	3 13 10.43	0.18
	Lalande 6820 . .	3	42.7	45.0	46.3	57.9	59.3	0.8	2.3	3.8	15.5	17.0	19.1	36 0.88	0.04	6.04	3 36 6.88	0.13
	e Tauri . . .	4	47.5	49.4	50.6	0.0	1.1	2.5	3.7	4.9	14.5	15.7	17.5	41 2.49	0.06	6.04	3 41 8.47	0.39
	ζ Persei	5	34.4	36.6	37.9	48.8	50.1	51.7	53.2	54.6	5.7	7.0	9.2	45 51.75	0.05	6.04	3 45 57.74	0.20
	γ¹ Eridani. . . .	6	36.6	38.5	39.7	49.4	50.6	51.8	53.1	54.3	4.3	5.5	7.1	51 51.90	0.12	6.04	3 51 57.82	+ 0.08
	Polaris, S. P. . .	7	. .	. .	. .	27.0	13.0	6.0	55.0	42.0	. .	. .	. .	12 4.60	2.89	6.15	. . . .	− 50.04
4	Neptune . . .	8	45.9	47.7	48.9	58.3	59.3	0.6	1.9	3.0	12.5	13.8	15.4	8 0.66	0.09	6.93	1 8 7.50	
	Polaris . . .	9	. .	. .	. .	23.0	15.0	58.0	51.0	39.0	. .	. .	. .	12 1.20	0.68	6.93	. . . .	− 49.78
	θ Ceti	10	9.5	11.3	12.6	22.0	23.0	24.3	25.6	26.8	36.5	37.6	39.3	17 24.41	0.10	6.93	1 17 31.24	+ 0.29
	B. A. C. 472 . .	11	44.8	46.7	47.9	57.1	58.3	59.5	0.7	1.8	11.6	12.6	14.4	27 59.58	0.09	6.93	1 28 6.42	+ 0.26
	B. A. C. 494 . .	12	. .	. .	. .	2.0	16.0	34.5	55.0	11.0	. .	. .	. .	34 35.70	0.23	6.93	1 34 42.40	− 17.91
	α Arietis	13	27.9	30.0	31.3	41.3	42.5	43.9	45.2	46.6	56.9	58.2	0.0	59 43.98	0.09	6.93	1 59 50.82	+ 0.11
	O. Arg. N. 2546 .	14	49.7	52.4	54.0	8.5	10.0	11.9	13.9	15.6	29.9	31.9	34.6	7 12.04	0.12	6.93	2 7 18.85	0.41
	γ Ceti	15	12.2	14.1	15.3	24.5	25.7	26.9	28.2	29.4	38.8	40.0	41.8	36 26.99	0.09	6.93	2 36 33.83	+ 0.17
	B. A. C. 908 . .	16	10.4	21.4	29.0	28.3	34.9	42.9	50.5	58.8	59.9	6.7	16.6	51 43.58	0.45	6.93	2 51 50.06	− 5.61
	Jupiter I . . .	17	39.7	41.7	42.8	52.6	53.7	55.0	56.0	57.3	7.3	8.5	10.2	56 54.98	0.09	6.93	2 57 1.82	
	Jupiter II . . .	18	21.2	22.4	23.9	25.3	27.5	. .	29.5	32.0	33.3	34.6	35.9	56 58.56	0.36	6.93	2 57 5.13	
	48 Cephei . . .	19	45.8	53.7	58.7	41.3	46.4	51.8	57.5	2.4	45.7	51.4	58.9	3 52.15	0.32	6.93	3 3 58.76	− 3.43
	ζ Arietis	20	3.3	5.1	6.4	16.4	17.6	18.9	20.2	21.5	31.6	32.8	34.7	7 18.95	− 0.09	6.93	3 7 25.79	+ 0.16
6	Neptune . . .	†21	35.5	37.0	38.3	. .	. .	. .	. .	. .	. .	. .	. .	6 36.93	+ 13.12	6.73	1 6 56.78	
	Polaris . . .	22	. .	. .	. .	21.0	7.0	57.0	46.0	35.0	. .	. .	. .	11 57.20	+ 3.08	6.73	. . . .	− 49.41
	θ Ceti	23	9.7	11.4	12.6	22.1	23.3	24.5	25.7	27.0	36.5	37.7	39.4	17 24.54	− 0.11	6.73	. . . .	+ 0.29
	*−30° 29′ . .	24	. .	. .	. .	6.7	8.0	9.9	27.7	30.8	32.0	33.4	34.8	29 22.91	30.29	6.73	1 28 59.35	0.11
	*−30° 31′ . .	25	. .	. .	. .	53.8	55.2	56.7	58.1	59.4	. .	. .	. .	28 56.64	0.11	6.73	1 29 3.26	0.11
	β Arietis	26	5.1	7.2	8.5	18.5	19.6	20.9	22.3	23.3	33.6	34.8	36.7	47 20.95	0.04	6.73	. . . .	0.14
	Jupiter I . . .	27	13.0	14.1	15.6	17.0	19.0	. .	21.5	23.8	25.0	26.4	27.6	55 50.30	0.33	6.73	2 55 56.70	
	Jupiter II . . .	28	38.1	40.1	41.3	51.0	52.2	53.4	54.8	56.0	5.9	7.1	8.7	55 53.51	0.06	6.73	2 56 0.18	
	ζ Arietis	29	3.5	5.5	6.6	16.5	17.8	19.1	20.5	21.7	31.7	33.0	34.9	7 19.16	0.04	6.73	. . . .	0.14
8	ζ Aquilæ . . .	30	55.6	57.5	58.7	8.3	9.5	10.8	12.0	13.3	23.0	24.2	25.9	59 10.80	− 0.04	13.31	. . . .	2.02
	δ Draconis . . .	31	38.1	42.4	45.3	10.0	12.9	15.9	19.3	22.0	47.1	50.1	54.6	12 16.15	+ 0.19	13.31	. . . .	1.52
	Moon I. . . .	32	44.6	46.6	48.0	58.5	59.6	1.0	2.4	3.5	14.1	15.3	17.4	28 1.00	− 0.16	13.31	19 28 14.15	
	γ Aquilæ . . .	33	34.5	36.5	37.6	47.3	48.4	49.6	50.8	51.9	1.6	2.8	4.5	39 49.59	0.05	13.31	. . . .	1.85
	α Aquilæ . . .	34	56.4	58.1	59.4	8.8	10.0	11.2	12.5	13.6	23.4	24.5	26.1	44 11.27	0.06	13.31	. . . .	1.85
10 B.	Moon I. . . .	35	22.1	24.0	25.4	35.7	36.8	37.8	39.1	40.2	51.0	52.0	53.9	17 38.00	− 0.24	11.14	21 17 48.90	
	β Aquarii. . .	36	. .	. .	. .	42.3	43.6	45.3	0.4	3.2	4.4	5.6	6.7	25 56.44	− 26.22	. .	. . . .	+ 1.48
	79 Draconis . . .	37	13.9	19.6	23.5	55.9	59.9	3.5	8.1	12.0	45.1	49.1	54.7	51 3.21	+ 1.33	11.14	21 51 15.68	− 1.11
	θ Aquarii. . .	38	31.2	32.9	34.4	43.7	44.8	46.2	47.3	48.6	58.0	59.2	0.8	9 46.10	− 0.15	11.34	. . . .	+ 1.24
	Polaris . . .	39	. .	. .	. .	. .	51.0	34.0	20.0	. .	. .	. .	. .	11 35.00	+ 19.64	+ 11.31	. . . .	− 47.97
11 Y.	μ Capricorni. . .	40	23.0	25.0	26.3	35.8	37.0	38.2	39.6	40.7	50.7	51.9	53.6	46 38.35	− 0.12	− 27.31	21 46 10.92	+ 1.42
	α Aquarii. . .	41	. .	. .	. .	44.3	45.5	47.3	2.6	5.1	6.4	7.7	8.9	59 58.48	26.03	27.31	21 59 5.14	1.24
	Moon I. . . .	42	27.3	29.3	30.3	40.3	41.5	42.9	44.2	45.4	55.5	56.6	58.4	8 42.88	0.12	27.31	22 8 15.45	
	θ Aquarii. . .	43	9.5	11.5	12.7	22.1	23.3	24.5	25.7	26.9	36.5	37.7	39.4	10 24.53	0.10	27.31	22 9 57.12	1.26
	ρ Aquarii. . .	44	32.6	34.6	35.8	45.3	46.4	47.6	48.8	50.0	59.7	0.8	2.5	13 47.65	0.10	27.31	22 13 20.24	0.23
	σ Aquarii. . .	45	57.1	58.9	0.1	9.8	10.9	12.1	13.4	14.6	24.3	25.4	27.3	24 12.17	0.11	27.31	22 23 44.75	1.19
	η Aquarii. . .	46	52.0	54.0	55.0	4.5	5.6	6.8	8.1	9.2	18.8	20.0	21.7	29 6.83	0.08	27.31	22 28 39.49	1.07
	Weisse 136. .	47	49.3	51.2	52.2	1.7	2.8	4.0	5.3	6.4	16.0	17.3	19.0	8 4.11	− 0.10	27.32	23 7 36.69	0.87
	*+66° 21′ . .	48	49.4	53.8	56.2	19.7	22.5	25.4	29.2	31.8	55.4	58.2	2.9	16 25.86	+ 0.12	27.32	23 15 58.66	+ 1.09
	*+54° 3′ . .	49	. .	. .	. .	30.0	32.3	34.0	36.2	38.0	. .	. .	. .	20 34.10	+ 0.05	− 27.32	23 20 6.83	− 0.24

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Nov. 2, 3.4	+ 6.04	+ 0.011	+ 0.10	− 0.09
4, 2.2	+ 6.93	+ 0.004	+ 0.02	− 0.09
6, 2.1	+ 6.73	− 0.004	+ 0.11	− 0.09
8, 19.5	+ 13.31	− 0.010	+ 0.17	− 0.08
10, 21.8	+ 11.14	− 0.010	+ 0.49	− 0.08

21. Cloudy.
November 8, 14h. Image east 0r.52. Clamp east.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Nov. 11 Y.	*+54° 6′	1	9.2	12.2	14.1	..	..	..	..	..	54.6	56.8	59.7	20 34.43	+ 0.05	−27.32	23 20 7.16	− 0.24
	Lalande 26	2	18.0	20.5	22.0	34.2	35.8	37.3	38.7	40.2	52.6	54.0	56.2	4 37.23	+ 0.01	27.32	0 4 9.92	+ 0.08
	γ Pegasi	†3	44.0	46.1	47.3	57.0	58.0	59.4	0.8	1.8	11.6	13.0	14.7	6 59.43	− 0.05	27.32	0 6 32.06	0.47
	*+35° 53′	4	5.2	7.4	8.9	20.3	22.0	23.4	24.9	26.3	38.0	39.4	41.5	10 23.39	0.00	27.33	0 9 56.06	0.13
	ρ Andromedæ	†5	25.5	27.6	29.2	40.7	42.2	43.7	45.2	46.5	58.5	0.2	2.4	14 43.79	0.00	27.33	0 14 16.46	0.09
	Lalande 508	6	54.4	56.8	58.1	9.6	11.0	12.4	14.0	15.5	27.3	28.6	30.8	19 12.59	0.00	27.33	0 18 45.26	0.11
	Lalande 631	7	11.7	14.0	15.5	27.0	28.3	29.8	31.3	32.9	44.7	46.0	48.3	22 29.95	0.00	27.33	0 22 2.62	0.09
	Lalande 736	8	3.0	5.5	6.8	18.2	19.6	21.1	22.6	24.0	36.0	37.5	39.7	25 21.27	0.00	27.33	0 24 53.94	0.08
	*+36° 6′	9	54.8	56.0	57.9	59.6	2.2	..	16.2	19.3	20.7	22.1	24.0	28 39.28	0.32	27.33	0 28 11.63	0.07
	Lalande 849	10	21.4	23.8	25.0	36.5	38.0	39.5	41.0	42.6	54.3	55.7	58.0	28 39.62	0.00	27.33	0 28 12.29	0.07
	Lalande 1003	11	..	..	..	0.0	1.5	2.9	4.5	5.7	17.7	19.0	21.2	33 9.06	6.10	27.33	0 32 35.63	0.06
	*+10° 5′	12	38.4	40.2	41.6	50.7	51.9	53.2	54.5	55.9	5.5	6.6	8.5	35 53.36	0.06	27.33	0 35 25.97	0.39
	*+ 9° 51′	13	13.9	15.8	17.0	26.4	27.5	28.8	30.0	31.3	41.0	42.4	44.0	40 28.92	0.06	27.33	0 40 1.53	0.37
	i Piscium, (1st *)	14	4.8	6.8	8.1	18.5	19.9	21.2	22.7	24.0	34.8	35.9	47.8	43 21.32	0.02	27.33	0 42 53.97	0.19
	i Piscium, (2d *)	15	41.6	42.9	44.6	46.0	48.4	..	55.5	58.2	59.6	1.0	2.6	43 22.04	0.31	27.33	0 42 54.40	+ 0.19
	45 Andromedæ	16	1.0	3.4	4.9	16.5	18.0	19.6	21.2	22.7	34.2	35.9	38.1	4 19.59	0.00	27.33	1 3 52.26	− 0.04
	Neptune	17	43.0	44.9	46.1	55.6	56.6	57.9	59.1	0.3	9.9	11.0	12.6	6 57.91	0.07	27.33	1 6 30.51	
	*+2° 52′	18	2.9	4.7	6.5	15.5	16.6	17.7	18.9	20.0	29.6	30.8	32.3	13 17.77	0.07	27.33	1 12 50.37	+ 0.30
	θ Ceti	19	43.8	45.6	46.9	56.3	57.4	58.7	59.9	1.0	10.7	12.0	13.5	17 58.71	0.11	27.33	1 17 31.27	+ 0.30
	Polaris	20	..	..	..	..	..	..	..	..	42.0	31.0	40.0	21 37.67	9 5.07	27.33	....	− 48.49
	η Piscium	21	..	..	..	56.5	57.7	58.8	0.2	1.3	11.2	12.4	14.1	25 4.02	5.14	27.33	1 24 31.55	+ 0.23
15 B.	Moon I	22	..	..	..	18.2	19.2	20.4	21.8	22.9	..	..	..	14 20.50	0.13	29.07	1 13 51.30	
	Polaris	23	..	..	..	..	..	..	..	..	38.0	28.0	36.0	21 34.00	9 1.58	29.07	....	− 45.64
	ο Piscium	24	46.2	48.0	49.3	58.6	59.7	1.0	2.2	3.2	13.0	14.0	15.8	39 1.00	0.14	29.07	....	+ 0.22
	β Arietis	25	41.2	43.0	44.2	54.0	55.2	56.7	57.7	58.9	9.3	10.5	12.3	47 56.64	0.07	29.07	....	0.13
	Weisse 1071	26	58.4	0.3	1.4	11.0	12.0	13.2	14.6	15.9	25.5	26.6	28.3	1 13.38	0.14	29.07	2 0 44.17	0.17
	Lalande 4070	27	54.4	56.7	57.8	7.7	8.8	10.0	11.2	12.6	22.8	24.0	25.8	6 10.16	0.08	29.07	2 5 41.01	+ 0.10
	Jupiter I	28	58.9	0.0	1.3	2.9	5.0	..	7.0	9.7	11.0	12.0	13.6	51 36.14	0.43	29.08	2 51 6.63	
	Jupiter II	29	24.2	25.9	27.0	36.8	37.8	39.0	40.3	41.6	51.6	53.0	54.6	51 39.25	− 0.16	29.08	2 51 10.01	
17 E.	Polaris	30	..	..	..	46.5	31.5	19.0	15.5	0.0	..	..	..	12 22.50	+ 9.79	29.69	....	− 44.90
	Moon I	31	53.2	55.1	56.3	6.0	7.0	8.4	9.8	10.9	20.9	22.1	23.8	48 8.50	− 0.04	29.68	2 47 38.78	
	Jupiter I	32	18.6	20.4	21.4	..	..	..	..	..	46.0	47.3	48.9	50 33.77	− 0.07	29.68	2 50 4.02	
	Jupiter II	33	..	..	..	34.8	35.8	36.9	38.2	39.4	..	..	..	50 37.02	+ 0.04	29.68	2 50 7.38	
	α Ceti	34	..	..	..	..	..	..	29.2	31.4	32.6	33.9	35.2	56 32.46	− 33.71	..	....	+ 0.07
18 Y.	Moon I	†35	30.0	31.9	33.1	43.0	44.2	45.4	46.7	47.9	57.7	59.3	1.0	37 45.47	− 0.02	29.82	3 37 15.63	
	Moon II	†36	38.8	40.6	41.9	51.6	52.9	54.3	55.6	56.8	6.7	7.8	9.6	39 54.24	0.02	29.82	3 39 24.40	
	ε Tauri	37	..	..	..	..	..	..	9.0	11.7	13.0	14.4	15.7	42 12.76	− 34.22	29.82	3 41 8.72	+ 0.04
	ζ Persei	†38	10.4	12.7	14.1	24.9	26.1	27.7	29.0	30.3	41.9	43.2	45.0	46 27.75	+ 0.02	29.82	3 45 57.95	− 0.04
	γ¹ Eridani	39	12.6	14.6	15.9	25.6	26.7	27.9	29.0	30.3	40.1	41.3	43.1	52 27.92	− 0.10	29.82	3 51 58.00	− 0.11
	λ Tauri	40	43.5	45.3	46.5	56.1	57.2	58.3	59.6	0.7	10.5	11.8	13.5	53 58.45	0.03	29.82	3 53 28.60	+ 0.05
	O. Arg. S. 2803	41	53.1	55.3	56.5	6.6	7.8	9.1	10.5	11.7	22.2	23.6	25.5	1 9.26	0.13	29.82	4 0 39.31	− 0.26
	Lalande 7819	42	47.2	49.0	50.2	59.4	0.9	2.0	3.3	4.5	14.1	15.4	16.8	5 2.07	− 0.09	29.82	4 4 32.16	0.06
	B. A. C. 1307	43	35.3	38.1	40.1	54.6	56.3	58.2	0.0	1.9	16.7	18.5	21.2	9 58.26	+ 0.08	29.82	4 9 28.52	− 0.29
	γ Tauri	44	38.2	40.0	41.3	51.2	52.4	53.5	54.8	56.0	5.9	7.0	9.0	12 53.57	− 0.02	29.82	4 12 23.73	+ 0.07
	Lalande 8431	45	54.6	56.5	57.8	7.4	8.5	9.7	10.8	12.0	21.9	23.0	24.6	22 9.71	0.09	29.82	4 21 39.80	− 0.09
	α Tauri	†46	42.3	44.1	45.2	55.0	56.1	57.5	58.8	0.0	9.9	11.0	12.8	28 57.52	0.02	29.82	4 28 27.68	+ 0.08
24 B.	α² Capricorni	47	2.0	4.0	5.2	14.8	16.0	17.3	18.6	19.7	29.3	30.5	32.3	11 17.25	− 0.10	..	....	2.17
	Weisse (2) 291	48	..	26.2	27.4	39.1	40.2	41.9	43.8	45.2	57.2	58.6	..	13 42.18	+ 0.05	28.90	22 13 13.33	0.91
	Weisse (2) 292	49	..	..	..	..	..	..	20.0	23.4	25.0	26.2	28.0	14 24.52	− 42.05	28.90	22 13 13.57	+ 0.91
	Polaris	50	..	..	..	45.0	31.0	20.0	12.0	59.0	..	..	..	12 21.40	+ 6.89	−28.90	....	− 41.56

3. Unsteady.
5. Unsteady.
35. Unsteady.
36. Unsteady.
38. Unsteady.
46. Unsteady.

November 15, 10ʰ. Image west 0ʳ.06. Clamp east.
Image east 0ʳ.05. Clamp west.

Finding the movable wires impinged on the fixed ones, the plate was taken out, and a new wire (C_5) inserted in place of one broken out in removing the plate, and the systems were replaced somewhat farther separated, to prevent the movable wires from deranging the fixed ones.

November 16, 15ʰ. Image west 0ʳ.12. Clamp west.
Image east 0ʳ.05. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Nov. 11, 23.4	− 27.32	− 0.007	+ 0.14	− 0.08
15, 1.7	− 29.07	− 0.007	+ 0.35	− 0.19
17, 2.8	− 29.68	− 0.007	+ 0.26	− 0.08
18, 4.1	− 29.82	− 0.008	+ 0.15	− 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Nov. 24 B.	η Piscium	1	45.2	47.0	48.3	58.4	59.3	0.3	1.8	3.0	12.8	13.9	15.9	25 0.54	− 0.02	−28.90	. . . .	+ 0.27
	ο Piscium	2	45.6	47.2	48.5	58.1	59.1	0.2	1.6	2.9	12.3	13.8	15.5	39 0.44	− 0.03	28.90	. . . .	0.24
	*+19° 10′	3	7.5	9.5	11.0	20.8	22.0	23.5	24.9	26.0	. .	. .	. .	6 18.15	+ 5.26	28.90	2 5 54.51	0.10
	O. Arg. S. 1780	4	31.3	33.8	35.0	45.6	46.9	48.0	49.8	51.2	1.7	3.5	5.0	38 48.35	− 0.17	28.90	2 38 19.28	0.15
	Jupiter I	5	25.5	26.8	28.0	29.6	31.6	. .	33.6	36.1	37.3	38.6	39.8	47 2.69	0.29	28.90	2 46 33.50	
	Jupiter II	6	50.4	52.0	53.3	3.1	4.2	5.0	6.7	7.7	17.8	18.8	20.6	47 5.42	0.02	28.90	2 46 36.50	
	α Ceti	7	43.2	45.2	46.3	55.9	56.7	57.9	59.1	0.2	10.0	11.1	12.7	55 58.03	0.05	28.90	. . . .	0.04
	η Tauri	8	58.5	0.5	1.8	11.9	13.0	14.6	15.9	17.0	27.4	28.7	30.7	40 14.55	0.01	28.90	. . . .	0.16
25 Y.	γ Pegasi	9	45.7	47.7	48.8	58.6	59.6	0.9	2.1	3.3	13.2	14.4	16.2	7 0.95	0.03	28.94	0 6 32.04	0.59
	*+37° 29′	10	12.6	14.7	16.2	27.8	29.4	31.1	32.5	33.8	45.9	47.4	49.5	10 30.99	0.19	28.94	0 10 2.24	0.27
	Weisse 236	11	50.0	51.7	52.9	2.3	3.5	4.6	5.8	6.9	16.5	17.7	19.4	16 4.66	0.10	28.94	0 15 35.62	0.67
	Weisse 341	12	2.5	4.3	5.7	15.0	16.2	17.4	18.7	19.8	29.4	30.5	32.2	22 17.43	− 0.02	28.94	0 21 48.47	+ 0.57
	ζ Cassiopeæ	13	48.4	51.5	53.4	9.2	11.0	12.9	15.2	17.2	33.1	35.4	37.8	30 13.19	+ 0.36	28.94	0 29 44.61	− 0.25
	23 Cassiopeæ	14	44.8	50.7	54.9	29.7	33.9	38.0	42.9	46.5	21.6	26.0	32.6	39 38.33	0.98	28.94	0 39 10.37	2.31
	Polaris	15	32.5	18.5	16.0	9.0	35.0	. .	8.0	49.0	40.0	32.0	26.0	12 26.60	0.83	28.94	. . . .	40.88
	μ Cassiopeæ	16	42.1	45.2	47.0	3.2	5.1	7.0	9.2	11.4	27.6	29.7	32.6	0 7.28	+ 0.38	28.94	0 59 38.72	− 0.43
	88 Piscium	17	10.6	12.5	13.6	22.9	23.9	25.2	26.5	27.8	37.3	38.4	40.2	8 25.35	− 0.02	28.94	1 7 56.39	+ 0.37
	Weisse 144	18	3.5	5.5	6.6	16.0	17.2	18.5	19.7	20.9	30.8	32.0	33.8	11 18.59	+ 0.02	28.94	1 10 49.67	0.32
	*−8° 47′	19	43.8	45.7	46.9	56.3	57.4	58.6	0.0	1.1	10.8	12.0	13.9	17 58.77	− 0.11	28.94	1 17 29.72	0.36
	η Piscium	20	45.2	47.1	48.2	57.9	59.0	0.4	1.7	2.9	12.8	13.9	15.7	25 0.44	+ 0.03	28.94	1 24 31.53	0.27
	Lalande 4070	21	54.3	56.2	57.4	7.5	8.7	9.9	11.2	12.3	22.4	23.7	25.6	6 9.93	+ 0.06	28.94	2 5 41.05	0.10
	γ Ceti	22	48.0	49.7	51.0	0.5	1.7	2.8	4.1	5.1	14.8	15.8	17.7	37 2.84	− 0.04	28.94	2 36 33.86	+ 0.08
	Jupiter I	23	56.7	58.0	59.4	0.6	2.8	. .	4.8	7.5	8.7	10.0	11.3	46 33.98	− 0.24	28.94	2 46 4.80	
	Jupiter II	24	22.0	23.7	24.9	34.8	35.8	37.1	38.3	39.5	49.4	50.6	52.4	46 37.14	+ 0.03	28.94	2 46 8.23	
	Lacaille 951	25	56.0	58.3	59.7	11.2	12.4	13.9	15.4	16.7	28.6	30.0	31.8	54 14.00	− 0.31	28.94	2 53 44.75	− 0.32
	Weisse 144	26	26.7	28.4	29.7	39.3	40.3	41.5	42.7	43.9	53.7	55.0	56.7	9 41.63	0.12	28.94	3 9 12.57	0.04
	Lacaille 1048	27	29.0	31.0	32.4	42.9	44.0	45.4	46.9	48.0	58.8	0.0	2.0	12 45.49	− 0.24	28.94	3 12 16.31	0.25
	Rumker 845	28	43.4	44.4	46.7	57.0	58.2	59.6	0.9	2.1	12.7	14.0	15.7	14 59.52	+ 0.09	28.94	3 14 30.67	0.05
	*+ 7° 8′	29	30.1	32.3	33.5	42.9	43.9	45.3	46.5	47.6	57.2	58.4	0.2	24 45.26	− 0.02	28.94	3 24 16.30	0.01
	*+31° 21′	30	37.5	39.6	40.9	51.8	53.3	54.7	56.3	57.6	8.5	9.9	12.0	27 54.74	+ 0.14	28.94	3 27 25.94	0.11
	O. Arg. S. 2388	31	35.2	37.0	38.4	48.7	50.0	51.3	52.6	53.8	4.4	5.5	7.4	30 51.30	− 0.22	28.94	3 30 22.14	0.26
	Lalande 6820	32	17.6	20.0	21.3	32.9	34.3	35.7	37.3	38.8	50.7	52.1	54.2	36 35.90	+ 0.18	28.94	3 36 7.14	0.17
	Weisse 751	33	5.0	6.2	7.5	8.8	11.0	. .	12.2	14.9	16.3	17.5	18.8	40 41.82	− 0.25	28.94	3 40 12.63	0.02
	Weisse 752	34	27.6	29.5	30.7	40.2	41.4	42.6	43.9	45.0	54.7	55.9	57.7	40 42.65	+ 0.01	28.94	3 40 13.72	0.02
	Weisse 774	35	. .	. .	. .	14.6	15.8	17.6	33.6	36.1	37.4	38.7	40.1	42 29.24	− 26.85	28.94	3 41 33.45	0.02
	γ Eridani	36	11.8	13.9	15.0	24.7	25.8	27.0	28.3	29.6	39.3	40.6	42.3	52 27.12	0.15	28.94	3 51 58.03	− 0.17
Dec. 3 B.	Weisse (2) 291	37	. .	. .	. .	. .	. .	. .	11.3	14.4	15.8	17.6	19.1	14 15.64	− 42.07	20.65	22 13 12.92	+ 1.08
	Weisse (2) 292	38	15.3	17.4	19.1	31.1	32.6	33.7	35.4	36.8	48.8	50.0	52.1	13 33.88	+ 0.03	20.65	22 13 13.26	1.08
	π Aquarii	39	55.3	56.4	57.6	58.9	0.0	. .	27.7	30.0	31.1	32.4	33.8	19 14.32	− 16.82	20.65	22 18 36.85	1.39
	γ Pegasi	40	. .	. .	. .	. .	. .	. .	23.9	26.1	27.6	28.9	30.2	7 27.34	34.70	20.67	0 6 31.97	0.68
	Weisse 164	41	54.3	56.3	57.4	. .	7.7	9.0	10.4	. .	21.1	22.1	23.9	11 9.13	0.07	20.67	0 10 48.39	0.75
	Weisse 337	42	7.7	9.7	10.8	20.1	21.3	22.6	23.9	25.0	34.6	35.9	37.2	21 22.62	0.05	20.67	0 21 1.90	0.67
	ε Piscium	43	17.2	19.0	20.3	29.7	30.8	32.0	33.4	34.5	44.2	45.4	47.0	56 32.14	0.05	20.68	0 56 11.41	+ 0.47
	Neptune	44	6.6	8.5	9.8	19.0	20.0	21.2	22.5	23.6	33.2	34.6	36.0	5 21.36	− 0.05	20.68	1 5 0.63	
	Polaris	45	. .	. .	. .	34.0	19.0	6.0	59.0	46.0	. .	. .	. .	12 8.80	+ 5.79	20.68	. . . .	− 36.22
	η Piscium	46	36.9	39.0	40.0	49.8	51.0	52.0	53.4	54.7	4.3	5.8	7.4	24 52.21	− 0.03	20.68	1 24 31.50	+ 0.32
	O. Arg. N. 2546	47	. .	. .	. .	36.0	37.6	39.5	41.4	43.0	57.7	59.6	2.0	7 47.10	7.45	20.68	2 7 18.97	− 0.37
	Jupiter I	48	17.1	18.0	19.5	20.8	23.8	. .	24.7	27.3	28.8	30.0	31.3	42 54.05	0.30	20.69	2 42 33.06	
	Jupiter II	49	41.9	43.5	44.7	54.5	55.6	56.8	58.1	59.4	9.2	10.5	12.1	42 56.94	0.03	20.69	2 42 36.22	
	δ Eridani	50	7.0	9.0	10.3	19.4	21.0	22.2	23.4	24.6	34.2	35.6	37.2	37 22.17	− 0.09	−20.70	3 37 1.38	− 0.14

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Nov. 24, 2.4	− 28.90	− 0.001	+ 0.17	− 0.06
25, 2.0	− 28.94	− 0.001	+ 0.34	− 0.06
Dec. 3, 1.5	− 20.68	− 0.008	+ 0.14	− 0.06

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	s.	s.	h. m. s.	s.
Dec. 3 B.	γ^1 Eridani	1	3.7	5.6	6.8	. .	17.6	18.6	20.0	. .	31.0	32.4	33.8	52 18.83	− 0.11	−20.70	3 51 58.02	− 0.21
	γ Tauri	2	. .	. .	. .	42.2	43.3	44.4	45.6	47.0	57.1	58.3	0.0	12 49.74	5.13	20.70	4 12 23.91	− 0.11
7 Y.	ε Delphini	3	58.9	0.8	2.0	11.7	12.8	14.0	15.2	16.4	26.0	27.2	29.0	27 14.00	− 0.01	15.73	20 26 58.26	+ 1.93
	α Cygni	4	53.1	55.5	57.1	10.6	12.1	13.7	15.6	17.2	30.6	32.2	34.8	37 13.86	+ 0.16	15.72	20 36 58.30	1.73
	Moon I.	5	49.4	51.3	52.5	2.7	4.0	5.3	6.8	8.0	18.3	19.4	21.3	55 5.36	− 0.14	15.72	20 54 49.50	
	ι Piscium	6	15.8	17.6	18.8	28.1	29.3	30.5	31.7	32.9	42.5	43.7	45.4	33 30.57	− 0.03	15.68	23 33 14.86	0.97
	*+57° 30′	7	. .	. .	. .	42.4	44.3	46.6	48.9	51.0	. .	. .	. .	58 46.64	+ 0.36	15.68	23 58 31.32	0.06
	*+57° 35′	8	. .	. .	. .	9.6	11.5	13.5	15.7	17.6	. .	. .	. .	59 13.58	+ 0.36	15.68	23 58 58.26	0.06
	Lacaille 5	9	14.3	15.7	17.2	18.5	20.9	. .	28.2	30.9	32.4	33.9	35.3	6 54.73	− 0.47	15.68	0 6 38.58	0.94
	Lacaille 9	10	43.6	44.9	46.5	47.8	50.0	. .	57.6	0.3	1.6	3.1	4.5	7 23.99	0.47	15.68	0 7 7.84	0.94
	*+35° 48′	11	. .	. .	. .	26.4	27.9	29.8	48.8	51.9	53.4	55.0	56.5	10 43.71	31.98	15.68	0 9 56.14	0.48
	Weisse 337	†12	2.8	4.6	5.8	15.3	16.4	17.6	18.8	19.8	29.5	30.6	32.2	21 17.58	0.03	15.67	0 21 1.88	0.71
	β Ceti	†13	3.2	5.0	6.6	16.4	17.5	18.7	20.1	21.3	31.4	32.4	34.3	37 18.81	− 0.13	15.67	0 37 3.01	+ 0.70
	Polaris	14	14.0	59.0	20.0	. .	. .	. .	. .	. .	. .	. .	. .	49 11.00	+22 55.91	15.67	. . . .	− 33.51
8	ξ Aquarii	15	48.1	50.0	51.2	0.6	1.8	3.0	4.3	5.4	15.0	16.3	18.0	31 3.06	− 0.08	15.01	21 30 47.97	+ 1.82
	ε Pegasi	16	46.6	48.4	49.5	59.0	0.2	1.3	2.6	3.8	13.5	14.8	16.5	38 1.47	0.01	15.01	21 37 46.45	1.60
	Moon I.	17	36.4	38.3	39.6	49.6	50.7	52.0	53.4	54.6	4.8	6.0	7.8	47 52.11	0.12	15.01	21 47 36.98	
	α Aquarii	18	5.0	6.9	8.0	17.5	18.6	19.8	21.0	22.1	31.7	32.8	34.5	59 19.81	0.05	15.01	21 59 4.75	1.58
	θ Aquarii	19	57.9	58.8	59.9	9.4	10.6	11.8	13.0	14.1	23.7	24.9	26.7	10 11.89	0.08	15.01	22 9 56.80	1.59
	*+37° 5′	20	42.9	44.3	46.0	47.6	50.2	. .	5.5	8.5	10.0	11.6	13.3	13 27.99	0.21	15.01	22 13 12.77	1.17
	*+37° 5′	21	9.6	11.8	13.2	25.0	26.3	27.8	29.5	30.9	42.9	44.4	46.5	13 27.99	0.11	15.01	22 13 13.09	1.17
	η Aquarii	22	39.5	41.3	42.5	51.5	52.9	54.2	55.3	56.5	6.4	7.4	9.1	28 54.24	0.05	15.09	. . . .	1.42
	κ Aquarii	23	0.0	2.0	3.3	12.7	13.8	15.1	16.2	17.3	27.0	28.3	29.8	31 15.05	0.07	15.09	22 30 59.89	1.43
9	ω Piscium	24	37.4	39.2	40.5	50.0	51.0	52.3	53.7	54.7	4.4	5.4	7.3	52 52.35	− 0.03	15.03	23 52 37.29	0.88
	Groombridge 34	25	52.4	55.0	56.7	9.7	11.0	12.6	14.3	15.9	29.0	30.8	33.0	11 12.76	+ 0.15	15.03	0 10 57.88	0.37
	Weisse 341	26	48.6	50.5	51.6	0.9	2.1	3.3	4.5	5.7	15.4	16.7	18.3	22 3.42	− 0.03	15.03	0 21 48.36	0.71
	Weisse 377	27	51.4	53.3	54.5	3.9	5.0	6.2	7.4	8.6	18.2	19.3	20.9	24 6.25	0.05	15.03	0 23 51.17	0.74
	*−32° 45′	28	54.7	56.9	58.2	9.5	10.7	12.1	13.7	14.9	26.4	27.7	29.7	32 12.23	0.21	15.03	0 31 56.99	0.78
	*− 7° 7′	29	58.7	0.4	1.7	11.0	12.2	13.4	14.6	15.8	25.6	27.8	28.2	35 13.58	− 0.08	15.03	0 34 58.47	0.70
	μ Andromedæ	30	28.7	30.9	32.4	44.4	45.9	47.3	48.7	50.4	2.4	3.8	6.0	49 47.35	+ 0.12	15.03	0 49 32.44	0.27
	Lalande 1702	31	6.5	8.7	10.1	21.5	22.7	24.4	25.9	27.3	39.0	40.4	42.5	53 24.45	+ 0.10	15.03	0 53 9.52	0.30
	*−24° 35′	32	35.9	38.0	39.1	49.3	50.6	52.0	53.3	54.6	5.3	6.5	8.3	56 52.08	− 0.16	15.03	0 56 36.89	0.60
	Neptune	33	45.0	46.9	48.0	57.5	58.5	59.7	0.9	2.1	11.7	13.0	14.6	4 59.81	0.03	15.03	1 4 44.75	
	42 Ceti	34	9.4	11.2	12.3	21.9	22.9	24.0	25.2	26.4	36.1	37.3	39.0	13 24.15	0.05	15.03	1 13 9.07	0.47
	*−1° 11′	35	10.5	12.3	13.5	22.7	23.9	25.3	26.6	27.8	36.9	38.2	39.9	15 25.24	0.05	15.03	1 15 10.16	0.46
	Lalande 2484	36	55.8	57.6	58.8	8.3	9.4	10.6	11.8	12.9	22.2	23.7	25.4	16 10.59	0.05	15.03	1 15 55.51	0.46
	θ Ceti	37	31.1	33.1	34.2	43.8	44.8	46.0	47.4	48.5	58.2	59.4	1.0	17 46.14	0.09	15.03	1 17 31.02	+ 0.46
	Polaris	38	. .	. .	. .	. .	. .	. .	46.0	29.0	23.0	15.0	10.0	35 12.60	23 8.04	15.03	. . . .	− 31.86
	Jupiter I	39	56.4	57.6	58.8	0.2	2.3	. .	4.5	6.7	8.1	9.4	10.8	40 33.48	− 0.26	15.03	2 40 18.19	
	Jupiter II	40	21.4	23.2	24.5	34.2	35.3	36.5	37.8	39.0	48.8	50.1	51.8	40 36.60	+ 0.01	15.03	2 40 21.58	
	*+38° 27′	41	10.5	12.0	13.7	15.5	18.0	. .	34.8	38.0	39.5	41.3	42.8	4 56.61	− 0.21	15.03	3 4 41.37	0.23
	Weisse (2) 59	42	. .	43.8	45.4	57.5	58.8	0.3	2.0	3.5	15.8	17.2	. .	5 0.48	+ 0.12	15.03	3 4 45.57	0.23
	Weisse (2) 69	43	31.9	33.4	35.0	36.6	39.5	. .	56.1	59.3	0.8	2.4	3.8	5 17.88	− 0.21	15.03	3 5 2.64	0.23
	Lacaille 1004	44	10.3	12.4	13.7	24.8	26.2	27.6	29.1	30.4	42.0	43.4	45.3	7 27.75	0.21	15.03	3 7 12.51	0.32
	*−9° 4′	45	52.4	53.6	55.0	56.3	57.3	. .	25.5	27.8	29.0	30.3	31.7	30 11.89	− 17.07	15.03	3 29 39.79	0.13
	Rumker 945	46	58.6	0.7	2.0	12.3	13.4	14.8	16.1	17.4	27.8	29.0	30.9	36 14.82	+ 0.05	15.03	3 35 59.84	0.13
	Weisse (2) 890	47	6.7	9.0	10.4	21.7	23.0	24.4	26.0	27.4	39.0	40.4	42.5	41 24.59	0.10	10.03	3 41 9.66	0.23
	Weisse (2) 906	48	. .	52.8	54.0	5.5	6.9	8.2	9.8	11.3	22.7	24.3	. .	42 8.39	+ 0.09	15.03	3 41 53.45	0.23
	γ^1 Eridani	49	58.1	0.0	1.2	10.8	12.0	13.2	14.6	15.6	25.5	26.8	28.5	52 13.30	− 0.11	15.03	3 51 58.16	0.23
	Lalande 7773	50	56.2	58.8	0.6	13.8	15.2	16.6	18.6	20.0	33.5	35.3	37.7	5 16.94	+ 0.16	−15.03	4 5 2.07	− 0.42

12. Cloudy.
13. Faint.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Dec. 7, 22.3	− 15.70	+ 0.013	+ 0.23	− 0.05
8, 21.8	− 15.01	− 0.006	+ 0.23	− 0.05
9, 2.4	− 15.03	0.000	+ 0.23	− 0.05

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Dec. 9 Y.	Lalande 7817 . .	1	58.4	0.9	2.5	15.8	17.3	18.9	20.4	22.0	. .	. .	. .	6 12.02	+ 7.10	−15.03	4 6 4.09	− 0.42
	*+44° 22′ . . .	2	28.7	31.4	33.0	46.3	47.8	49.3	51.3	52.8	6.1	7.8	10.2	6 49.52	+ 0.16	15.03	4 6 34.65	0.42
	*+15° 58′ . . .	3	. .	. .	. .	19.9	21.1	22.9	39.0	41.7	42.8	44.2	45.4	9 34.62	− 26.99	15.03	4 8 52.60	0.14
	Weisse (2) 267. .	4	52.8	54.8	56.0	5.8	7.0	8.3	9.5	10.8	20.8	22.0	23.7	14 8.32	+ 0.02	15.03	4 13 53.31	0.15
	Weisse (2) 344. .	5	0.3	2.0	3.3	13.3	14.4	15.5	16.9	18.0	28.0	29.2	30.9	17 15.62	0.02	15.03	4 17 0.61	0.15
	*+16° 32′ . . .	6	56.5	58.4	59.7	9.4	10.5	11.8	13.1	14.3	24.3	25.5	27.3	19 11.89	+ 0.02	15.03	4 18 56.88	0.15
	ε Tauri	7	. .	. .	. .	29.4	30.7	32.4	48.7	51.3	52.6	53.9	55.3	21 44.29	− 27.39	15.03	4 21 1.87	− 0.15
10 B.	κ Piscium . . .	8	15.5	17.2	18.3	27.8	28.7	29.9	31.3	32.5	42.1	43.2	44.8	20 30.12	0.05	15.02	23 20 15.05	+ 1.12
	Moon I. . . .	9	55.5	57.0	58.3	8.2	9.2	10.2	11.2	12.8	23.0	23.9	25.6	25 10.45	0.08	15.02	23 24 55.35	
	ι Piscium . . .	10	. .	. .	. .	27.9	29.0	30.1	31.3	32.3	41.8	43.1	44.7	33 35.02	4.98	15.02	23 33 15.02	1.01
	ε Piscium . . .	11	11.2	13.1	14.4	23.6	25.0	26.2	27.5	28.7	38.2	39.6	41.0	56 26.23	0.02	15.02	0 56 11.19	0.59
	Neptune . . .	12	42.7	44.2	45.6	54.8	56.3	57.4	58.5	59.7	9.2	10.4	12.1	4 57.35	0.03	15.02	1 4 42.30	
	ξ¹ Ceti.	13	6.9	8.5	9.8	19.2	20.3	21.5	23.0	24.0	33.5	34.9	36.2	6 21.62	− 0.02	15.02	2 6 6.58	+ 0.20
	*+61° 7′ . . .	14	34.0	37.8	40.3	58.6	1.5	4.0	6.1	8.4	28.8	31.3	34.1	23 4.08	+ 0.31	15.02	2 22 49.37	− 0.89
	Jupiter I . . .	15	. .	. .	. .	. .	. .	. .	44.0	46.3	47.9	49.1	50.3	40 47.52	− 34.64	15.02	2 39 57.86	
	Jupiter II . . .	16	1.0	2.9	4.3	13.9	15.2	16.2	17.4	18.9	28.5	29.6	31.3	40 16.29	+ 0.01	15.02	2 40 1.28	
	α Ceti.	17	29.1	31.3	32.3	41.8	42.8	43.9	45.3	46.3	55.9	56.9	58.8	55 44.04	− 0.04	15.02	2 55 28.98	+ 0.03
	γ Tauri	18	23.9	25.5	26.8	36.3	37.8	38.9	40.2	41.2	51.3	52.6	54.4	12 38.99	+ 0.01	15.02	4 12 23.98	− 0.15
20	Polaris	19	. .	. .	. .	. .	. .	. .	20.0	49.0	42.0	49.0	28.0	34 37.60	−22 54.75	5.30	. . . .	− 23.64
	β Arietis	20	17.1	18.7	20.3	30.2	31.3	32.8	34.0	35.1	45.2	46.5	48.3	47 32.68	+ 0.05	5.28	. . . .	+ 0.31
	*+61° 11′ . . .	21	7.0	10.6	13.0	33.0	35.4	38.0	40.4	42.2	2.6	4.6	8.3	22 37.74	+ 0.17	5.27	2 22 32.64	− 0.70
	*+61° 7′ . . .	22	. .	. .	. .	19.8	21.5	25.2	56.7	1.0	3.4	6.8	8.9	23 47.91	− 52.87	5.27	2 22 49.77	0.70
	Weisse 23 . . .	23	14.4	16.3	17.4	27.0	28.3	29.5	30.9	31.9	41.4	42.4	44.3	3 29.44	+ 0.01	5.25	3 3 24.20	0.00
	ο Persei	24	58.1	0.1	1.7	13.0	14.3	15.9	17.1	18.4	29.5	31.0	33.0	36 15.65	0.06	5.24	3 36 10.47	0.29
	Weisse (2) 896. .	25	18.0	20.1	21.8	34.0	35.5	37.0	38.2	39.6	51.4	53.0	55.4	41 36.73	0.08	5.24	3 41 31.57	0.28
	B. A. C. 1229 . .	26	15.0	16.5	17.7	27.7	29.0	30.1	31.2	32.5	42.2	43.3	45.2	50 30.04	0.01	5.24	3 50 24.81	0.23
	B. A. C. 1307 . .	27	11.5	13.8	15.3	30.5	32.0	34.1	36.0	37.6	52.3	54.0	56.9	9 34.18	0.10	5.23	4 9 29.05	0.60
	γ Tauri	28	13.5	15.7	17.0	26.9	28.0	29.4	30.6	31.8	41.2	42.6	44.5	12 29.20	0.04	5.23	. . . .	0.18
	*+15° 31′ . . .	29	24.3	26.0	27.4	37.1	38.2	39.4	40.9	41.9	51.8	52.9	54.6	25 39.50	0.04	5.22	4 25 34.32	0.22
	53 Eridani. . . .	30	4.3	6.0	7.2	16.9	18.2	19.4	20.6	21.7	31.2	32.8	34.6	32 19.35	+ 0.01	5.22	4 32 14.14	0.37
	O. Arg. S. 3516 .	31	49.0	50.8	52.0	2.6	3.8	5.3	6.5	7.5	18.0	19.2	21.1	50 5.07	− 0.01	5.21	4 49 59.85	0.54
	*−31° 36′ . . .	32	48.1	49.3	50.6	52.0	55.3	. .	5.8	8.0	9.4	11.2	12.7	55 30.24	+ 0.28	5.21	4 55 25.31	0.73
	*−31° 36′ . . .	33	24.5	26.3	28.0	39.3	40.4	42.2	43.5	44.7	55.9	57.2	59.2	55 41.93	− 0.02	5.21	4 55 36.70	0.73
	*− 0° 24′ . . .	34	6.1	7.7	9.0	18.7	19.9	21.1	22.4	23.3	32.7	34.0	35.8	21 20.97	+ 0.02	5.20	5 21 15.79	0.34
	*− 5° 27′ . . .	35	35.0	36.5	37.9	47.5	48.7	50.0	51.2	52.3	1.9	3.0	4.4	26 49.85	0.01	5.20	5 26 44.66	0.38
	*+26° 40′ . . .	36	41.2	43.0	44.5	55.3	56.3	57.8	59.1	0.2	10.9	12.2	14.1	31 57.69	0.06	5.20	5 31 52.55	0.30
	Weisse 1045 . .	37	45.0	46.8	48.2	. .	. .	. .	. .	. .	12.4	13.5	15.5	42 0.23	0.06	5.19	5 41 55.10	0.49
	θ Aurigæ. . . .	38	38.4	40.4	41.9	54.0	55.1	57.0	58.3	59.8	11.4	12.9	15.4	50 56.78	+ 0.08	5.19	5 50.51.67	0.37
	γ Columbæ . . .	39	44.0	46.0	47.4	59.0	0.4	2.1	3.5	5.0	16.7	17.9	20.2	53 1.93	− 0.04	5.19	5 52 56.70	0.96
	Weisse (2) 136. .	40	37.8	39.6	41.3	52.4	53.7	55.3	56.5	57.9	9.0	10.2	12.2	6 55.08	+ 0.06	5.18	6 6 49.96	0.31
	Lacaille 2198 . .	41	18.6	20.3	21.8	33.0	34.2	35.6	37.0	38.2	49.1	50.3	52.6	9 35.52	− 0.02	5.18	6 9 30.32	0.81
	Lacaille 2211 . .	42	52.2	54.0	55.2	6.5	7.6	9.0	10.3	11.5	22.2	23.1	24.3	12 8.72	− 0.01	5.18	6 12 3.53	0.75
	μ Geminorum . .	43	55.2	57.0	58.2	8.6	9.9	11.2	12.5	13.7	24.0	25.2	27.0	15 11.14	+ 0.05	5.18	. . . .	− 0.27
23 Y.	Weisse 862. . .	44	41.3	42.9	44.2	53.5	54.8	56.1	57.3	58.4	7.8	8.9	10.7	42 55.99	0.01	5.21	23 42 50.79	+ 1.17
	ω Piscium . . .	45	27.3	29.0	30.2	40.0	41.2	42.4	43.6	44.7	54.0	55.3	57.2	52 42.26	0.03	5.21	23 52 37.08	1.04
	*+57° 32′ ± . .	46	. .	. .	. .	31.1	33.2	35.7	38.0	39.8	. .	. .	. .	58 35.56	0.12	5.21	23 58 30.47	0.55
	*+57° 36′ ± . .	47	54.5	57.0	59.2	1.6	5.9	. .	58.0	2.0	4.4	7.2	9.3	59 1.91	0.70	5.21	23 58 57.40	0.55
	*+57° 32′ ± . .	48	. .	. .	. .	4.1	6.3	8.6	10.7	12.8	. .	. .	. .	59 8.50	0.12	5.21	23 59 3.41	0.55
	*+57° 32′ ± . .	49	45.0	48.0	50.1	. .	. .	. .	. .	. .	34.2	36.3	39.8	59 12.23	0.31	5.21	23 59 7.33	0.55
	Lalande 221 . .	50	. .	. .	. .	57.9	59.3	0.9	2.3	3.7	. .	. .	. .	10 0.82	+ 0.04	− 5.20	0 9 55.66	+ 0.73

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Dec. 10, 1.9	− 15.02	0.000	+ 0.23	− 0.05
20, 4.1	− 5.23	+ 0.023	+ 0.07	+ 0.02

Dec. 16, 15ʰ. Image east 0ʳ.10. Clamp east.
Image west 0ʳ.16. Clamp west.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Dec. 23	*+35° 50′ . . .	1	52.3	54.5	55.9	. .	. .	. .	. .	. .	15.1	16.4	18.7	10 5.48	+ 0.17	− 5.20	0 10 0.45	+ 0.74
Y.	Weisse (2) 256. .	2	. .	. .	. .	38.1	39.9	41.9	0.5	3.1	4.7	6.4	7.7	10 55.29	− 31.47	5.20	0 10 18.62	0.73
	Lalande 251 . .	3	. .	. .	. .	. .	. .	. .	26.4	28.9	30.5	32.0	33.6	11 30.28	− 40.56	5.20	0 10 44.52	0.73
	*+2° 8′. . . .	4	45.9	47.4	48.7	49.9	52.2	. .	52.3	54.5	55.8	57.2	58.3	35 22.22	+ 0.28	5.19	0 35 17.31	0.71
	*+2° 3′. . . .	5	13.8	15.7	16.9	. .	. .	. .	. .	. .	40.6	41.7	43.5	35 28.70	+ 0.07	5.19	0 35 23.58	0.71
	*−24° 35′ . . .	6	25.7	27.5	28.7	39.5	40.7	42.2	43.4	44.5	54.9	56.1	58.0	56 41.93	− 0.03	5.18	0 56 36.72	0.77
	Neptune . . .	7	14.6	16.4	17.5	27.0	28.2	29.5	30.6	31.8	41.3	42.3	44.2	4 29.40	+ 0.03	5.18	1 4 24.25	
	*+2° 17′ . . .	8	23.2	24.9	26.1	35.8	36.9	38.2	39.4	40.7	. .	. .	. .	13 33.15	+ 4.99	5.18	1 13 32.96	0.59
	θ Ceti	9	21.2	23.0	24.2	34.0	35.0	36.3	37.5	38.5	48.2	49.3	51.2	17 36.22	0.00	5.18	1 17 31.04	+ 0.60
	Polaris	10	. .	. .	. .	. .	. .	. .	. .	. .	48.0	34.0	49.0	20 43.67	− 8 59.86	5.18	. . . .	− 20.84
	Jupiter I . . .	11	30.6	32.0	33.2	43.6	44.7	46.0	47.3	48.4	58.0	59.3	1.2	36 45.85	+ 0.04	5.15	2 36 40.74	
	Jupiter II . . .	12	11.8	13.2	14.5	15.9	18.3	. .	20.0	22.2	23.5	25.0	26.1	36 49.05	0.30	5.15	2 36 44.20	
	α Ceti	13	19.5	21.2	22.2	32.0	33.0	34.3	35.5	36.6	46.0	47.2	48.9	55 34.22	0.02	5.14	2 55 29.10	+ 0.08
	Weisse 23 . . .	14	13.9	15.9	17.1	26.6	27.7	29.2	30.4	31.5	41.1	42.2	43.9	3 29.05	0.00	5.14	3 3 23.91	0.00
	Weisse 144 . .	15	3.0	4.7	5.7	15.6	16.8	18.0	19.3	20.3	29.7	30.9	32.5	9 17.86	0.00	5.14	3 9 12.72	− 0.03
	60 Arietis	16	32.0	34.0	35.4	46.0	47.3	48.7	50.0	51.2	1.4	2.7	4.8	12 48.50	+ 0.08	5.13	3 12 43.45	0.04
	*−22° 31′ . . .	17	1.6	3.4	5.0	15.4	16.6	17.9	19.2	20.5	30.7	31.8	33.6	32 17.79	− 0.02	5.13	3 32 12.64	0.26
	*+11° 17′ . . .	18	9.5	10.6	11.9	13.2	15.7	. .	. .	. .	. .	. .	. .	39 12.18	+ 34.28	5.12	3 39 41.34	0.08
	Weisse (2) 901. .	19	9.8	11.4	12.9	. .	. .	. .	. .	. .	37.2	38.6	40.3	41 25.03	0.10	5.12	3 41 20.01	0.08
	Weisse 774 . .	20	22.3	24.8	26.1	. .	. .	. .	. .	. .	50.8	52.0	53.9	41 38.32	+ 0.10	5.12	3 41 33.30	0.08
	γ Eridani. . . .	21	48.0	49.7	51.0	0.7	1.9	3.2	4.5	5.6	5.2	6.5	8.5	52 3.16	− 0.01	5.12	3 51 58.03	− 0.23
24	α Lyræ	22	16.3	18.4	20.0	32.3	33.7	35.5	36.9	38.3	50.3	51.8	54.2	32 35.25	+ 0.11	5.49	. . . .	+ 2.34
28	ε Piscium . . .	23	58.7	0.3	1.6	11.0	12.3	13.6	14.9	15.8	25.3	26.5	28.0	56 13.45	0.06	2.38	0 56 11.13	+ 0.72
B.	Neptune . . .	24	10.4	12.1	13.2	22.9	24.0	25.3	26.5	27.5	37.0	38.1	40.0	4 25.18	0.06	2.38	1 4 22.86	
	Polaris	25	. .	. .	. .	54.0	43.0	31.0	20.0	4.0	. .	. .	. .	11 30.40	6.20	2.39	. . . .	− 16.58
	η Piscium . . .	26	18.1	20.2	21.3	31.0	32.3	33.7	34.7	36.0	45.8	46.9	48.7	24 33.52	0.08	2.39	1 24 31.21	+ 0.54
	Jupiter I . . .	27	24.9	26.2	27.7	28.9	31.2	. .	33.2	35.3	37.1	38.2	39.7	36 2.24	0.34	2.41	2 36 0.17	
	Jupiter II . . .	28	50.3	51.9	53.2	3.0	3.9	5.4	6.6	7.9	17.6	18.6	20.4	36 5.35	+ 0.08	2.41	2 36 3.02	
	O. Arg. S. 2488 .	29	0.5	2.0	3.4	13.9	14.9	16.2	17.4	18.9	28.8	30.0	32.0	38 16.18	− 0.03	2.43	3 38 13.72	− 0.22
	B. A. C. 1179 . .	30	55.6	57.3	58.6	9.9	11.2	12.4	13.6	15.0	26.0	27.3	29.5	41 12.40	0.05	2.43	3 41 9.92	0.33
	γ Eridani. . .	31	. .	. .	. .	58.0	59.3	0.3	1.8	3.0	12.5	13.9	15.7	52 5.56	− 5.11	2.44	3 51 58.01	0.20
	Weisse (2) 160 .	32	6.0	7.2	8.4	9.5	12.4	. .	16.1	18.5	20.2	21.4	22.2	9 44.19	+ 0.37	2.44	4 9 42.12	0.19
	Weisse (2) 166 .	33	. .	. .	. .	50.2	51.2	52.4	54.0	55.1	5.0	6.2	8.1	9 57.77	− 5.19	2.44	4 9 50.14	0.19
	Lacaille 1463 . .	34	. .	. .	. .	59.7	0.9	3.0	21.0	23.6	25.2	26.3	27.9	23 15.95	− 30.49	2.45	4 22 43.01	0.60
	Weisse 721. . .	35	59.3	0.9	2.4	12.1	13.2	14.4	15.6	16.7	26.2	27.5	29.2	34 14.32	+ 0.02	2.45	4 34 11.89	0.32
	B. A. C. 1460 . .	36	. .	. .	. .	14.0	15.0	16.4	17.4	18.6	28.3	29.5	31.3	37 21.31	− 4.98	2.45	4 37 13.88	0.25
	Lacaille 1580 . .	37	29.2	30.7	32.2	42.2	43.8	44.4	46.4	47.7	58.3	59.4	1.2	40 44.14	0.04	2.46	4 40 41.64	0.52
	*−23° 32′ . . .	†38	53.7	55.6	57.0	7.3	8.5	10.0	11.4	12.4	22.5	23.9	26.2	45 9.86	− 0.03	2.46	4 45 7.37	0.53
	B. A. C. 1518 . .	†39	6.6	8.8	10.2	20.6	22.0	23.3	24.5	26.0	36.0	37.3	39.3	48 23.15	+ 0.12	2.46	4 48 20.81	0.30
	*+1° 21′ . . .	40	. .	. .	. .	20.8	21.8	23.5	39.0	41.0	42.4	43.7	44.9	50 34.64	− 25.56	2.46	4 50 6.62	0.31
	B. A. C. 1578 . .	41	46.3	48.0	49.6	0.4	1.7	3.0	4.4	5.6	16.2	17.4	19.3	0 2.90	0.04	2.46	5 0 0.40	0.63
	α Leporis. . .	42	47.6	49.3	50.4	0.7	1.8	3.0	4.3	5.6	15.4	16.5	18.4	27 3.00	− 0.01	2.47	5 27 0.52	0.57
	*+7° 18′ . . .	43	0.4	2.2	3.5	13.1	14.2	15.5	16.5	17.6	27.2	28.2	30.1	49 15.32	+ 0.06	2.48	5 49 12.90	− 0.38
29	*+3° 43′ . . .	44	36.8	38.1	39.4	. .	. .	. .	. .	. .	3.2	4.4	6.2	55 51.35	0.10	2.04	0 55 49.41	+ 0.75
Y.	*+3° 42′ . . .	45	43.2	44.7	46.2	. .	. .	. .	. .	. .	9.8	11.0	12.6	55 57.92	0.10	2.04	0 55 55.98	0.75
	Weisse 989 . .	46	1.1	2.5	3.9	13.8	15.2	16.4	17.5	18.8	28.5	29.5	31.5	57 16.25	0.08	2.04	0 57 14.29	+ 0.70
	Neptune . . .	47	10.0	11.8	12.9	22.6	23.7	24.9	26.1	27.2	36.6	37.8	39.7	4 24.85	0.05	2.04	1 4 22.86	
	Polaris	48	. .	. .	. .	54.0	42.0	32.5	20.0	5.5	. .	. .	. .	11 30.80	4.85	2.04	. . . .	− 15.82
	θ Ceti	49	17.9	19.7	20.9	30.7	31.9	33.0	34.4	35.5	44.9	46.0	47.9	17 32.98	0.02	2.04	. . . .	+ 0.67
	B. A. C. 494 . .	50	43.5	9.0	27.0	54.5	12.5	33.0	50.0	8.0	34.5	52.0	19.0	34 31.18	+ 2.62	− 2.04	1 34 31.76	− 7.10

38. Faint and hazy.
39. Unsteady.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Dec. 23, 2.0	− 5.16	+ 0.023	+ 0.11	+ 0.02
28, 2.9	− 2.42	− 0.020	+ 0.16	+ 0.04

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0
1869.			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
Dec. 29 Y.	Weisse 800. . .	1	. .	. .	. .	29.3	30.7	32.0	33.3	34.3	43.9	45.1	46.9	45 36.94	− 5.10	− 2.04	1 45 29.80	+ 0.50
	B. A. C. 619 . .	2	43.3	45.5	47.0	59.9	1.2	3.1	4.7	6.0	18.7	20.2	22.6	54 2.93	0.06	2.04	1 54 0.83	0.36
	*−41° 22′ . . .	3	44.0	46.2	47.9	0.6	1.8	3.8	5.3	6.9	19.3	20.9	23.3	55 3.64	− 0.06	2.04	1 55 1.54	0.36
	ξ^1 Ceti.	4	53.4	55.0	56.2	5.9	7.1	8.5	9.6	10.7	20.2	21.3	23.2	6 8.28	+ 0.06	2.04	2 6 6.30	0.35
	Jupiter I . . .	5	18.4	19.7	21.0	22.4	24.9	. .	26.7	29.0	30.2	31.6	32.8	35 55.67	0.34	2.04	2 35 53.97	
	Jupiter II . . .	6	43.8	45.5	46.6	56.5	57.8	59.2	0.5	1.6	11.3	12.4	14.1	35 59.03	+ 0.08	2.04	2 35 57.07	
	O. Arg. S. 1780 .	7	. .	6.2	7.7	18.8	20.0	21.3	22.5	23.8	35.0	36.2	. .	38 21.28	− 0.03	2.04	2 38 19.21	0.10
	(132) Washington .	8	27.0	28.8	30.2	39.6	41.2	42.5	43.6	44.5	54.5	56.0	57.3	52 42.29	+ 0.07	2.04	2 52 40.32	+ 0.11
	*−22° 31′ . . .	9	58.7	0.4	1.9	12.0	13.3	14.6	15.8	17.0	27.4	28.7	30.5	32 14.57	− 0.01	2.04	3 32 12.52	− 0.18
	O. Arg. S. 2488 .	10	59.6	1.5	2.7	13.3	14.3	15.6	16.8	18.2	28.4	29.5	31.5	38 15.58	0.01	2.04	3 38 13.53	0.21
	O. Arg. S. 2504 .	11	1.6	3.5	4.7	15.0	16.4	17.8	19.1	20.3	30.6	31.8	33.7	39 17.68	0.01	2.04	3 39 15.63	0.23
	O. Arg. S. 2548 .	12	17.8	19.9	21.1	31.7	32.9	34.5	35.8	36.8	47.5	48.8	50.8	42 34.33	0.02	2.04	3 42 32.27	0.28
	*−26° 50′ . . .	13	53.3	55.2	56.5	7.3	8.5	10.0	11.5	12.6	23.0	24.5	26.5	58 9.86	− 0.02	2.04	3 58 7.80	0.26
	*− 7° 50′ . . .	14	47.8	49.1	50.3	. .	. .	. .	. .	. .	14.4	15.7	17.5	2 2.47	+ 0.07	2.04	4 2 0.50	0.20
	*− 7° 48′ . . .	15	57.3	59.0	0.2	. .	. .	. .	. .	. .	24.0	25.4	27.0	2 12.15	+ 0.07	2.04	4 2 10.18	0.20
	Lacaille 1374 . .	16	54.3	56.5	57.9	9.7	11.0	12.4	13.9	15.3	26.9	28.3	30.5	5 12.43	− 0.04	2.04	4 5 10.35	0.55
	Lalande 7987 . .	17	49.2	50.9	52.0	2.0	3.2	4.6	5.8	7.0	16.8	17.9	20.0	10 4.49	+ 0.08	2.04	4 10 2.53	0.18
	*−7° 50′ . . .	18	29.4	31.2	32.5	42.9	44.2	45.6	46.8	48.0	58.5	59.7	1.7	13 45.50	0.02	2.04	4 13 43.48	0.24
	Weisse (2) 344 .	19	47.0	48.8	50.0	0.1	1.2	2.6	3.8	4.8	14.7	15.9	17.7	17 2.42	0.08	2.04	4 17 0.46	0.20
	*+16° 30′ . . .	20	43.4	45.2	46.3	56.3	57.4	58.9	0.0	1.2	11.1	12.3	14.3	18 58.76	+ 0.08	2.04	4 18 56.80	0.21
	Lacaille 1564 . .	21	53.6	55.2	56.8	8.0	9.4	10.8	12.2	13.5	24.4	25.7	27.7	38 10.66	− 0.03	2.04	4 38 8.59	0.63
	*+22° 35′ . . .	22	. .	. .	. .	41.6	43.0	44.4	45.7	46.9	. .	. .	. .	45 44.32	+ 0.04	2.04	4 45 42.32	0.29
	*+22° 35′ . . .	23	. .	. .	. .	2.8	4.0	5.4	6.7	7.9	18.1	19.3	21.4	46 10.70	− 5.27	2.04	4 46 3.39	0.29
	Schjellerup 1589 .	24	38.8	40.5	41.8	51.3	52.5	53.8	54.9	56.0	5.5	6.5	8.3	50 53.63	+ 0.04	2.04	4 50 51.63	0.31
	11 Orionis	25	55.4	57.1	58.4	8.4	9.6	10.8	11.9	13.2	22.9	24.2	26.0	57 10.72	0.08	2.04	4 57 8.76	0.30
	*+29° 39′ . . .	26	7.6	9.6	11.0	. .	23.3	24.7	26.0	. .	38.2	39.4	41.6	1 24.60	0.13	2.04	5 1 22.69	0.36
	Weisse (2) 1414 .	27	12.3	14.3	15.6	. .	28.0	29.4	30.7	. .	42.7	44.2	46.3	1 29.28	0.13	2.04	5 1 27.37	0.36
	*+30° 18′ . . .	28	28.7	30.6	31.8	43.0	44.2	45.9	47.3	49.5	59.5	0.9	3.0	5 45.85	+ 0.12	2.04	5 5 43.93	0.37
	O. Arg. S. 3846 .	29	36.3	38.3	39.7	50.4	51.6	53.0	54.3	55.7	6.4	7.7	9.7	12 53.01	− 0.03	2.04	5 12 50.94	0.70
	B. A. C. 1661 . .	30	3.0	4.8	5.9	15.6	16.7	18.0	19.1	20.2	. .	. .	. .	15 12.91	+ 4.99	2.04	5 15 15.86	0.35
	*+3° 26′ . . .	31	29.6	31.2	32.5	42.2	43.4	44.6	45.9	46.9	56.5	57.6	58.9	15 44.48	+ 0.05	2.04	5 15 42.49	0.35
	*+3° 26′ . . .	32	. .	. .	. .	15.2	16.4	18.3	33.2	35.5	36.7	38.4	39.4	16 29.14	− 25.59	2.04	5 16 1.51	0.35
	ε Orionis . . .	33	24.7	26.4	27.6	37.2	38.4	39.6	40.8	41.9	51.3	52.4	54.2	29 39.50	+ 0.04	2.04	5 29 37.50	− 0.41
30	*− 7° 7′ . . .	34	45.7	47.4	48.6	58.4	59.5	0.7	1.8	2.9	. .	. .	. .	34 55.62	+ 5.01	2.43	0 34 58.20	+ 0.94
	*+10° 8′ . . .	35	. .	. .	. .	. .	. .	. .	58.2	0.5	1.6	3.2	4.4	36 1.58	− 33.51	2.43	0 35 25.64	+ 0.85
	Polaris	36	. .	. .	. .	51.0	40.0	33.0	21.0	7.0	. .	. .	. .	11 30.40	+ 4.73	2.42	. . . . .	− 15.06
	Weisse 989 . .	37	1.4	3.2	4.3	14.2	15.5	16.6	18.0	19.0	28.9	30.0	31.8	57 16.63	0.08	2.40	0 57 14.31	+ 0.71
	θ Ceti	38	18.5	20.1	21.4	30.9	32.1	33.4	34.7	35.7	45.2	46.3	48.3	17 33.33	0.03	2.41	1 17 30.95	0.68
	η Piscium . . .	39	18.2	19.9	21.1	31.0	32.0	33.5	34.7	35.8	45.7	46.9	48.6	24 33.40	0.08	2.41	1 24 31.07	+ 0.57
	Jupiter I . . .	40	36.1	37.9	39.0	49.0	50.2	51.4	52.6	53.7	3.4	4.5	6.2	35 51.27	0.08	2.39	2 35 48.96	
	Jupiter II . . .	41	16.9	18.3	19.7	20.8	23.4	. .	25.2	27.2	28.6	30.0	31.3	35 54.14	0.34	2.39	2 35 52.09	
	(132) Washington .	†42	27.8	29.8	31.0	40.2	41.3	42.5	43.8	44.9	54.8	56.4	58.3	52 42.80	0.08	2.38	2 52 40.50	− 0.06
	α Ceti	43	16.5	18.2	19.5	29.0	30.1	31.5	32.7	33.8	43.3	44.4	46.2	55 31.38	0.06	2.38	2 55 29.06	+ 0.13
	*+13° 23′ . . .	44	11.2	12.9	14.1	24.0	25.1	26.6	27.8	28.8	38.3	39.6	41.5	35 26.35	0.08	2.37	3 35 24.06	− 0.06
	O. Arg. S. 2504 .	45	1.7	3.7	5.0	15.5	16.8	18.1	19.5	20.7	31.0	32.2	34.1	39 18.03	0.00	2.37	3 39 15.66	0.22
	Weisse (2) 917 .	46	14.8	16.9	18.3	30.0	31.3	33.0	34.2	35.7	47.1	48.4	50.7	42 32.76	0.15	2.37	3 42 30.54	0.21
	γ^1 Eridani	47	45.2	47.0	48.2	58.1	59.3	0.6	1.9	3.0	12.6	13.8	15.8	52 0.50	+ 0.02	2.36	3 51 58.16	0.19
	O. Arg. S. 2858 .	48	51.3	53.1	54.6	. .	. .	. .	. .	. .	21.4	22.8	24.9	4 8.02	− 0.01	2.38	4 4 5.63	0.41
	*+16° 17′ . . .	49	13.0	15.1	16.4	26.5	27.8	29.2	30.5	31.7	41.2	42.3	44.4	9 28.92	+ 0.09	2.36	4 9 26.65	0.19
	Lalande 7987 . .	50	. .	. .	. .	2.4	3.6	5.0	6.2	7.3	17.1	18.3	20.2	10 10.01	− 5.08	− 2.36	4 10 2.57	− 0.18

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Dec. 29, 3.5	− 2.04	0.000	+ 0.13	+ 0.04
30, 3.0	− 2.38	+ 0.020	+ 0.12	+ 0.05

42. Very faint.

DATE.	OBJECT.	Number.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	VIII	IX.	X.	XI.	Mean.	CORRECTIONS. Inst.	Clock.	Observed R. Ascension.	Reduct'n to 1870.0.
			s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	m. s.	m. s.	s.	h. m. s.	s.
1869. Dec. 30 Y.	*+16° 15′ . . .	1	33.1	35.0	36.4	46.5	47.6	49.0	50.3	51.6	1.4	2.9	4.7	12 48.95	+ 0.09	— 2.36	4 12 46.68	— 0.19
	Weisse (2) 267. .	2	40.0	41.7	43.2	53.3	54.4	55.8	57.0	58.2	8.1	9.3	11.1	13 55.65	0.09	2.36	4 13 53.38	0.20
	Weisse (2) 344 .	3	47.4	49.2	50.5	0.4	1.5	2.9	4.1	5.3	15.1	16.3	18.3	17 2.82	0.09	2.36	4 17 0.55	0.21
	*+16° 32′ . . .	4	43.7	45.5	46.6	56.8	57.9	59.2	0.4	1.6	11.5	12.5	14.5	18 59.11	0.09	2.35	4 18 56.85	0.21
	*+15° 31′ . . .	5	21.3	23.0	24.2	34.2	35.4	36.6	37.8	38.9	48.8	49.9	51.8	25 36.54	0.09	2.35	4 25 34.28	0.22
	Weisse 722. . .	6	52.0	53.7	54.9	4.8	5.9	7.3	8.5	9.7	19.4	20.6	22.4	34 7.20	+ 0.08	2.35	4 34 4.93	0.25
	Lacaille 1568 . .	7	57.8	59.9	1.5	13.6	15.2	16.8	18.5	20.0	31.8	33.0	35.3	38 16.67	— 0.03	2.35	4 38 14.29	0.83
	Lacaille 1595 . .	8	31.0	33.3	34.6	46.4	47.8	49.3	50.8	52.2	4.0	5.2	7.5	41 49.28	— 0.03	2.35	4 41 46.90	0.76
	*—23° 30′ . . .	9	53.7	55.4	56.7	7.2	8.6	9.8	11.1	12.3	22.6	23.7	25.6	45 9.70	0.00	2.35	4 45 7.35	0.53
	*+30° 1′ . . .	10	43.6	45.6	47.0	57.8	59.0	0.9	2.5	3.8	14.4	15.5	17.7	49 0.71	+ 0.13	2.34	4 48 58.50	0.48
	Weisse (2) 1079 .	11	. .	. .	. .	27.2	28.6	30.7	48.0	50.6	52.0	53.7	54.9	49 43.21	— 29.42	2.34	4 49 11.45	0.34
	*—28° 46′ . . .	†12	23.8	25.5	26.9	. .	. .	. .	. .	. .	54.2	55.9	57.7	54 40.67	+ 0.04	2.34	4 54 38.37	0.66
	γ^1 Ceti	13	29.0	31.0	32.6	44.5	45.8	47.4	48.8	50.1	1.9	3.3	5.3	59 47.25	— 0.02	2.34	4 59 44.89	0.84
	O. Arg. S. 3710 .	14	18.3	20.0	21.5	32.2	33.4	34.8	36.2	37.4	47.8	48.8	50.9	3 34.66	0.00	2.34	5 3 32.32	0.63
	O. Arg. S. 3720 .	15	. .	. .	. .	8.9	10.2	11.8	13.0	14.4	24.8	25.9	27.9	4 17.11	5.50	2.34	5 4 9.27	0.63
	O. Arg. S. 3846 .	16	36.7	38.7	39.9	51.0	52.3	53.6	55.0	56.2	6.8	8.0	10.2	12 53.49	— 0.01	2.34	5 12 51.14	0.70
	β Tauri	17	50.3	52.0	53.6	4.3	5.5	7.1	8.3	9.6	20.5	21.7	23.9	18 6.98	+ 0.13	2.33	5 18 4.78	— 0.38
31	*+2° 8′. . . .	†18	9.1	11.0	12.1	21.5	22.7	23.9	25.0	26.2	35.9	36.9	38.6	35 23.90	— 0.07	2.61	0 35 21.22	+ 0.90
	*+2° 9′. . . .	†19	52.9	54.0	55.4	56.6	58.8	. .	58.9	1.3	2.5	3.8	5.0	35 28.92	— 0.33	2.61	0 35 25.98	+ 0.90
	Polaris	20	10.5	23.0	12.0	43.5	30.0	15.0	11.0	58.0	35.0	24.5	33.0	11 21.41	+ 12.31	2.61	. . . . .	— 14.26
	β Arietis	21	14.0	16.0	17.3	27.4	28.5	29.7	31.1	32.4	42.6	43.9	45.6	47 29.86	+ 0.06	2.61	. . . . .	+ 0.42
	Jupiter I . . .	22	10.6	11.8	13.2	14.5	16.7	. .	18.5	21.0	22.3	23.5	24.7	35 47.68	— 0.24	2.61	2 35 44.83	
	Jupiter II . . .	23	35.2	37.0	38.3	48.1	49.1	50.3	51.6	52.9	2.7	3.9	5.6	35 50.43	+ 0.02	2.61	2 35 47.84	
	Lacaille 891 . .	24	55.4	56.6	57.9	59.3	0.5	. .	33.4	36.3	37.7	39.0	40.4	44 17.65	— 19.96	— 2.61	2 43 55.08	+ 0.07

12. Faint and uncertain.
18.19. Position in declination uncertain; finding-circle deranged.
Dec. 31, 20^h. Image west 0^r.17. Clamp west.
Image 0^r.00. Clamp east.

CORRECTIONS, &c.

Date.	Error of clock.	Hourly rate.	n	c
1869. h.	s.	s.	s.	s.
Dec. 31, 1.8	— 2.61	0.000	+ 0.39	— 0.08

OBSERVATIONS

OF THE

NADIR POINT MADE TO DETERMINE THE ZENITH POINT CORRECTION

OF THE

TRANSIT CIRCLE

OBSERVATIONS OF THE NADIR POINT MADE TO DETERMINE THE ZENITH POINT CORRECTION OF THE TRANSIT CIRCLE.

Day and sidereal hour.			Observer.	READINGS OF MICROSCOPE MICROMETERS.				Telescope Micrometer.	Circle reading.	Zenith Point correction.
				V.	VI.	VII.	VIII.		179° 58′	
1869.	d.	h.		r ″	″	″	″	r	″	″
January	6.1	20	N.	0.4	2.3	6.0	0.5	25.745	61.00	56.24
	6.3	2	N.	2.2	4.4	7.8	1.3	25.639	61.13	56.11
	6.5	7	N.	4.8	6.8	9.5	4.1	25.486	61.03	56.21
	7.0	19½	F.	4.8	6.4	10.4	3.6	25.465	60.73	56.51
	7.4	5½	F.	1.0	2.0	6.4	0.2	25.755	61.25	55.99
	12.3	7	F.	3.6	6.4	9.1	1.2	25.538	60.62	56.62
	13.3	2	N.	3.1	5.6	8.3	2.0	25.598	61.20	56.04
	13.5		N.	2.5	4.1	7.5	1.4	25.646	61.06	56.18
	16.0	21	F.	6.9	9.4	12.3	6.2	25.359	61.51	55.73
	16.4	5	F.	3.2	5.2	9.3	3.0	25.570	61.21	56.03
	19.3	2	F.	0.6	2.0	4.8	28.6	25.723	59.87	57.37
	19.3	2	N.	1.2	2.2	4.7	28.6	25.731	60.16	57.08
	19.6	9	F.	5.0	5.7	8.5	3.2	25.440	59.65	57.59
	19.9	18¾	N.	4.8	7.5	9.8	2.6	25.478	60.82	56.42
	20.3	2	N.	1.1	3.5	5.8	29 4	25.705	60.50	56.74
	20.5	8½	N.	9 29.8	1.6	4.8	27.8	25.765	59.98	57.26
	22.4	5	F.	9 28.4	0.9	3.1	27.2	25.859	60.33	56.91
	23.4	6	F.	2.2	4.3	6.6	1.3	25.602	60.12	57.12
	23.5	9	F.	9 24.8	26.0	29.7	23.2	26.113	60.26	56.98
	26.0	21	F.	9 28.8	0.2	2.4	25.3	25.956	61.11	56.13
	26.4	4	F.	4.6	7.9	9.3	2.4	25.499	60.99	56.25
	27.5	9	F.	4.3	6.2	8.8	0.6	25.514	60.13	57.11
	30.4	7	F.	1.2	3.6	4.1	25.8	33.737	62.29	54.95
February	1.4	8	N.	2.2	5.0	6.4	28.5	25.788	62.36	54.88
	5.3	4	F.	9 26.3	27.9	1.2	22.4	25.971	59.09	58.15
	5.5	10	F.	9 28.5	0.6	2.6	24.5	25.853	59.40	57.84
	6.0		T.	4.0	0.3	5.8	28.6	25.625	59.05	58.19
	6.5		T.	9 27.3	27.5	2.6	22.8	25.943	59.27	58.07
	8.4	6	N.	6.1	6.8	11.2	3.3	25.073	55.29	61.95
	10.4		T.	17.6	17.3	21.5	13.5	24.382	55.34	61.90
	11.0	22	N.	13.3	11.9	15.8	8.9	24.738	55.80	61.44
	11.4	6	N.	6.8	5.8	9.9	2.4	25.195	56.50	60.74
	11.5	9	N.	2.4	2.5	5.8	27.0	25.534	57.41	59.83
	12.0	22	F.	3.5	4.0	7.7	0.9	25.491	56.83	60.41
	12.5	9½	F.	1.8	2.3	5.5	28.1	25.483	56.61	60.63
	13.0		T.	4.4	3.8	5.6	26.5	25.503	57.58	59.66
	13.5		T.	5.0	5.5	7.2	29.7	25.418	58.05	59.19
	14.9		N.	7.8	7.6	9.5	1.6	25.328	58.96	58.28
	15.4	5½	N.	1.2	2.1	2.8	24.2	25.776	59.26	57.98
	15.5		N.	5.2	7.2	6.9	28.6	25.522	59.76	57.48
	16.0	22	F.	9 25.0	24.9	26.8	18.2	18.309	58.88	58.36
	16.3	5	F.	9 19.9	21.2	24.3	15.4	26.338	57.99	59.25
	16.5	9	F.	9 22.2	22.8	24.2	16.0	26.250	57.73	59.51
	18.1	0	N.	5.4	6.6	8.6	29.8	25.317	57.25	59.99
	19.3	5½	F.	3.6	3.7	4.3	20.7	25.644	57.73	59.51
	19.5	9½	F.	3.8	2.5	8.4	25.1	25.573	58.52	58.72
	20.0		T.	6.5	5.2	10.3	28.3	25.333	57.49	59.75
	20.5		T.	3.4	1.6	9.0	25.8	25.507	57.50	59.74
	24.0		T.	2.0	1.8	7.5	26.8	25.460	56.39	60.85
	24.5		T.	0.4	29.4	5.8	23.5	25.570	55.81	61.43
	27.5		T.	9 28.3	29.2	5.8	22.9	25.522	54.35	62.89
March	1.1	1	F.	10.4	13.1	20.2	7.7	24.694	55.50	61.74
	1.3	7	F.	3.6	4.1	9.9	26.8	25.261	54.91	62.33
	3.0		T.	21.4	21.2	27.1	13.7	26.177	56.16	61.08
	4.9	22¾	F.	2.8	1.4	7.2	23.2	25.492	55.98	61.26
	5.3	8	F.	2.5	3.4	10.2	26.5	25.332	55.53	61.71
	9.0	23½	F.	7.1	4.8	11.9	0.7	25.111	55.17	62.07
	10.9		N.	6.8	6.6	11.6	28.8	25.408	59.50	57.74
	12.0	0	F.	11.0	10.5	14.8	3.7	25.177	60.02	57.22
	12.3	8	F.	7.6	8.1	12.6	0.2	25.379	60.23	57.01
	13.1		T.	5.7	7.4	11.6	27.9	25.411	59.25	57.99
	13.4		T.	0.2	29.6	5.2	22.7	25.846	59.66	57.58

Day and sidereal hour.			Observer.	READINGS OF MICROSCOPE MICROMETERS.				Telescope Micrometer.	Circle reading.	Zenith Point correction.
				V.	VI.	VII.	VIII.		179° 58'	
1869.	d.	h.		r ″	″	″	″	r	″	″
March	15.4	10	N.	2.8	4.8	8.4	25.3	25.723	61.18	56.06
	16.0	0½	F.	7.0	7.2	12.0	28.2	25.301	58.01	59.23
	16.4	9½	F.	5.7	6.2	10.5	28.0	25.370	58.07	59.17
	17.4		T.	9 28.4	28.0	3.2	19.5	25.880	58.05	59.19
	18.0	0	N.	1.6	3.0	6.6	24.1	25.634	58.32	58.92
	18.4	9	N.	0.7	2.5	6.0	22.8	25.695	58.44	58.80
	20.3	7	T.	7.2	7.5	11.1	0.4	25.283	58.18	59.06
	23.3	8½	F.	6.2	7.8	11.4	28.9	25.248	57.19	60.05
	23.5	1	F.	0.7	1.9	5.4	22.7	25.683	57.93	59.31
	24.0		T.	3.8	5.0	7.4	25.1	25.448	56.98	60.26
	24.5	13	T.	6.0	5.9	6.6	29.0	25.351	57.05	60.19
	24.7	16	T.	10.2	9.8	14.0	2.3	25.148	58.66	58.58
	27.0		T.	19.8	19.5	23.0	10.5	24.588	59.22	58.02
	27.4		T.	11.6	11.7	14.4	4.8	25.147	60.18	57.06
	27.6		T.	11.7	13.0	15.5	4.2	25.142	60.60	56.64
	30.7	18	F.	6.4	9.9	12.0	0.1	25.388	60.34	56.90
	31.0		T.	10.0	6.7	11.0	28.4	25.452	60.77	56.47
	31.4		T.	6.0	8.2	11.2	28.5	25.417	59.67	57.57
	31.6		T.	8.8	11.3	14.2	1.5	25.186	59.10	58.14
April	3.4		T.	5.5	7.0	9.5	27.5	25.353	57.58	59.66
	4.9		N.	1.1	2.4	4.5	22.4	25.685	57.89	59.35
	6.0	2	F.	9 27.7	29.2	0.7	20.6	26.025	60.03	57.21
	7.1		T.	7.9	9.4	11.0	29.4	25.368	59.87	57.37
	7.5		T.	4.5	6.6	8.6	27.1	25.586	60.51	56.73
	8.3	9.9	N.	2.1	5.4	6.8	25.2	25.620	59.16	58.08
	9.3	8	F.	9 27.5	0.0	3.4	20.6	25.877	58.60	58.64
	9.5	13	F.	6.0	9.2	10.9	28.4	25.321	58.32	58.92
	13.3	9	F.	9 29.9	1.5	4.8	21.7	25.619	56.24	61.00
	13.5	1½	F.	9 29.0	0.4	3.4	20.2	25.718	56.54	60.70
	14.5		T.	4.6	4.4	7.4	26.6	25.416	56.91	60.33
	16.1	5	F.	0.2	0.7	4.1	25.4	25.893	61.07	56.17
	16.2		F.	9 29.4	0.1	2.3	21.2	25.978	60.52	56.72
	16.5	14	F.	2.0	3.2	4.5	23.6	25.788	60.19	57.05
	17.5		Ha.	2.6	5.2	6.6	23.6	25.793	61.43	55.81
	19.3		N.	12.6	12.8	15.5	2.0	25.541	66.29	50.95
	19.5	13	N.	11.8	12.7	15.3	1.3	25.579	66.45	50.79
	21.4		Ha.	7.1	11.9	13.4	27.9	25.948	69.39	47.85
	22.3	9	N.	4.3	8.6	12.0	24.6	26.121	69.35	47.89
	22.5	14	N.	7.3	10.9	14.8	28.4	25.950	69.69	47.55
	24.4	12	F.	6.6	9.2	12.7	28.0	25.955	68.54	48.70
	27.0		F.	4.5	5.6	9.0	25.8	26.138	68.44	48.80
	29.7	18	N.	4.0	7.2	9.2	24.4	26.045	67.00	50.24
May	2.9	3	N.	2.5	3.6	5.4	20.9	25.943	62.34	54.90
	3.5	15	N.	2.4	3.2	6.1	20.9	25.916	61.97	55.27
	4.0	3	F.	9 28.6	29.9	1.1	19.2	26.220	61.91	55.33
	4.4	11½	F.	9 25.4	27.0	29.4	15.6	26.410	63.21	54.03
	4.6		F.	4.8	6.4	8.0	24.3	25.792	62.79	54.45
	5.4	12	Ha.	1.8	4.5	6.0	20.7	25.946	62.53	54.71
	8.2	10½	F.	4.0	5.8	8.2	24.9	25.778	62.41	54.83
	10.5		N.	5.8	6.9	7.8	23.1	25.915	64.71	52.53
	15.0	4	F.	3.2	6.6	6.7	23.4	26.064	66.06	51.18
	15.5	16½	F.	4.7	5.9	6.8	22.6	26.053	65.91	51.33
	17.4	14½	N.	2.6	5.4	6.1	20.8	26.029	64.29	52.95
	20.3	11	N.	9 29.4	1.7	2.4	29.6	26.195	66.37	50.87
	20.5		N.	2.2	4.8	5.8	2.6	26.023	66.80	50.44
	22.5	16½	F.	1.4	3.4	4.8	0.2	26.019	65.33	51.91
	24.4	14½	N.	5.6	8.0	8.4	5.0	25.851	67.08	50.16
	24.5	16½	N.	7.2	10.2	10.2	7.4	25.740	67.38	49.86
	25.5	16½	F.	0.8	2.7	2.9	29.2	26.160	66.45	50.79
	26.5		Ha.	11.4	13.8	13.4	10.3	25.617	68.95	48.29
June	3.4	15	N.	10.6	14.2	12.0	8.2	25.937	72.90	44.38
	5.4		F.	14.4	17.8	15.4	11.1	25.686	72.48	44.76

OBSERVATIONS

WITH THE

MURAL CIRCLE.

1869.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Jan. 6	1	ν Andromedæ . . .	. .	3	IV–VI.	278 30 3.0	1.9	53.6	15.0	3.0	6.2	3.78	26.890	+ 0.004	26.891
	2	B. A. C. 269 . . .	. .	3	III–VII.	305 55 2.2	59.9	52.2	12.1	1.0	3.9	1.88	31.992	. .	31.994
	3	μ Cassiopeæ . . .	. .	3	IV–VI.	264 35 2.0	1.0	56.1	17.8	4.0	7.0	4.65	26.003	. .	26.003
	4	Weisse I, 208 . .	8.0	3	III–VII.	307 40 6.2	4.8	57.0	15.3	6.0	8.1	6.23	32.438	. .	32.440
	5	Anon. 1h 26m 3s . .	. .	3	III–VII.	303 55 6.8	4.8	58.9	17.9	8.3	8.8	7.58	36.158	. .	36.159
	6	Anon. 1h 31m 15s .	9.0	3	III–VII.	315 25 6.9	4.0	57.9	16.0	7.0	8.2	6.67	24.462	. .	24.465
	7	B. A. C. 539 . .	. .	3	III–VII.	325 20 6.2	4.1	56.0	15.0	5.0	5.6	5.32	37.414	. .	37.419
	8	Anon. 1h 43m 3s . .	8.0	2	III, V.	305 15 6.0	3.0	56.3	16.7	4.8	6.5	5.55	36.976	. .	36.981
	9	Anon. 1h 43m 15s .	9.0	1	IX.	“ “ “	“	“	“	“	“	“	32.414	. .	32.397
	10	Durchmusterung 217	8.0	3	III–VII.	320 30 6.0	3.8	58.0	14.1	4.0	5.9	5.30	26.880	. .	26.884
	11	O. Arg. S. 1266 . .	8.0	3	III–VII.	344 40 6.0	3.2	58.8	16.8	4.0	4.3	5.52	35.230	. .	35.239
	12	Anon. 2h 4m 38s . .	8.0	4	II, III, VIII, IX.	347 45 6.0	5.0	0.2	19.8	3.7	6.0	6.78	31.762	. .	31.782
	13	Lacaille 649 . . .	7.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	36.237	. .	36.243
	14	Anon. 2h 12m 44s. .	8.0	3	III–VII.	323 40 5.2	3.9	57.8	14.9	4.4	5.1	5.22	36.292	. .	36.297
	15	Lacaille 726 . . .	. .	3	III–VII.	345 20 5.0	3.0	58.2	14.9	3.0	3.0	4.52	33.237	. .	33.246
	16	Lacaille 767 . . .	. .	3	III–VII.	352 35 5.1	5.0	58.2	19.2	3.0	4.1	5.77	35.248	. .	35.258
	17	Lacaille 789 . . .	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	35.415	. .	35.425
	18	O. Arg. S. 1744 . .	. .	3	III–VII.	337 15 4.7	2.5	57.0	15.0	2.0	3.2	4.07	29.545	. .	29.552
	19	Weisse II, 694 . .	9.0	3	III–VII.	306 30 5.9	4.2	57.0	15.7	5.0	7.8	5.93	31.809	. .	31.811
	20	B. A. C. 894 . . .	. .	3	IV–VI.	350 15 6.9	5.1	0.3	20.1	4.0	5.4	6.97	34.624	. .	34.630
	21	B. A. C. 978 . . .	6.0	3	IV–VI.	347 15 6.8	4.0	1.0	19.0	3.2	5.7	6.62	36.549	. .	36.551
	22	Anon. 3h 7m 9s . .	8.0	3	I, III, V.	337 0 7.0	4.3	59.2	16.7	4.0	5.0	6.03	30.662	. .	30.678
	23	Anon. 3h 7m 27s . .	9.0	3	V, VII, IX.	“ “ “	“	“	“	“	“	“	32.123	. .	32.129
	24	Weisse III, 228 . .	8.5	3	III–VII.	322 25 6.9	3.8	59.0	17.0	5.0	6.2	6.32	34.735	. .	34.740
	25	Anon. 3h 21m 28s .	. .	2	IV, V.	281 50 6.9	5.0	59.3	18.2	5.7	9.1	7.37	21.005	. .	21.009
	26	Weisse (2) III, 420 .	. .	2	VII, IX.	“ “ “	“	“	“	“	“	“	18.777	. .	18.750
	27	Weisse (2) III, 461 .	. .	2	V–VI.	“ “ “	“	“	“	“	“	“	26.416	. .	26.416
	28	Weisse (2) III, 464 .	. .	2	VIII, IX.	“ “ “	“	“	“	“	“	“	30.934	. .	30.901
	29	Rumker 940 . . .	9.0	3	III–VII.	304 30 7.0	5.7	59.3	19.0	7.0	9.0	7.83	28.147	. .	28.149
	30	O. Arg. S. 2571 . .	8.0	3	III–VII.	346 25 7.0	4.9	1.0	18.0	3.9	6.2	6.83	35.647	. .	35.656
	31	Nadir	. .	.	. .	100 0 6.2	7.4	59.0	20.8	7.1	10.0	8.42	30.144	. .	. .
13	32	B. A. C. 469 . . .	. .	3	III–VII.	301 5 6.2	7.0	59.1	18.9	6.9	8.0	7.68	28.597	— 0.010	28.584
	33	51 Andromedæ . . .	. .	3	IV–VI.	271 0 6.2	6.8	59.2	22.9	7.2	9.0	8.55	38.193	. .	38.180
	34	4 Arietis	. .	3	III–VII.	302 35 6.0	5.5	58.1	18.8	5.7	5.4	6.58	29.942	. .	29.929
	35	O. Arg. S. 1116 . .	. .	3	III–VII.	342 20 4.0	3.6	58.7	18.0	2.1	1.6	4.67	35.691	. .	35.685
	36	Lacaille 570 . . .	. .	3	III–VII.	345 10 3.0	3.3	56.6	15.8	1.0	1.2	3.48	34.949	. .	34.944
	37	θ Arietis	. .	3	III–VII.	299 35 3.0	3.2	56.0	15.8	2.9	4.2	4.18	28.793	. .	28.780
	38	12 Trianguli. . . .	. .	3	III–VII.	289 50 2.8	2.8	56.0	15.2	2.8	4.0	3.93	33.069	. .	33.054
	39	B. A. C. 766 . . .	. .	3	IV–VI.	294 15 3.3	2.0	56.0	17.0	4.0	3.9	4.37	31.628	. .	31.617
	40	B. A. C. 800 . . .	. .	3	III–VII.	311 45 1.7	1.9	55.2	15.2	2.0	2.0	3.00	32.655	. .	32.644
	41	β Fornacis	. .	3	III–VII.	351 50 1.8	3.0	55.8	18.0	0.7	0.1	3.23	33.206	. .	33.202
	42	ζ3 Eridani	. .	3	III–VII.	327 0 4.0	5.0	56.8	17.8	4.0	2.3	4.98	30.787	. .	30.778
	43	Lacaille 988 . . .	. .	3	III–VII.	349 40 3.8	4.0	58.0	19.1	1.1	1.2	4.53	29.549	. .	29.545
	44	19 Tauri	. .	2	III, V.	294 50 4.0	3.8	57.0	18.8	5.1	5.0	5.62	29.790	. .	29.779
	45	21 Tanri	. .	3	V, VI, VII.	“ “ “	“	“	“	“	“	“	40.074	. .	40.058
	46	B. A. C. 1182 . .	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	21.143	. .	21.129
	47	υ1 Tauri	. .	3	III–VII.	296 20 4.0	5.1	56.0	19.0	5.0	5.0	5.68	25.232	. .	25.218
	48	B. A. C. 1450 . .	. .	3	III–VII.	343 35 4.0	5.2	58.2	19.2	3.0	3.0	5.43	27.636	. .	27.630
	49	B. A. C. 1460 . .	. .	3	III–VII.	308 0 2.9	4.8	55.9	16.7	3.1	4.0	4.57	31.539	. .	31.527
	50	B. A. C. 1496 . .	. .	3	IV–VI.	244 50 2.3	4.0	59.0	22.0	2.8	6.7	6.13	28.944	. .	28.924
	51	Weisse IV, 1249. .	. .	3	IV–VI.	288 35 4.0	4.1	56.1	18.2	4.1	4.4	5.15	29.860	. .	29.848
	52	Nadir	. .	.	. .	100 0 3.2	5.2	56.0	20.3	4.0	6.0	5.78	30.074	. .	. .
16	53	101 Piscium	. .	3	III–VII.	304 55 3.8	1.9	55.0	14.8	3.7	5.8	4.17	32.437	— 0.025	32.410
	54	1 Arietis	. .	3	III–VII.	297 15 4.0	2.0	54.8	oblit.	2.3	3.1	3.60	28.325	. .	28.296
	55	α Trianguli. . . .	. .	3	IV–VI.	290 0 4.0	3.1	55.8	16.2	4.0	5.7	4.80	35.705	. .	35.678
	56	B. A. C. 619 . . .	6.0	3	IV–VI.	0 10 4.0	4.0	58.0	19.0	1.5	3.1	4.93	29.718	. .	29.690
	57	Anon. 1h 54m 58s .	6.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	31.124	. .	31.102
	58	Anon. 2h 4m 36s . .	8.5	3	III–VII.	347 45 4.0	3.9	59.0	18.0	2.0	4.7	5.27	31.837	. .	31.817
	59	Weisse II, 155 . .	7.0	3	III–VII.	306 30 3.7	3.0	55.0	14.0	2.9	5.0	3.93	29.901	. .	29.874
	60	Anon. 2h 19m 21s .	7.0	3	III–VII.	313 15 3.4	1.0	55.0	13.1	3.0	3.3	3.08	37.776	. .	37.750
	61	B. A. C. 774	7.0	3	III–VII.	344 40 3.4	2.0	56.9	14.8	2.1	2.0	3.53	33.687	. .	33.666
	62	ν Ceti	. .	3	III–VII.	313 50 3.0	1.1	55.0	14.1	4.1	4.1	3.57	26.500	. .	26.474
	63	Lacaille 816 . . .	. .	3	III–VII.	345 0 2.7	2.0	57.0	14.1	1.0	1.5	3.05	30.261	. .	30.241
	64	Lacaille 891 . . .	. .	3	III–VII.	350 15 2.4	2.4	57.2	16.0	1.0	1.2	3.37	34.451	. .	34.431
	65	Lacaille 932, (1st *) .	. .	4	I, II, VIII, IX.	344 20 2.0	1.1	56.0	14.3	1.0	1.0	2.57	26.242	. .	26.235
	66	Lacaille 932, (2d *) .	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	26.922	. .	26.898

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 37.3	N. 1 28 18.9	1.5	+ 40 21 59.7	+ 13.8	D.	
2	. .	. .	39.1	− 1 2.5	S. 25 53 59.4	29.0	+ 12 59 10.8	+ 22.9	D.	
3	30.112	43.0	. .	+ 2 5.1	N. 15 22 50.3	16.5	+ 54 16 46.0	+ 10.1	D.	
4	. .	. .	. .	− 1 16.5	S. 27 38 49.8	31.4	+ 11 14 18.1	+ 23.6	D.	
5	. .	. .	. .	− 3 13.2	23 51 54.4	26.5	+ 15 1 18.3	+ 22.2	D.	
6	. .	. .	. .	+ 2 53.1	35 27 59.8	42.7	+ 3 24 56.8	+ 36.2	D.	
7	. .	. .	. .	− 3 53.8	45 16 11.0	1 0.5	− 6 23 32.8	+ 29.5	D.	
8	. .	. .	. .	− 3 39.0	25 11 26.6	28.2	+ 13 41 44.5	+ 22.5	D.	
9	30.112	42.0	37.5	− 1 15.1	25 13 50.4	28.3	+ 13 39 20.5	+ 22.5	D.	
10	. .	. .	. .	+ 1 37.5	40 31 42.8	51.3	− 1 38 54.8	+ 27.7	D.	
11	. .	. .	. .	− 2 44.2	64 37 21.3	2 6.0	− 25 45 48.0	+ 36.3	D.	
12	. .	. .	. .	− 0 55.8	67 44 10.9	2 25.7	− 28 52 57.4	+ 36.0	D.	
13	. .	. .	. .	− 3 15.8	67 41 51.0	2 25.5	− 28 50 37.2	+ 35.9	D.	
14	. .	. .	37.1	− 3 17.5	43 36 47.7	57.2	− 4 44 5.7	+ 28.2	D.	
15	. .	. .	. .	− 1 41.8	65 18 22.8	2 10 0	− 26 26 53.6	+ 34.7	D.	
16	30.121	41.8	36.7	− 2 44.8	72 32 20.9	3 9.1	− 33 41 50.7	+ 36.3	D.	
17	. .	. .	. .	− 2 50.1	72 32 15.7	3 8.9	− 33 41 45.4	+ 36.1	D.	
18	. .	. .	. .	+ 0 14.0	57 15 18.1	1 33.2	− 18 23 12.0	+ 31.5	D.	
19	. .	. .	. .	− 0 56.8	26 29 9.2	29.9	+ 12 24 0.2	+ 21.5	D.	
20	. .	. .	37.8	− 2 25.2	70 12 41.8	2 45.4	− 31 21 47.9	+ 34.4	D.	
21	. .	. .	. .	− 3 25.5	67 11 41.1	2 22.0	− 28 20 23.8	+ 32.6	D.	
22	. .	. .	. .	− 0 21.2	56 59 44.8	1 32.3	− 18 7 37.8	+ 29.5	D.	
23	. .	. .	. .	− 1 6.7	56 58 59.3	1 32.2	− 18 6 52.3	+ 29.5	D.	
24	. .	. .	. .	− 2 28.6	42 22 37.7	54.8	− 3 29 53.3	+ 24.9	D.	
25	. .	. .	. .	+ 4 41.0	1 54 48.3	2.0	+ 36 58 48.9	+ 12.9	D.	
26	. .	. .	. .	+ 5 51.4	1 55 58.8	2.0	+ 36 57 38.4	+ 12.9	D.	
27	. .	. .	. .	+ 1 52.2	1 51 59.5	2.0	+ 37 1 37.8	+ 12.8	D.	
28	. .	. .	. .	− 0 28.2	1 49 39.2	1.9	+ 37 3 58.2	+ 12.8	D.	
29	. .	. .	. .	+ 0 57.9	24 31 5.8	27.4	+ 14 22 6.0	+ 18.5	D.	
30	30.132	41.0	36.5	− 2 54.6	66 22 12.2	2 16.9	− 27 30 49.8	+ 28.8	D.	
31	. .	. .		. .	. . . .	. .	. . . . .	. .	D.	
32	. .	. .	. .	+ 0 44.3	21 5 52.0	23.5	+ 17 47 23.8	+ 21.6	D.	
33	. .	. .	. .	− 4 16.7	N. 9 4 8.1	9.7	+ 47 57 57.1	+ 11.7	D.	
34	. .	. .	. .	+ 0 2.2	S. 22 35 8.8	25.3	+ 16 18 5.1	+ 21.9	D.	
35	. .	. .	. .	− 2 58.3	62 17 6.4	1 55.4	− 23 25 22.5	+ 35.3	D.	
36	30.268	38.2	33.3	− 2 35.0	65 7 28.5	2 10.6	− 26 15 59.8	+ 36.0	D.	
37	. .	. .	. .	+ 0 38.2	19 35 42.4	21.6	+ 19 17 35.3	+ 20.3	D.	
38	. .	. .	. .	− 1 35.7	9 48 28.2	10.5	+ 29 5 0.5	+ 16.7	D.	
39	. .	. .	. .	− 0 50.7	14 14 13.7	15.4	+ 24 39 10.1	+ 18.1	D.	
40	. .	. .	. .	− 1 22.9	31 43 40.1	37.6	+ 7 9 21.5	+ 24.0	D.	
41	30.268	37.8	32.9	− 1 40.3	71 48 22.9	3 3.5	− 32 57 47.1	+ 35.7	D.	
42	. .	. .	. .	− 0 24.4	46 59 40.6	1 4.9	− 8 7 6.2	+ 27.8	D.	
43	. .	. .	32.4	+ 0 14.2	69 40 18.8	2 43.3	− 30 49 22.8	+ 34.0	D.	
44	. .	. .	. .	+ 0 6.9	14 50 12.5	16.1	+ 24 3 10.6	+ 15.6	D.	
45	. .	. .	. .	− 5 15.7	14 44 49.9	16.0	+ 24 8 33.3	+ 15.6	D.	
46	30.262	37.0	32.6	+ 4 37.2	14 54 42.9	16.2	+ 23 58 40.2	+ 15.5	D.	
47	. .	. .	31.0	+ 2 29.6	16 22 35.3	18.0	+ 22 30 46.0	+ 14.0	D.	
48	. .	. .	. .	+ 1 14.2	63 36 17.6	2 2.6	− 24 44 41.0	+ 24.1	D.	
49	30.260	36.0	31.0	− 0 47.8	27 59 16.7	32.5	+ 10 53 50.0	+ 15.8	D.	
50	. .	. .	. .	+ 0 33.7	N. 35 9 20.2	43.0	+ 74 3 42.5	+ 2.6	D.	
51	. .	. .	. .	+ 0 4.8	S. 8 35 9.9	9.2	+ 30 18 20.1	+ 10.0	D.	
52	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
53	. .	. .	. .	− 1 15.5	24 53 48.6	28.0	+ 13 59 22.6	+ 23.0	D.	
54	. .	. .	. .	+ 0 53.3	17 15 56.9	18.7	+ 21 37 23.6	+ 20.2	D.	Add +0″.75 to mean of A, B, E, F.
55	30.177	41.8	37.4	− 2 58.1	9 57 6.7	11.6	+ 28 56 20.9	+ 17.6	D.	Very unsteady.
56	. .	. .	. .	+ 0 9.7	80 10 14.6	5 35.2	− 41 22 10.6	+ 40.0	D.	
57	. .	. .	37.0	− 0 34.5	80 9 30.4	5 35.1	− 41 21 26.3	+ 39.9	D.	
58	. .	. .	. .	− 0 56.9	67 44 8.3	2 26.3	− 28 52 55.4	+ 36.6	D.	
59	. .	. .	. .	+ 0 3.9	26 30 7.9	30.1	+ 12 23 1.3	+ 22.8	D.	
60	30.182	41.0	35.2	− 4 3.1	33 11 0.0	39.5	+ 5 41 59.8	+ 24.9	D.	
61	. .	. .	. .	− 1 54.9	64 38 8.6	2 6.9	− 25 46 36.2	+ 35.0	D.	
62	. .	. .	. .	+ 1 50.3	33 51 53.9	40.6	+ 5 1 4.8	+ 24.9	D.	
63	. .	. .	35.0	− 0 7.6	64 59 55.5	2 9.0	− 26 8 25.2	+ 34.6	D.	
64	. .	. .	. .	− 2 18.9	70 12 44.5	2 46.7	− 31 21 51.9	+ 35.5	D.	
65	. .	. .	. .	+ 1 57.8	64 22 0.4	2 5.5	− 25 30 26.6	+ 33.5	D.	
66	30.184	40.0	34.9	+ 1 37.1	64 21 39.6	2 5.4	− 25 30 5.8	+ 33.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 16	1	Weisse III, 23	8.0	3	III–VII.	328 55 1.1	1.1	54.9	13.0	59.8	0.1	1.67	25.628	0.025	25.605
	2	Weisse III, 145	. .	3	III–VII.	313 30 3.2	1.7	55.0	14.2	3.7	4.2	3.67	27.173	. .	27.147
	3	Anon. $3^h 11^m 44^s$	7.5	3	III–VII.	343 30 3.0	3.0	56.9	16.2	2.2	3.8	4.18	35.455	. .	35.434
	4	Rumker 879	. .	3	III–VII.	300 30 2.8	2.2	55.2	14.8	2.2	3.8	3.50	25.759	. .	25.731
	5	Weisse (2) III, 721	. .	3	III–VII.	299 55 2.7	3.2	55.4	15.0	3.0	4.8	4.02	29.242	. .	29.214
	6	Anon. $3^h 41^m 16^s$	7.0	2	V, VI.	303 45 2.0	1.8	55.8	15.2	3.9	3.3	3.67	25.770	. .	25.742
	7	Weisse III, 774	7.0	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	35.137	. .	35.119
	8	B. A. C. 1247	. .	3	IV–VI.	235 25 1.9	1.0	59.0	21.2	1.9	7.0	5.33	28.741	. .	28.715
	9	Lalande 7819	. .	3	III–VII.	328 0 1.5	2.1	55.1	15.2	1.0	0.0	2.48	25.229	. .	25.206
	10	Rumker 1159	7.0	3	III–VII.	301 0 1.7	1.9	54.8	14.9	2.0	3.0	3.05	37.258	. .	37.230
	11	Lacaille 1463	6.7	3	IV–VI.	351 35 2.2	5.0	57.2	18.1	2.0	2.0	4.42	33.753	. .	33.730
	12	Anon. $4^h 23^m 35^s$	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	27.531	. .	27.508
	13	Anon. $4^h 31^m 0^s$	. .	3	III–VII.	345 40 2.8	2.2	55.8	14.4	0.2	0.7	2.68	27.136	. .	27.116
	14	Anon. $4^h 41^m 1^s$	8.0	1	I.	308 10 2.7	3.1	55.8	15.0	2.7	4.0	3.88	37.258	. .	37.232
	15	Anon. $4^h 41^m 17^s$	8.0	1	III.	" " "	"	"	"	"	"	"	31.420	. .	31.397
	16	Anon. $4^h 41^m 20^s$	8.0	1	V.	" " "	"	"	"	"	"	"	29.030	. .	29.005
	17	Anon. $4^h 41^m 14^s$	8.0	1	VIII.	" " "	"	"	"	"	"	"	27.290	. .	27.252
	18	Anon. $4^h 45^m 59^s$	9.0	2	IV, V.	275 0 3.1	4.0	59.0	20.8	5.0	8.1	6.67	29.145	. .	29.120
	19	Anon. $4^h 46^m 28^s$	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	31.192	. .	31.130
	20	Anon. $4^h 49^m 26^s$	7.5	3	IV–VI.	" " "	"	"	"	"	"	"	34.609	. .	34.581
	21	Anon. $4^h 57^m 28^s$	. .	3	IV–VI.	273 50 3.7	4.1	57.9	19.1	4.9	8.0	6.28	31.932	. .	31.904
	22	Weisse V, 153	. .	3	II, IV, V.	316 25 4.0	2.1	56.0	16.1	2.7	4.1	4.17	26.486	. .	26.465
	23	Weisse V, 156	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	28.852	. .	28.819
	24	Nadir	. .	.	. .	100 0 4.0	7.0	57.2	22.0	5.0	8.2	7.23	30.135	. .	. .
20	25	Lacaille 660	. .	3	IV–VI.	357 50 4.0	3.9	58.0	19.9	2.0	2.0	4.97	32.916	– 0.037	32.881
	26	Anon. $2^h 12^m 45^s$	7.5	3	III–VII.	323 35 4.0	2.2	56.0	15.9	2.8	4.1	4.17	26.667	. .	26.631
	27	O. Arg. S. 1558	. .	3	III–VII.	343 20 4.2	2.0	56.8	16.0	1.9	3.3	4.03	29.513	. .	29.480
	28	B. A. C. 790, (1st *)	9.0	3	III–VII.	347 40 4.0	2.2	57.1	18.1	1.0	4.0	4.40	29.769	. .	29.737
	29	B. A. C. 790, (2d *)	6.5	2	IV–VI.	" " "	"	"	"	"	"	"	29.960	. .	29.925
	30	O. Arg. S. 1838	. .	3	III–VII.	336 40 3.5	2.0	56.5	15.0	0.8	2.8	3.43	26.441	. .	26.407
	31	Nadir	. .	.	. .	100 0 4.0	6.0	56.0	19.8	4.3	8.1	6.37	30.120	. .	. .
22	32	ζ^2 Arietis	. .	3	III–VII.	301 5 3.9	6.0	56.7	18.2	3.0	6.0	5.63	29.458	– 0.052	29.403
	33	12 Eridani	. .	3	III–VII.	348 25 4.2	7.7	0.0	19.8	2.0	4.0	6.28	36.444	. .	36.397
	34	B. A. C. 1046	. .	3	III–VII.	345 40 4.2	5.1	58.0	17.8	2.0	2.2	4.88	34.469	. .	34.412
	35	Anon. $3^h 21^m 28^s$	. .	2	IV–VI.	281 55 4.8	6.0	58.1	20.1	4.7	6.1	6.63	30.627	. .	30.572
	36	Weisse (2) III, 420	. .	3	III–VII.	" " "	"	"	"	"	"	"	28.384	. .	28.325
	37	Weisse (2) III, 464	. .	3	IV–VI.	" " "	"	"	"	"	"	"	40.487	. .	40.433
	38	Anon. $3^h 41^m 17^s$	. .	1	V.	303 45 5.1	6.9	58.8	20.8	6.6	7.0	7.53	25.903	. .	25.851
	39	Weisse III, 774	. .	1	VI.	" " "	"	"	"	"	"	"	35.182	. .	35.126
	40	τ^8 Eridani	. .	3	III–VII.	343 50 4.1	6.4	1.7	20.7	3.0	3.8	6.62	26.422	. .	26.374
	41	Lacaille 1324	7.5	3	III–VII.	347 45 6.0	6.9	0.6	21.8	2.8	4.8	7.15	29.812	. .	29.765
	42	Weisse IV, 1	. .	3	III–VII.	301 5 4.0	6.9	59.8	19.0	4.0	5.4	6.52	24.504	. .	24.449
	43	Lacaille 1387	. .	3	III–VII.	352 0 4.7	8.0	59.9	22.0	3.7	3.0	6.88	32.656	. .	32.610
	44	O. Arg. S. 3044	. .	3	III–VII.	346 50 4.0	5.9	0.0	19.9	1.8	3.9	5.92	31.451	. .	31.404
	45	Anon. $4^h 23^m 37^s$	. .	3	III–VII.	351 35 5.7	10.7	1.0	23.7	6.0	5.0	8.68	27.670	. .	27.624
	46	Weisse IV, 722	8.0	3	III–VII.	304 20 3.3	4.0	57.5	18.0	5.0	5.2	5.50	31.610	. .	31.556
	47	π^1 Orionis	. .	3	III–VII.	312 10 4.1	6.0	57.0	18.0	3.9	3.2	5.37	31.472	. .	31.419
	48	B. A. C. 1510	. .	3	I–5.	245 0 5.0	7.0	3.0	26.3	5.3	10.8	9.57	26.215	. .	26.163
	49	Nadir	. .	.	. .	100 0 5.1	10.0	59.2	25.0	7.0	9.9	9.37	30.231	. .	. .
23	50	Weisse III, 95	9.0	3	III–VII.	315 45 5.2	2.3	56.0	15.9	4.3	7.6	5.22	31.472	– 0.059	31.412
	51	Weisse III, 240	8.0	3	III–VII.	322 30 6.0	4.0	57.8	16.2	4.9	6.0	5.82	34.057	. .	34.000
	52	B. A. C. 1063	7.0	3	IV–VI.	269 30 6.0	5.0	58.0	21.0	7.0	11.1	8.02	29.683	. .	29.621
	53	Lacaille 1114	7.0	3	III–VII.	341 50 6.0	5.0	59.0	19.1	5.0	5.1	6.53	31.015	. .	30.960
	54	Weisse (2) III, 721	. .	3	III–VII.	299 55 5.6	5.9	57.0	17.0	6.0	9.0	6.75	29.280	. .	29.218
	55	18 Tauri	. .	3	III–VII.	294 30 6.2	4.0	57.1	18.0	6.6	9.0	6.82	34.310	. .	34.247
	56	Weisse (2) III, 917	7.8	3	III–VII.	284 10 7.1	6.0	59.1	21.0	8.0	10.3	8.58	27.203	. .	27.137
	57	Lalande 7220	8.5	3	III–VII.	296 10 7.0	3.8	57.2	18.8	7.1	8.8	7.12	32.297	. .	32.234
	58	Weisse (2) III, 1082	8.0	3	III–VII.	" " "	"	"	"	"	"	"	30.696	. .	30.633
	59	Lacaille 1326	7.0	3	IV–VI.	353 40 7.1	7.2	1.1	21.8	6.0	7.0	8.37	27.326	. .	27.269
	60	Anon. $4^h 4^m 3^s$	9.0	3	III–VII.	347 0 4.0	2.9	58.1	16.8	2.0	5.0	4.80	28.227	. .	28.173
	61	Anon. $4^h 8^m 7^s$	8.5	3	III–VII.	350 30 4.0	2.2	57.1	17.1	0.9	3.1	4.07	33.477	. .	33.424
	62	Anon. $4^h 13^m 59^s$	. .	3	IV–VI.	" " "	"	"	"	"	"	"	30.046	. .	29.989
	63	Lacaille 1449	. .	3	IV–VI.	354 50 4.0	3.5	58.0	18.0	2.1	4.8	5.07	32.566	. .	32.509
	64	Lacaille 1459	. .	3	IV–VI.	348 20 3.9	3.1	57.8	17.0	1.0	3.0	4.30	27.859	. .	27.802
	65	Lacaille 1537	7.0	3	IV–VI.	356 55 3.1	3.8	58.0	18.9	3.0	oblit.	5.09	29.742	. .	29.685

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 17.5	48 57 19.2	1 9.4	− 10 4 49.3	+ 28.3	D.	
2	. .	. .	. .	+ 1 29.3	33 31 33.0	40.6	+ 5 21 25.7	+ 23.0	D.	
3	. .	. .	. .	− 2 50.4	63 27 13.8	2 0.9	− 24 35 35.4	+ 31.8	D.	
4	. .	. .	. .	+ 2 13.6	20 32 17.1	22.8	+ 18 20 59.4	+ 18.1	D.	
5	. .	. .	. .	+ 0 24.6	19 55 28.6	22.0	+ 18 57 48.6	+ 17.4	D.	
6	. .	. .	. .	+ 2 13.2	23 47 16.9	26.8	+ 15 5 55.6	+ 18.2	D.	
7	. .	. .	. .	− 2 40.5	23 42 23.2	26.7	+ 15 10 49.4	+ 18.1	D.	
8	30.182	38.0	32.1	+ 0 40.2	N. 44 34 14.4	59.9	+ 83 28 53.5	+ 1.9	D.	
9	. .	. .	. .	+ 2 30.0	S. 48 2 32.4	1 7.6	− 9 10 0.8	+ 23.7	D.	
10	. .	. .	. .	− 3 46.8	20 56 16.2	23.3	+ 17 56 59.7	+ 15.4	D.	
11	. .	. .	. .	− 1 56.9	71 33 7.5	3 0.8	− 32 42 29.1	+ 27.5	D.	
12	. .	. .	31.5	+ 1 18.0	71 36 22.4	3 1.4	− 32 45 44.6	+ 27.4	D.	
13	. .	. .	. .	+ 1 30.2	65 41 32.9	2 14.2	− 26 50 7.9	+ 25.4	D.	
14	. .	. .	. .	− 3 46.9	28 6 17.0	32.6	+ 10 46 49.7	+ 15.6	D.	
15	. .	. .	. .	− 0 43.8	28 9 20.1	32.6	+ 10 43 46.5	+ 15.5	D.	
16	. .	. .	. .	+ 0 31.2	28 10 35.0	32.7	+ 10 42 31.5	+ 15.5	D.	
17	. .	. .	. .	+ 1 26.0	28 11 29.9	32.7	+ 10 41 36.7	+ 15.6	D.	
18	. .	. .	. .	+ 0 27.6	N. 4 59 25.8	5.3	+ 43 53 10.4	+ 7.2	D.	
19	. .	. .	. .	− 0 35.4	N. 5 0 28.7	5.4	+ 43 54 13.3	+ 7.2	D.	
20	. .	. .	. .	− 2 23.6	N. 5 2 16.9	5.4	+ 43 56 1.5	+ 7.0	D.	
21	. .	. .	. .	− 0 59.7	N. 6 10 53.4	6.6	+ 45 4 39.2	+ 6.4	D.	
22	. .	. .	. .	+ 1 50.6	S. 36 26 54.8	45.1	+ 2 25 59.4	+ 15.3	D.	
23	30.206	37.2	30.2	+ 0 37.0	36 25 41.1	45.1	+ 2 27 13.0	+ 15.3	D.	
24	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	D.	
25	29.950	41.0	37.8	− 1 30.3	77 48 34.7	4 29.8	− 38 59 25.2	+ 39.4	D.	
26	. .	. .	. .	+ 1 45.4	43 36 49.6	56.8	− 4 44 7.2	+ 29.1	D.	
27	. .	. .	. .	+ 0 16.3	63 20 20.3	1 58.4	− 24 28 39.8	+ 35.1	D.	
28	. .	. .	. .	+ 0 8.2	67 40 12.6	2 24.5	− 28 48 57.9	+ 36.0	D.	
29	. .	. .	. .	+ 0 2.3	67 40 6.7	2 24.5	− 28 48 52.0	+ 36.0	D.	
30	29.975	40.3	37.0	+ 1 52.4	56 41 55.8	1 30.8	− 17 49 47.3	+ 32.2	D.	Cloudy.
31	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	D.	
32	30.027	35.2	31.0	+ 0 18.7	21 5 24.3	23.4	+ 17 47 51.5	+ 20.2	D.	
33	. .	. .	30.8	− 3 20.7	68 21 45.6	2 32.0	− 29 30 38.4	+ 34.4	D.	
34	. .	. .	. .	− 2 18.3	65 37 46.6	2 13.4	− 26 46 20.7	+ 33.1	D.	
35	. .	. .	. .	− 0 17.9	1 54 48.7	2.0	+ 36 58 48.5	+ 12.4	D.	
36	. .	. .	. .	+ 0 52.4	1 55 59.1	2.0	+ 36 57 38.1	+ 12.4	D.	
37	. .	. .	. .	− 5 27.5	1 49 39.1	1.9	+ 37 3 58.2	+ 12.3	D.	
38	. .	. .	. .	+ 2 9.8	23 47 17.3	26.8	+ 15 5 55.1	+ 18.6	D.	
39	. .	. .	. .	− 2 40.7	23 42 26.8	26.7	+ 15 10 45.7	+ 18.5	D.	
40	30.061	35.0	30.0	+ 1 53.5	63 52 0.1	2 3.5	− 25 0 24.3	+ 30.1	D.	
41	. .	. .	. .	+ 0 7.3	67 45 14.5	2 28.0	− 28 54 3.2	+ 30.3	D.	
42	. .	. .	. .	+ 2 53.6	21 8 0.1	23.6	+ 17 45 15.5	+ 16.5	D.	
43	30.078	35.0	29.2	− 1 21.8	71 58 45.1	3 5.6	− 33 8 11.3	+ 30.2	D.	
44	. .	. .	. .	− 0 44.0	66 49 21.9	2 21.6	− 27 58 4.3	+ 28.1	D.	
45	30.086	35.0	29.2	+ 1 14.4	71 36 23.1	3 1.7	− 32 45 45.5	+ 28.5	D.	
46	. .	. .	. .	− 0 48.8	24 19 16.8	27.6	+ 14 33 54.9	+ 15.4	D.	
47	. .	. .	. .	− 0 44.5	32 9 20.9	38.3	+ 6 43 40.0	+ 17.0	D.	
48	30.090	34.8	29.3	+ 2 0.1	N. 34 57 50.4	42.6	+ 73 52 12.3	+ 0.7	D.	Through thick haze.
49	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	D.	
50	29.849	42.0	39.7	− 0 44.2	S. 35 44 11.0	42.6	+ 3 8 45.7	+ 24.4	D.	
51	. .	. .	. .	− 2 5.4	42 27 59.5	54.2	− 3 35 14.4	+ 26.3	D.	
52	. .	. .	. .	+ 0 11.8	N. 10 29 40.1	11.0	+ 49 23 30.4	+ 8.8	D.	
53	. .	. .	39.0	− 0 30.1	S. 61 49 36.5	1 50.3	− 22 57 47.5	+ 31.5	D.	
54	. .	. .	. .	+ 0 24.5	19 55 31.2	21.6	+ 18 57 46.5	+ 17.7	D.	
55	. .	. .	. .	− 2 13.2	14 27 53.7	15.3	+ 24 25 30.3	+ 15.7	D.	
56	. .	. .	. .	+ 1 29.6	4 11 38.2	4.4	+ 34 41 56.6	+ 12.2	D.	
57	. .	. .	. .	− 1 10.0	16 8 57.1	17.2	+ 22 44 24.9	+ 15.7	D.	
58	. .	. .	. .	− 0 19.8	16 9 47.3	17.2	+ 22 43 34.7	+ 15.6	D.	
59	29.855	41.3	38.0	+ 1 25.5	73 41 33.8	3 20.5	− 34 51 15.1	+ 31.7	D.	
60	. .	. .	. .	+ 0 57.2	67 1 2.0	2 19.3	− 28 9 42.1	+ 29.6	D.	
61	29.852	41.2	37.8	− 1 47.3	70 28 16.7	2 46.2	− 31 37 23.7	+ 30.0	D.	
62	. .	. .	. .	+ 0 0.3	70 30 4.4	2 46.4	− 31 39 11.6	+ 29.4	D.	
63	. .	. .	. .	− 1 18.6	74 48 46.4	3 35.8	− 35 58 43.0	+ 29.6	D.	
64	. .	. .	. .	+ 1 8.8	68 21 13.1	2 28.9	− 29 30 2.8	+ 28.1	D.	
65	29.852	41.0	37.3	+ 0 9.8	76 55 14.9	4 11.1	− 38 5 46.8	+ 28.8	D.	−0″.86 added to mean of A, B, C, D.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Jan. 23	1	Lacaille 1580.	7.0	3	IV–VI.	344 15 3.2	1.3	55.7	13.7	1.2	2.8	2.98	28.368	− 0.059	28.310
	2	Lacaille 1610.	. .	3	IV–VI.	353 20 3.8	4.0	57.0	18.7	2.8	4.0	5.05	24.229	. .	24.172
	3	B. A. C. 1513.	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	33.423	. .	33.366
	4	Lacaille 1642.	7.0	3	IV–VI.	357 10 3.0	3.3	57.0	19.4	2.0	oblit.	4.81	27.541	. .	27.484
	5	Lacaille 1652.	6.5	3	IV–VI.	“ “ “	“	“	“	“		“	25.674	. .	25.617
	6	Radcliffe 1377	. .	3	I–5.	233 20 3.7	1.9	57.1	20.7	3.0	8.7	5.85	26.758	. .	26.697
	7	Lacaille 1774.	7.0	3	IV–VI.	348 45 3.0	3.0	56.0	16.1	1.0	2.8	3.65	28.352	. .	28.295
	8	Anon. 5ʰ 14ᵐ 22ˢ	8.5	3	IV–VI.	344 15 2.5	1.8	55.0	14.4	1.0	2.6	2.88	29.491	. .	29.433
	9	Anon. 5ʰ 21ᵐ 3ˢ.	8.0	3	III–VII.	319 15 2.2	1.9	55.0	13.0	1.0	4.1	2.87	29.463	. .	29.404
	10	Anon. 5ʰ 23ᵐ 21ˢ	8.5	4	II, III, VIII, IX.	348 20 3.0	2.9	57.1	17.0	0.8	3.0	3.97	30.918	. .	30.875
	11	Anon. 5ʰ 23ᵐ 27ˢ	8.5	2	IV, V.	“ “ “	“	“	“	“	“	“	32.124	. .	32.066
	12	Lacaille 1906.	. .	3	IV–VI.	349 30 3.2	3.0	57.7	18.2	1.8	3.1	4.50	33.002	. .	32.945
	13	O. Arg. S. 4264.	. .	3	IV–VI.	346 30 3.1	2.0	57.2	16.0	1.2	3.1	3.77	34.211	. .	34.154
	14	(* 94) Washington	9.0	2	V, VI.	293 10 4.3	4.0	56.8	18.0	5.0	7.1	5.87	34.204	. .	34.142
	15	Anon. 5ʰ 48ᵐ 53ˢ	9.5	1	VII.	311 35 4.9	4.9	56.7	16.1	4.1	6.0	5.45	38.349	. .	38.283
	16	Anon. 5ʰ 50ᵐ 49ˢ	9.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	35.701	. .	35.642
	17	Anon. 5ʰ 57ᵐ 43ˢ	9.5	1	V.	245 20 5.1	5.3	0.0	23.7	6.0	11.8	8.65	27.768	. .	27.709
	18	Anon. 5ʰ 58ᵐ 58ˢ	9.5	1	V.	“ “ “	“	“	“	“	“	“	31.467	. .	31.408
	19	Nadir.	. .	5	. .	100 0 5.1	7.1	57.1	20.8	7.0	9.0	7.68	30.184	. .	. .
Feb. 1	20	Anon. 3ʰ 3ᵐ 46ˢ.	8.0	3	III–VII.	347 45 4.8	6.2	1.0	21.7	0.3	4.0	6.33	33.200	− 0.044	33.161
	21	Anon. 3ʰ 15ᵐ 57ˢ	9.5	1	VII.	293 55 4.2	5.0	59.9	21.1	3.7	6.3	6.70	28.680	. .	28.622
	22	Anon. 3ʰ 22ᵐ 31ˢ	9.0	2	II, VIII.	313 25 4.2	4.9	58.9	19.0	3.9	5.0	5.98	25.014	. .	24.968
	23	Anon. 3ʰ 22ᵐ 40ˢ	8.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	30.386	. .	30.342
	24	Weisse (2) III, 750	. .	4	I, II, VIII, IX.	280 55 4.9	8.0	0.2	21.8	5.2	8.0	8.02	27.754	. .	27.680
	25	Weisse (2) III, 751	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	27.781	. .	27.735
	26	19 Tauri	. .	3	V–VII.	294 50 5.2	5.3	58.3	21.7	4.1	6.0	6.77	29.883	. .	29.841
	27	21 Tauri	. .	3	VI, VIII, IX.	“ “ “	“	“	“	“	“	“	40.151	. .	40.106
	28	B. A. C. 1182.	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	21.179	. .	21.131
	29	Anon. 3ʰ 55ᵐ 25ˢ	. .	3	V–IX.	340 20 6.1	7.4	0.3	22.9	2.1	3.0	6.97	24.675	. .	24.647
	30	Anon. 4ʰ 6ᵐ 6ˢ	. .	3	III–VII.	325 45 6.0	6.0	58.2	19.3	3.0	4.0	6.08	32.484	. .	32.441
	31	Anon. 4ʰ 11ᵐ 47ˢ	9.0	3	III–VII.	349 15 6.0	7.2	2.0	23.1	2.7	3.0	7.33	28.710	. .	28.672
	32	Anon. 4ʰ 22ᵐ 56ˢ	10.0	1	VIII.	289 50 6.0	7.8	0.8	23.0	4.0	8.0	8.27	25.358	. .	25.291
	33	Weisse (2) IV, 720	. .	3	III–VII.	296 25 6.0	7.0	58.7	21.2	4.0	5.9	7.13	30.508	. .	30.460
	34	Anon. 4ʰ 41ᵐ 1ˢ.	. .	1	I.	308 10 6.3	7.1	59.8	21.0	4.0	6.0	7.37	37.340	. .	37.295
	35	Anon. 4ʰ 41ᵐ 11ˢ	. .	1	V.	“ “ “	“	“	“	“	“	“	26.093	. .	26.049
	36	Anon. 4ʰ 41ᵐ 30ˢ	. .	1	VIII.	“ “ “	“	“	“	“	“	“	22.757	. .	22.700
	37	Weisse IV, 986.	7.0	3	IV–VI.	310 35 6.8	7.9	0.1	20.8	4.1	5.7	7.57	34.030	. .	33.986
	38	Weisse IV, 1105.	8.0	3	III–VII.	317 25 6.0	7.4	59.0	21.0	3.1	5.9	7.07	30.584	. .	30.540
	39	Anon. 4ʰ 56ᵐ 33ˢ	. .	3	IV–VI.	350 30 6.2	8.8	3.0	25.0	3.0	5.0	8.50	36.076	. .	36.034
	40	Anon. 5ʰ 3ᵐ 40ˢ.	9.5	3	III–VII.	314 40 6.7	7.0	0.8	20.2	4.8	6.1	7.60	34.843	. .	34.798
	41	Lacaille 1774.	. .	3	III–VII.	348 45 6.0	9.2	1.8	23.8	3.1	3.1	7.83	28.594	. .	28.556
	42	Anon. 5ʰ 16ᵐ 57ˢ	9.0	3	IV–VI.	339 5 6.2	7.3	2.2	22.3	3.0	3.1	7.35	35.421	. .	35.378
	43	Anon. 5ʰ 23ᵐ 17ˢ	. .	3	III–VII.	345 30 6.3	8.1	2.0	22.0	3.5	3.0	7.48	32.845	. .	32.806
	44	Anon. 5ʰ 39ᵐ 12ˢ	. .	3	III–VII.	339 40 7.0	10.9	4.5	26.1	5.9	5.1	9.92	32.319	. .	32.279
	45	Anon. 5ʰ 41ᵐ 55ˢ	10.0	1	V.	293 10 7.1	9.3	2.5	25.4	7.0	7.8	9.85	39.015	. .	38.971
	46	(* 94) Washington	9.0	1	VII.	“ “ “	“	“	“	“	“	“	34.390	. .	34.335
	47	O. Arg. S. 4457.	8.0	3	IV–VI.	348 0 6.8	10.0	4.0	26.4	4.0	5.3	9.42	28.602	. .	28.560
	48	Anon. 5ʰ 57ᵐ 42ˢ	. .	1	V.	245 20 4.0	7.2	2.0	27.1	3.1	8.5	8.65	27.848	. .	27.804
	49	Anon. 5ʰ 58ᵐ 58ˢ	. .	1	V.	“ “ “	“	“	“	“	“	“	31.497	. .	31.453
	50	Anon. 6ʰ 6ᵐ 33ˢ.	8.5	3	III–VII.	345 35 4.0	6.0	59.7	20.0	1.0	1.5	5.37	32.336	. .	32.297
	51	Nadir.	. .	5	. .	100 0 3.4	9.1	59.1	25.1	4.9	7.0	8.10	30.182	. .	. .
Feb. 5	52	Anon. 3ʰ 3ᵐ 46ˢ.	8.5	3	III–VII.	347 45 4.0	6.0	59.9	21.8	1.0	3.0	5.95	33.168	− 0.056	33.117
	53	Anon. 3ʰ 13ᵐ 7ˢ.	8.0	3	III–VII.	296 10 4.0	5.0	56.1	19.0	4.0	4.0	5.35	28.469	. .	28.409
	54	Weisse (2) III, 750	8.0	4	I, II, VIII, IX.	280 55 4.0	7.2	58.7	21.0	4.7	7.0	7.10	27.767	. .	27.681
	55	Weisse (2) III, 751	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	27.792	. .	27.734
	56	Anon. 3ʰ 39ᵐ 38ˢ	8.0	3	III–VII.	307 35 4.0	5.9	57.0	17.3	2.4	4.1	5.12	25.591	. .	25.533
	57	B. A. C. 1205.	7.0	3	III–VII.	320 25 4.9	6.0	58.1	18.2	3.0	4.0	5.70	29.107	. .	29.051
	58	Anon. 3ʰ 55ᵐ 25ˢ	9.0	3	III–VII.	340 20 5.0	7.0	58.8	2.8	2.2	2.9	6.28	24.616	. .	24.564
	59	Anon. 4ʰ 2ᵐ 7ˢ.	9.0	3	III–VII.	326 45 5.4	7.0	59.2	20.0	5.8	5.3	7.12	34.713	. .	34.658
	60	Anon. 4ʰ 7ᵐ 14ˢ.	8.5	3	III–VII.	347 10 3.6	4.9	59.5	20.1	1.0	2.9	5.33	28.588	. .	28.537
	61	58 Tauri	. .	3	IV–VI.	304 10 3.0	3.1	56.9	18.9	4.0	3.7	4.93	36.769	. .	36.712
	62	Anon. 4ʰ 20ᵐ 56ˢ	8.0	2	II, IV.	“ “ “	“	“	“	“	“	“	38.500	. .	38.446
	63	Anon. 4ʰ 21ᵐ 5ˢ.	8.0	3	VII–IX.	“ “ “	“	“	“	“	“	“	35.980	. .	35.909
	64	Anon. 4ʰ 26ᵐ 54ˢ	. .	3	IV–VI.	296 50 3.3	5.0	56.5	oblit.	3.0	3.7	5.10	35.656	. .	35.599
	65	Anon. 4ʰ 41ᵐ 10ˢ	. .	1	II.	308 10 3.4	5.0	57.0	16.8	3.2	3.8	4.87	25.980	. .	25.926
	66	Anon. 4ʰ 41ᵐ 15ˢ	. .	2	III, V.	“ “ “	“	“	“	“	“	“	27.250	. .	27.195

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 52.9	S. 64 15 55.9	2 2.9	− 25 24 19.6	+ 25.3	D.	
2	. .	. .	. .	+ 3 2.3	73 23 7.3	3 17.2	− 34 32 45.3	+ 27.0	D.	
3	. .	. .	. .	− 1 45.5	73 18 19.5	3 16.3	− 34 27 56.6	+ 26.4	D.	
4	. .	. .	. .	+ 1 18.8	77 11 23.6	4 16.5	− 38 22 1.0	+ 26.8	D.	−0″.86 added to mean of A, B, C, D.
5	29.854	40.8	36.9	+ 2 17.1	S. 77 12 21.9	4 16.9	− 38 22 59.6	+ 26.7	D.	
6	. .	. .	. .	+ 1 43.4	N. 46 38 10.8	1 3.0	+ 85 32 53.0	− 1.3	D.	
7	. .	. .	36.3	+ 0 53.4	S. 68 45 57.0	2 32.4	− 29 54 50.2	+ 22.8	D.	
8	. .	. .	. .	+ 0 17.8	64 15 20.6	2 3.1	− 25 23 44.5	+ 21.5	D.	
9	. .	. .	. .	+ 0 18.7	39 15 21.5	48.7	− 0 22 31.0	+ 15.5	D.	
10	. .	. .	. .	− 0 27.4	68 19 36.6	2 29.0	− 29 28 26.4	+ 21.1	D.	
11	. .	. .	. .	− 1 4.7	68 18 59.2	2 29.0	− 29 27 49.0	+ 21.1	D.	
12	29.844	40.0	36.0	− 1 32.3	69 28 32.2	2 38.4	− 30 37 31.4	+ 20.3	D.	
13	. .	. .	. .	− 2 10.2	66 27 53.6	2 16.2	− 27 36 30.6	+ 18.8	D.	
14	. .	. .	. .	− 2 9.8	13 7 56.0	13.9	+ 25 45 29.3	+ 7.7	D.	
15	. .	. .	. .	− 4 19.9	31 30 45.5	36.7	+ 7 22 17.0	+ 11.3	D.	
16	. .	. .	. .	− 2 56.9	S. 31 32 8.5	36.6	+ 7 20 54.1	+ 10.7	D.	
17	. .	. .	. .	+ 1 11.7	N. 34 38 39.6	41.2	+ 73 33 0.0	− 1.5	D.	
18	. .	. .	34.4	− 0 44.1	N. 34 40 35.5	41.3	+ 73 34 56.0	− 1.6	D.	
19	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
20	30.407	39.0	36.5	− 1 39.1	S. 67 43 27.3	2 27.3	− 28 52 15.4	+ 34.9	D.	
21	. .	. .	. .	+ 0 43.2	13 55 49.9	15.1	+ 24 57 34.2	+ 16.7	D.	Faint.
22	. .	. .	. .	+ 2 37.4	33 27 43.4	40.2	+ 5 25 15.6	+ 23.2	D.	
23	. .	. .	. .	− 0 10.7	33 24 55.3	40.1	+ 5 28 3.8	+ 23.2	D.	
24	. .	. .	. .	+ 1 12.6	0 56 20.6	1.0	+ 37 57 17.6	+ 11.3	D.	
25	. .	. .	. .	+ 1 10.9	0 56 18.9	1.0	+ 37 57 19.3	+ 11.3	D.	
26	. .	. .	. .	+ 0 5.0	14 50 11.7	16.2	+ 24 3 11.3	+ 15.9	D.	
27	. .	. .	. .	− 5 17.2	14 44 49.6	16.1	+ 24 8 33.5	+ 15.8	D.	
28	. .	. .	. .	+ 4 37.2	14 54 44.0	16.3	+ 23 58 38.9	+ 15.7	D.	
29	30.410	37.5	32.0	+ 2 47.4	60 22 54.4	1 47.5	− 21 31 2.7	+ 29.4	D	
30	. .	. .	. .	− 1 16.5	45 43 49.6	1 2.9	− 6 51 13.3	+ 24.4	D.	
31	. .	. .	31.7	+ 0 41.6	69 15 48.9	2 40.8	− 30 24 50.5	+ 30.3	D.	
32	. .	. .	. .	+ 2 27.3	9 52 35.6	10.7	+ 29 0 52.9	+ 11.6	D.	
33	. .	. .	. .	− 0 14.4	16 24 52.7	18.1	+ 22 28 28.4	+ 13.0	D.	
34	. .	. .	. .	− 3 48.8	28 6 18.5	32.8	+ 10 46 47.9	+ 16.2	D.	
35	. .	. .	. .	+ 2 3.6	28 12 11.0	33.0	+ 10 40 55.2	+ 16.2	D.	
36	. .	. .	. .	+ 3 48.2	28 13 55.6	33.0	+ 10 39 10.6	+ 16.2	D.	
37	. .	. .	. .	− 2 4.9	30 33 2.6	36.3	+ 8 20 0.3	+ 16.6	D.	
38	. .	. .	. .	− 0 16.9	37 24 50.1	47.1	+ 1 28 2.0	+ 18.2	D.	
39	30.400	35.5	29.0	− 3 9.2	70 26 59.3	2 54.2	− 31 36 12.3	+ 26.0	D.	
40	. .	. .	. .	− 2 30.4	34 37 37.2	42.6	+ 4 15 19.4	+ 16.4	D.	
41	. .	. .	. .	+ 0 45.2	68 45 53.0	2 37.5	− 29 54 51.3	+ 24.1	D.	
42	. .	. .	. .	− 2 48.6	59 2 18.7	1 42.4	− 20 10 21.9	+ 21.4	D.	
43	30.396	34.8	29.5	− 1 27.9	65 28 39.5	2 14.4	− 26 37 14.7	+ 22.0	D.	
44	. .	. .	. .	− 1 11.4	59 38 58.5	1 44.8	− 20 47 4.1	+ 19.0	D.	
45	. .	. .	. .	− 4 41.5	13 5 28.3	14.3	+ 25 47 56.6	+ 7.4	D.	
46	. .	. .	. .	− 2 15.9	13 7 53.9	14.4	+ 25 45 30.9	+ 7.3	D.	
47	. .	. .	30.1	+ 0 45.1	S. 68 0 54.5	2 31.8	− 29 9 47.1	+ 19.1	D.	
48	. .	. .	. .	+ 1 8.8	N. 34 38 42.6	42.5	+ 73 33 4.3	− 4.0	D.	Faint.
49	. .	. .	. .	− 0 45.5	N. 34 40 36.9	42.6	+ 73 34 59.8	− 4.0	D.	Faint.
50	30.418	34.5	30.0	− 1 12.0	S. 65 33 53.4	2 14.8	− 26 42 29.0	+ 16.6	D.	
51	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
52	29.960	33.2	30.3	− 1 37.7	67 43 28.3	2 27.1	− 28 52 16.2	+ 35.1	D.	Barometer recorded 39.960.
53	. .	. .	. .	+ 0 49.8	16 10 55.2	17.6	+ 22 42 26.4	+ 17.9	D.	
54	. .	. .	. .	+ 1 12.6	0 56 19.7	1.0	+ 37 57 18.5	+ 11.5	D.	
55	. .	. .	. .	+ 1 10.9	0 56 18.0	1.0	+ 37 57 20.2	+ 11.5	D.	
56	. .	. .	29.1	+ 2 19.8	27 37 24.9	31.8	+ 11 15 42.5	+ 20.5	D.	
57	. .	. .	. .	+ 0 29.7	40 25 35.4	51.8	− 1 32 48.0	+ 24.5	D.	
58	29.996	33.0	29.0	+ 2 50.0	60 22 56.3	1 46.7	− 21 31 3.8	+ 29.9	D.	
59	. .	. .	. .	− 2 26.0	46 42 41.1	1 4.5	− 7 50 6.4	+ 25.4	D.	
60	. .	. .	. .	+ 0 45.8	67 10 51.1	2 23.8	− 28 19 35.7	+ 30.6	D.	
61	. .	. .	. .	− 3 30.6	24 6 34.4	27.2	+ 14 46 37.6	+ 17.1	D.	
62	. .	. .	. .	− 4 25.0	24 5 39.9	27.2	+ 14 47 32.1	+ 16.6	D.	
63	. .	. .	. .	− 3 5.3	24 6 59.6	27.3	+ 14 46 12.3	+ 16.6	D.	
64	. .	. .	. .	− 2 55.6	16 47 9.5	18.4	+ 22 6 11.3	+ 13.7	D.	+1″.35 added to mean of A, B, E, F.
65	. .	. .	. .	+ 2 7.5	28 12 12.3	32.7	+ 10 40 54.2	+ 16.5	D.	
66	. .	. .	. .	+ 1 27.3	S. 28 11 32.2	32.7	+ 10 41 34.3	+ 16.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Feb. 5	1	Anon. $4^h 41^m 12^s$	9.2	1	VIII.	308 10 3.4	5.0	57.0	16.8	3.2	3.8	4.87	26.032	− 0.056	25.964
	2	Anon. $4^h 41^m 30^s$	. .	1	IX.	" " "	"	"	"	"	"	"	22.651	. .	22.577
	3	Anon. $4^h 45^m 39^s$	9.5	1	VIII.	296 20 3.9	4.4	56.0	19.2	2.9	3.8	5.03	29.798	. .	29.723
	4	Lacaille 1704.	7.0	3	III–VII.	343 25 4.0	6.0	58.8	21.0	3.0	3.0	5.97	27.792	. .	27.740
	5	Lacaille 1779.	7.0	3	III–VII.	344 20 5.0	6.2	59.7	20.0	3.0	3.0	6.15	29.189	. .	29.138
	6	Anon. $5^h 16^m 56^s$	9.3	3	III–VII.	339 5 5.0	6.1	0.6	20.9	3.0	3.2	6.47	35.342	. .	35.290
	7	Anon. $5^h 22^m 31^s$	9.0	2	V, IX.	292 15 4.9	5.9	57.8	19.2	4.0	5.7	6.25	32.578	. .	32.506
	8	Anon. $5^h 29^m 34^s$	8.5	2	III, V.	" " "	"	"	"	"	"	"	42.694	. .	42.636
	9	Anon. $5^h 30^m 37^s$	8.0	3	III–VII.	" " "	"	"	"	"	"	"	34.655	. .	34.594
	10	Weisse V, 1034.	. .	3	III–VII.	309 0 3.9	5.0	57.0	17.8	3.2	4.0	5.15	25.564	. .	25.506
	11	Anon. $5^h 51^m 45^s$	8.0	3	IV–VI.	299 5 3.0	5.0	56.1	17.9	2.3	3.8	4.68	25.482	. .	25.425
	12	Anon. $5^h 53^m 10^s$	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	30.039	. .	29.982
	13	Anon. $5^h 59^m 59^s$	. .	3	III–VII.	304 5 2.7	2.1	55.8	18.0	2.4	3.0	4.00	30.937	. .	30.878
	14	Anon. $6^h 7^m 3^s$	9.3	1	V.	346 25 3.1	5.0	59.0	19.1	0.7	1.3	4.70	29.612	. .	29.556
	15	Lalande 12557	8.0	3	III–VII.	294 10 4.0	4.8	58.2	21.0	4.0	4.8	6.13	31.254	. .	31.194
	16	O. Arg. S. 5463.	. .	3	III–VII.	342 30 4.0	4.7	59.0	20.3	2.0	2.0	5.33	35.699	. .	35.647
	17	Anon. $6^h 40^m 55^s$	9.0	3	III–VII.	295 15 4.3	5.0	58.0	20.0	4.1	5.2	6.10	25.406	. .	25.346
	18	B. A. C. 2251.	. .	3	II, VI, VIII.	350 25 5.3	7.8	1.0	24.0	3.0	4.6	7.62	31.457	. .	31.407
	19	Anon. $6^h 45^m 19^s$	. .	3	V–IX.	" " "	"	"	"	"	"	"	32.046	. .	31.998
	20	Lacaille 2519.	8.0	3	III–VII.	" " "	"	"	"	"	"	"	33.451	. .	33.401
	21	Nadir	. .	.	. .	100 0 5.0	10.0	59.0	25.9	6.1	8.1	9.02	30.224	− 0.047	. .
8	22	18 Tauri	. .	3	IV–VI.	294 30 3.3	1.9	55.0	15.6	4.6	6.8	4.53	34.228	. .	34.180
	23	Weisse III, 781.	. .	3	III–VII.	307 35 3.9	3.1	54.6	13.0	3.7	6.0	4.05	30.185	. .	30.136
	24	Anon. $3^h 55^m 25^s$	9.3	2	IV, V.	340 25 4.0	3.8	56.6	17.1	2.7	4.9	4.85	34.073	. .	34.029
	25	O. Arg. S. 2793.	8.0	3	V–VII.	349 25 3.1	3.0	57.3	17.2	1.9	3.0	4.25	32.703	. .	32.658
	26	Lacaille 1308.	7.0	3	V–VII.	349 20 3.1	2.7	57.5	16.7	2.0	3.1	4.18	33.681	. .	33.636
	27	O. Arg. S. 2997.	. .	3	IV–VI.	348 0 3.1	3.1	57.7	16.2	2.0	5.0	4.52	34.243	. .	34.198
	28	Anon. $4^h 20^m 57^s$	. .	2	II, V.	304 5 3.1	1.0	54.5	13.8	4.2	5.2	3.63	28.824	. .	28.777
	29	Anon. $4^h 29^m 18^s$	9.2	3	III–VII.	296 55 3.0	2.0	53.7	oblit.	3.9	5.2	3.85	34.792	. .	34.749
	30	Lacaille 1557.	8.0	2	VI, VIII.	358 40 2.8	4.1	57.0	18.1	2.0	2.9	4.48	31.355	. .	31.317
	31	Anon. $4^h 40^m 19^s$	. .	1	III.	308 10 2.2	2.0	54.0	12.2	3.0	4.3	2.95	31.333	. .	31.288
	32	Anon. $4^h 41^m 19^s$	. .	1	VI.	" " "	"	"	"	"	"	"	28.983	. .	28.932
	33	Weisse IV, 1105.	8.0	2	IV, V.	317 25 2.0	0.8	52.0	11.1	1.0	3.4	1.72	30.343	. .	30.296
	34	π^6 Orionis	6.0	3	IV–VI.	" " "	"	"	"	"	"	"	34.976	. .	34.929
	35	Anon. $4^h 56^m 42^s$	9.0	2	VI, VII.	273 35 2.0	1.1	55.2	15.8	4.0	7.9	4.33	27.601	. .	27.540
	36	β Leporis	. .	3	III–VII.	339 45 1.3	1.0	56.0	15.0	0.7	2.0	2.67	31.653	. .	31.610
	37	Anon. $5^h 29^m 50^s$	8.7	3	III–VII.	293 20 1.0	0.1	53.0	12.8	1.9	4.0	2.13	26.508	. .	26.456
	38	Anon. $5^h 41^m 45^s$	9.0	3	IV–VI.	295 15 2.7	0.9	54.0	14.3	3.2	5.0	3.35	32.862	. .	32.813
	39	Lalande 11343	8.0	4	I, II, VIII, IX.	295 35 1.7	0.3	53.1	13.0	4.0	4.2	2.72	28.765	. .	28.702
	40	Anon. $5^h 53^m 8^s$	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	32.654	. .	32.606
	41	Anon. $5^h 59^m 59^s$	9.0	3	III–VII.	304 5 0.9	59.0	52.5	12.2	2.0	3.1	1.62	30.822	. .	30.772
	42	O. Arg. N. 7006.	8.0	3	IV–VI.	270 50 2.1	3.4	55.8	18.8	4.0	6.0	5.02	28.167	. .	28.117
	43	O. Arg. S. 5463.	. .	3	IV–VI.	342 30 2.0	2.1	55.2	16.1	2.0	2.7	3.35	35.558	. .	35.512
	44	Anon. $6^h 41^m 38^s$	8.0	3	IV–VI.	266 45 2.0	3.0	58.0	19.1	5.0	7.2	5.72	29.165	. .	29.114
	45	Lacaille 2494.	. .	3	IV–VI.	352 35 1.2	3.0	55.7	18.2	0.0	2.4	3.42	27.393	. .	27.344
	46	Nadir	. .	5	. .	100 0 1.0	3.0	53.0	18.0	2.0	5.6	3.77	30.047	. .	. .
10	47	Lacaille 1595.	. .	3	III–VII.	354 55 7.0	7.0	1.2	19.1	5.9	8.0	8.03	33.853	− 0.062	33.798
	48	Lacaille 1673.	. .	3	III–VII.	347 30 7.2	5.8	1.0	19.0	4.8	8.0	7.63	30.038	. .	29.981
	49	O. Arg. S. 3710.	. .	3	III–VII.	344 35 7.8	6.0	1.2	19.3	7.0	8.2	8.25	35.606	. .	35.549
	50	Nadir	. .	.	. .	100 0 7.6	9.0	0.0	21.2	9.2	13.1	10.02	30.262	. .	. .
	51	Weisse V, 1530.	6.0	3	III–VII.	323 5 6.1	4.2	59.0	16.3	6.9	8.0	6.75	32.383	. .	32.322
	52	71 Orionis	. .	3	III–VII.	299 40 6.0	5.2	58.0	17.0	7.2	9.0	7.67	27.350	. .	27.285
	53	23 Geminorum	. .	3	III–VII.	302 0 5.7	5.2	58.5	17.0	6.8	8.8	7.00	31.528	. .	31.463
	54	Lacaille 2388.	. .	3	III–VII.	349 10 6.0	6.7	1.0	20.2	6.0	6.9	7.80	26.419	. .	26.363
	55	Lacaille 2454.	. .	3	III–VII.	346 55 6.0	5.0	1.0	19.0	5.0	7.4	7.23	28.771	. .	28.714
	56	B. A. C. 2266	. .	3	III–VII.	347 15 6.8	5.1	1.7	20.0	6.0	8.1	7.95	33.461	. .	33.404
	57	Lacaille 2549.	. .	3	III–VII.	349 25 6.1	6.4	1.2	20.6	5.7	6.7	7.78	29.430	. .	29.374
	58	48 Geminorum	. .	3	III–VII.	294 30 6.0	3.8	58.0	17.8	7.1	8.7	6.90	24.933	. .	24.867
	59	Anon. $7^h 10^m 2^s$	8.0	3	II, V, IX.	342 20 6.2	5.9	0.5	20.0	6.0	6.2	7.47	29.902	. .	29.850
	60	Lacaille 2684.	7.0	3	III, V, IX.	" " "	"	"	"	"	"	"	25.076	. .	25.012
	61	Anon. $7^h 17^m 36^s$	. .	3	IV–VI.	349 55 5.1	6.1	0.8	19.8	6.0	5.8	7.27	38.085	. .	38.025
	62	Anon. $7^h 18^m 31^s$	. .	4	VI, VII, VIII, IX.	" " "	"	"	"	"	"	"	32.159	. .	32.105
	63	Weisse (2) III, 727	7.5	3	III–VII.	302 35 5.1	4.8	59.0	16.8	6.5	7.1	6.55	24.928	. .	24.862
13	64	o Persei	. .	3	IV–VI.	287 0 5.6	1.0	52.7	12.1	4.8	9.8	4.33	27.688	− 0.083	27.603
	65	τ^7 Eridani	. .	3	III–VII.	343 10 5.0	59.9	53.8	9.1	2.8	7.2	2.97	32.007	. .	31.928
	66	Weisse III, 1092.	. .	3	III–VII.	306 45 4.9	0.1	52.0	9.0	4.7	9.0	3.29	31.934	. .	31.849

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 6.3	S. 28 12 11.2	32.7	+ 10 40 55.3	+ 16.5	D.	
2	. .	. .	. .	+ 3 52.1	28 13 56.9	32.7	+ 10 39 9.6	+ 16.5	D.	
3	. .	. .	. .	+ 0 8.7	16 20 13.7	17.9	+ 22 33 7.6	+ 12.4	D.	
4	30.017	32.5	28.8	+ 1 10.8	63 26 16.7	2 1.3	— 24 34 38.8	+ 24.9	D.	
5	. .	. .	. .	+ 0 27.0	64 20 33.1	2 6.3	— 25 29 0.2	+ 23.8	D.	
6	. .	. .	. .	— 2 45.8	59 2 20.6	1 41.3	— 20 10 22.7	+ 22.0	D.	
7	. .	. .	. .	— 1 18.6	12 13 47.7	13.2	+ 26 39 38.3	+ 8.5	D.	
8	. .	. .	. .	— 6 36.8	12 8 29.4	13.1	+ 26 44 56.7	+ 8.0	D.	
9	. .	. .	. .	— 2 24.0	12 12 42.2	13.2	+ 26 40 43.8	+ 8.0	D.	
10	30.031	32.5	28.8	+ 2 20.6	29 2 25.7	33.8	+ 9 50 39.7	+ 11.9	D.	
11	. .	. .	. .	+ 2 23.1	19 7 27.8	21.1	+ 19 45 50.3	+ 8.4	D.	
12	. .	. .	. .	+ 0 0.6	19 5 4.1	21.1	+ 19 48 14.0	+ 8.3	D.	
13	. .	. .	. .	— 0 27.5	24 4 36.5	27.3	+ 14 48 35.4	+ 9.0	D.	
14	. .	. .	28.5	+ 0 13.9	66 25 18.6	2 19.0	— 27 33 58.4	+ 17.6	D.	
15	30.054	32.3	28.2	— 0 37.4	14 9 28.7	15.4	+ 24 43 55.1	+ 4.5	D.	
16	. .	. .	. .	— 2 57.1	62 27 8.2	1 56.6	— 23 35 25.6	+ 13.4	D.	
17	. .	. .	. .	+ 2 25.6	15 17 31.7	16.7	+ 23 35 50.8	+ 3.7	D.	
18	. .	. .	. .	— 0 44.1	70 24 23.5	2 50.1	— 31 33 34.4	+ 13.0	D.	
19	. .	. .	. .	— 1 2.6	70 24 5.0	2 50.1	— 31 33 15.6	+ 13.0	D.	
20	30.075	32.2	28.5	— 1 46.6	70 23 21.0	2 50.0	— 31 32 31.8	+ 12.4	D.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
22	. .	. .	. .	— 2 11.1	14 27 53.4	15.4	+ 24 25 30.4	+ 16.0	D.	
23	30.223	43.5	40.9	— 0 4.3	27 34 59.8	31.2	+ 11 18 8.2	+ 20.4	D.	
24	. .	. .	. .	— 2 6.3	60 22 58.6	1 44.9	— 21 31 4.3	+ 30.0	D.	
25	. .	. .	40.9	— 1 23.3	69 23 40.9	2 37.9	— 30 32 39.6	+ 31.9	D.	
26	. .	. .	. .	— 1 54.0	69 18 10.2	2 38.9	— 30 27 9.9	+ 31.2	D.	
27	. .	. .	. .	— 2 11.6	67 57 52.9	2 27.0	— 29 6 40.7	+ 30.4	D.	
28	. .	. .	. .	+ 0 38.3	24 5 41.9	26.8	+ 14 47 30.5	+ 16.6	D.	
29	30.220	43.0	39.3	— 2 28.9	16 52 35.0	18.2	+ 22 0 46.0	+ 13.6	D.	+0″.33 added to mean of A, B, E, and F.
30	. .	. .	. .	— 0 41.3	78 39 23.2	4 50.6	— 39 50 34.6	+ 30.5	D.	
31	. .	. .	. .	— 0 40.3	28 9 22.6	32.1	+ 10 43 44.5	+ 16.6	D.	
32	. .	. .	. .	+ 0 33.4	28 10 36.4	32.2	+ 10 42 30.6	+ 16.6	D.	
33	. .	. .	. .	— 0 9.3	37 24 52.4	45.9	+ 1 28 0.9	+ 18.7	D.	
34	. .	. .	. .	— 2 34.5	S. 37 22 27.2	45.9	+ 1 30 26.1	+ 18.7	D.	
35	. .	. .	. .	+ 1 17.0	N. 6 23 38.7	6.7	+ 45 17 24.6	+ 4.5	D.	
36	. .	. .	37.8	— 0 50.4	S. 59 44 12.2	1 42.9	— 20 52 15.9	+ 21.9	D.	
37	. .	. .	. .	+ 1 50.9	13 21 53.0	14.3	+ 25 31 31.9	+ 8.3	D.	
38	. .	. .	. .	— 1 28.2	15 13 35.2	16.4	+ 23 39 46.6	+ 8.0	D.	
39	. .	. .	. .	+ 0 40.7	15 35 43.4	16.8	+ 23 17 39.0	+ 7.2	D.	
40	. .	. .	. .	— 1 21.7	15 33 41.0	16.8	+ 23 19 41.4	+ 7.2	D.	
41	. .	. .	. .	— 0 24.2	S. 24 4 37.4	27.0	+ 14 48 34.8	+ 9.1	D.	
42	. .	. .	. .	+ 0 58.9	N. 9 8 56.0	9.8	+ 48 2 45.0	— 1.2	D.	
43	30.191	39.7	34.1	— 2 52.8	S. 62 27 10.5	1 55.7	— 23 35 27.0	+ 14.0	D.	
44	. .	. .	. .	+ 0 27.8	N. 13 14 26.5	14.3	+ 52 8 20.0	+ 2.9	D.	
45	30.190	39.5	34.0	+ 1 23.1	S. 72 36 26.5	3 11.3	— 33 45 58.6	+ 13.6	D.	
46	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
47	. .	. .	43.3	— 1 59.1	74 53 9.0	3 35.7	— 36 3 5.5	+ 29.4	D.	
48	30.028	45.5	. .	+ 0 0.6	67 30 8 2	2.22.0	— 28 38 51.0	+ 26.7	D.	
49	. .	. .	. .	— 2 54.0	64 32 14.2	2 4.0	— 25 40 39.0	+ 25.1	D.	
50	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
51	30.040	45.0	40.3	— 1 12.8	43 3 54.0	55.6	— 4 11 10.3	+ 14.0	D.	
52	. .	. .	. .	+ 1 25.0	19 41 32.6	21.3	+ 19 11 45.2	+ 7.2	D.	
53	. .	. .	. .	— 0 45.8	21 59 21.2	24.1	+ 16 53 54.0	+ 6.1	D.	
54	30.048	44.5	39.0	+ 1 53.8	69 12 1.6	2 35.9	— 30 20 58.3	+ 15.2	D.	
55	. .	. .	. .	+ 0 40.3	66 55 47.5	2 19.5	— 28 4 27.8	+ 13.8	D.	
56	. .	. .	. .	— 1 46.7	67 13 21.2	2 21.5	— 28 22 3.5	+ 13.1	D.	
57	30.047	44.3	38.0	+ 0 19.6	69 25 27.4	2 38.1	— 30 34 26.3	+ 12.8	D.	
58	. .	. .	. .	+ 2 40.6	14 32 47.5	15.5	+ 24 20 36.3	+ 1.6	D.	
59	. .	. .	. .	+ 0 4.7	62 20 12.2	1 53.7	— 23 28 26.7	+ 9.7	D.	
60	. .	. .	. .	+ 2 36.0	62 22 43.5	1 54.0	— 23 30 58.3	+ 9.7	D.	
61	. .	. .	. .	— 4 11.8	69 50 55.5	2 41.9	— 30 59 58.2	+ 9.5	D.	
62	. .	. .	. .	— 1 5.9	69 54 1.3	2 42.4	— 31 3 4.5	+ 9.4	D.	
63	30.059	43.5	37.2	+ 2 40.7	22 37 47.3	25.0	+ 16 15 26.9	+ 1.7	D.	
64	. .	. .	. .	+ 1 15.0	7 1 19.4	7.4	+ 31 52 12.4	+ 13.5	D.	
65	30.022	56.5	55.5	— 1 0.4	63 9 2.6	1 53.4	— 24 17 16.8	+ 31.7	D.	
66	. .	. .	. .	— 0 26.6	S. 26 44 36.7	29.1	+ 12 8 33.4	+ 19.2	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Feb. 13	1	Anon. 4^h 6^m 4^s	. .	1	V.	325 45 4.0	0.0	51.8	8.0	3.7	7.0	2.42	32.271	− 0.083	32.188
	2	Anon. 4^h 13^m 28^s	9.0	3	III–VII.	345 55 3.8	59.0	52.0	8.8	1.2	4.0	1.47	30.109	. .	30.031
	3	Anon. 4^h 21^m 1^s	9.0	3	I, III, VII.	304 5 4.7	59.2	52.8	9.7	6.0	9.0	3.57	26.266	. .	26.181
	4	Anon. 4^h 29^m 16^s	9.0	3	III–VII.	296 55 6.3	2.1	54.3	oblit.	6.5	10.4	5.21	34.924	. .	34.837
	5	Weisse IV, 729	. .	3	IV–VI.	326 55 6.3	3.0	55.0	10.3	6.0	8.8	4.90	28.396	. .	28.313
	6	Anon. 4^h 41^m 25^s	8.0	2	I, III.	308 15 6.7	3.1	55.0	10.7	7.1	11.3	5.65	29.662	. .	29.578
	7	Anon. 4^h 41^m 28^s	8.0	1	V.	" " "	"	"	"	"	"	"	32.232	. .	32.149
	8	Anon. 4^h 48^m 49^s	9.0	3	III–VII.	288 55 6.8	3.0	55.1	11.2	8.0	11.1	5.87	34.654	. .	34.565
	9	Anon. 4^h 54^m 41^s	9.0	3	V, VI, VII.	313 0 6.0	1.1	56.7	11.0	7.0	10.0	5.30	28.347	. .	28.260
	10	B. A. C. 1578	6.5	3	IV–VI.	345 15 5.6	1.2	55.6	10.4	3.2	7.8	3.97	36.357	. .	36.275
	11	(*131) Washington	8.5	3	III–VII.	317 55 5.1	1.0	54.9	9.0	4.0	8.8	3.80	31.832	. .	31.749
	12	O. Arg. N. 5930	. .	3	I–5.	248 40 5.0	0.2	58.0	15.8	6.8	13.0	6.47	34.794	. .	34.703
	13	Anon. 5^h 33^m 20^s	8.0	3	IV–VI.	297 40 6.0	2.1	54.2	oblit.	6.9	10.8	5.42	33.602	. .	33.518
	14	Anon. 5^h 41^m 43^s	8.7	3	III–VII.	295 10 6.2	1.0	54.8	10.9	7.0	11.0	5.15	23.328	. .	23.241
	15	Lacaille 2090	. .	3	V, VI, VII.	353 15 6.1	3.9	58.0	15.1	5.6	10.1	6.47	33.973	. .	33.891
	16	O. Arg. N. 6525	9.0	3	IV–VI.	245 10 5.8	1.4	59.0	17.7	6.8	15.0	7.62	32.165	. .	32.072
	17	Anon. 6^h 25^m 32^s	9.0	3	III–VII.	348 50 5.4	3.0	56.9	13.8	3.9	8.1	5.18	34.541	. .	34.464
	18	Weisse VI, 1069	8.0	3	III–VII.	333 15 6.0	3.0	56.0	12.9	5.1	8.3	5.22	32.759	. .	32.678
	19	Anon. 6^h 53^m 55^s	. .	3	IV–VI.	345 0 6.9	2.2	58.0	12.0	5.0	8.9	5.50	35.963	. .	35.879
	20	Nadir	. .	.	. .	100 0 6.0	4.2	56.0	15.2	7.0	12.1	6.75	30.178	. .	. .
15	21	ψ Tauri	. .	3	IV–VI.	290 15 6.2	3.4	57.0	11.9	5.1	10.8	5.73	30.575	− 0.070	30.503
	22	ω^1 Tauri	. .	3	IV–VI.	299 35 7.2	4.0	58.1	15.0	6.0	11.0	6.88	24.971	. .	24.900
	23	Rumker 1159	8.0	3	III–VII.	300 55 8.0	5.0	59.0	16.3	6.2	12.2	7.78	28.805	. .	27.732
	24	Weisse (2) IV, 538	9.0	1	V.	296 55 8.0	5.0	59.0	oblit.	7.8	11.4	7.96	28.902	. .	28.832
	25	O. Arg. N. 5439	6.0	2	V, VI.	273 15 8.1	5.2	2.0	19.7	8.5	13.4	9.48	24.195	. .	24.195
	26	B. A. C. 1565	. .	3	I–5.	239 50 7.7	4.0	1.5	22.0	8.0	15.0	9.70	30.538	. .	30.453
	27	Lacaille 1787	. .	3	IV–VI.	350 15 7.0	4.0	0.7	18.2	3.0	7.8	6.78	26.589	. .	26.521
	28	Anon. 4^h 29^m 49^s	. .	3	IV–VI.	293 20 7.0	4.3	58.7	17.1	5.1	9.2	6.90	26.641	. .	26.570
	29	Weisse V, 1034	8.5	3	III–VII.	309 5 6.0	3.0	57.0	13.2	3.9	8.2	5.22	35.124	. .	35.052
	30	O. Arg. S. 4499	. .	2	V, VI.	348 0 5.8	3.8	58.9	17.7	1.2	7.1	5.75	32.158	. .	32.087
	31	O. Arg. S. 4527	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	21.559	. .	21.490
	32	π^1 Columbæ	. .	3	IV–VI.	1 5 5.0	3.8	59.0	18.2	2.3	6.0	5.72	30.037	. .	29.970
	33	Anon. 6^h 27^m 7^s	. .	2	V, VII.	349 55 5.0	2.1	58.8	16.9	1.0	5.0	4.80	25.362	. .	25.294
	34	O. Arg. S. 5574	7.0	3	III–VII.	348 0 4.7	2.2	59.0	16.8	0.0	6.0	4.79	33.833	. .	33.768
	35	O. Arg. S. 5725	8.0	3	III–VII.	347 5 5.0	2.0	59.0	16.5	1.1	6.0	4.93	30.057	. .	29.992
	36	Lacaille 2507	6.7	3	IV–VI.	342 40 4.0	0.4	56.5	13.3	59.9	3.8	2.98	33.959	. .	33.890
	37	O. Arg. S. 6073	7.0	1	IV.	349 20 6.0	3.8	0.9	18.1	2.0	5.5	6.05	29.717	. .	29.652
	38	Anon. 6^h 56^m 12^s	7.0	1	VI.	" " "	"	"	"	"	"	"	35.740	. .	35.670
	39	Anon. 7^h 2^m 57^s	. .	3	I, III, IV.	350 5 6.2	3.8	0.0	18.4	2.1	6.0	6.08	33.012	. .	32.958
	40	Lacaille 2637	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	31.243	. .	31.174
	41	O. Arg. S. 6442	. .	3	IV–VI.	345 55 5.1	2.9	58.0	15.3	1.0	5.0	4.55	28.196	. .	28.128
	42	Anon. 7^h 15^m 0^s	7.0	3	IV–VI.	333 20 5.0	3.0	58.5	16.9	2.0	5.0	5.07	36.563	. .	36.494
	43	Anon. 7^h 17^m 32^s	8.0	3	III–VII.	" " "	"	"	"	"	"	"	23.796	. .	23.728
	44	Weisse VII, 896	7.7	3	III–VII.	305 35 5.4	1.0	55.5	14.9	2.0	7.0	4.30	28.903	. .	28.831
	45	B. A. C. 2526	. .	3	III–VII.	313 20 4.0	1.2	56.1	14.0	2.8	6.3	4.07	27.580	. .	27.509
	46	Lacaille 2952	7.0	3	IV, V, VII.	342 45 4.2	2.9	59.0	16.0	1.0	4.3	4.57	23.789	. .	23.721
	47	O. Arg. S. 7442	. .	2	IV–VI.	" " "	"	"	"	"	"	"	32.516	. .	32.447
	48	Nadir	. .	.	. .	100 0 3.1	5.0	56.8	19.1	3.0	9.0	6.00	30.141	. .	. .
19	49	ω^1 Tauri	. .	3	V, VI, VII.	299 40 4.0	4.2	55.0	15.1	3.2	6.8	4.72	34.490	− 0.045	34.440
	50	Lacaille 1459	. .	3	IV–VI.	348 20 4.0	4.7	58.2	17.1	0.8	4.0	4.80	27.787	. .	27.744
	51	Anon. 4^h 34^m 4^s	9.0	3	III–VII.	310 50 3.8	4.0	55.0	14.2	2.1	4.9	4.00	26.918	. .	26.872
	52	Anon. 4^h 41^m 52^s	. .	3	III–VII.	348 50 3.0	5.0	58.0	18.4	1.2	3.2	4.80	27.565	. .	27.526
	53	Weisse (2) IV, 1138	9.0	3	V, VI, VII.	296 30 4.5	5.6	57.0	16.8	5.0	7.9	6.13	29.710	. .	29.659
	54	Anon. 4^h 54^m 36^s	9.5	1	V.	347 40 5.0	6.0	0.0	19.1	3.0	5.8	6.48	30.214	. .	30.169
	55	Anon. 5^h 1^m 12^s	9.5	1	V.	" " "	"	"	"	"	"	"	39.973	. .	39.928
	56	Anon. 5^h 6^m 56^s	8.8	3	III–VII.	316 40 5.1	4.1	56.0	16.8	4.0	6.9	5.48	29.918	. .	29.873
	57	Anon. 5^h 14^m 20^s	8.0	3	IV–VI.	344 15 6.0	6.8	59.8	19.7	4.2	6.0	7.08	29.532	. .	29.486
	58	Weisse V, 776	7.0	3	III–VII.	320 10 7.0	6.8	59.8	18.8	5.0	7.0	7.40	34.212	. .	34.167
	59	Anon. 5^h 39^m 9^s	9.0	3	III–VII.	339 40 7.2	10.0	3.0	23.9	6.3	8.0	9.73	32.092	. .	32.053
	60	Weisse V, 1176	8.0	3	III–VII.	333 30 5.0	6.2	59.0	18.8	4.7	4.0	6.28	34.075	. .	34.032
	61	O. Arg. N. 6390	8.5	3	IV–VI.	246 35 6.0	8.0	1.8	25.4	7.1	12.0	10.05	28.056	. .	28.002
	62	O. Arg. N. 6525	9.0	1	V.	245 10 6.8	8.1	2.7	25.8	7.1	13.2	10.62	32.172	. .	32.127
	63	Anon. 6^h 7^m 2^s	9.0	3	III–VII.	346 25 6.6	7.1	1.6	22.0	4.6	6.0	7.98	29.578	. .	29.538
	64	Nadir	. .	.	. .	100 0 6.7	9.8	59.0	23.9	7.0	11.1	9.58	30.231	. .	. .
	65	O. Arg. S. 5251	7.7	3	III–VII.	348 5 6.8	9.4	3.0	23.4	5.0	8.0	9.27	31.438	. .	31.398

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. . .	. . .	54.8	− 1 8.6	S. 45 43 53.9	59.2	− 6 51 13.8	+ 25.0	D.	Other star too faint.
2	. . .	. . .	. . .	− 0 1.0	65 55 0.5	2 8.5	− 27 3 29.8	+ 30.1	D.	
3	. . .	. . .	. . .	+ 1 59.5	24 7 3.1	25.9	+ 14 46 10.3	+ 16.6	D.	
4	. . .	. . .	. . .	− 2 31.6	16 52 33.6	17.5	+ 22 0 48.1	+ 13.6	D.	Corr. of −1″.11 applied to mean of A, B, E, F.
5	. . .	. . .	. . .	+ 0 52.8	46 55 57.7	1 1.9	− 8 3 20.4	+ 23.2	D.	
6	. . .	. . .	. . .	+ 0 13.2	28 15 18.9	31.1	+ 10 37 49.2	+ 16.5	D.	
7	. . .	. . .	. . .	− 1 7.3	28 13 58.3	31.1	+ 10 39 9.8	+ 16.5	D.	
8	. . .	. . .	. . .	− 2 23.1	8 52 42.8	9.1	+ 30 0 47.4	+ 9.4	D.	
9	. . .	. . .	. . .	+ 0 54.5	33 0 59.8	37.7	+ 5 52 1.7	+ 17.1	D.	
10	30.020	56.0	52.0	− 3 16.5	65 11 47.5	2 5.0	− 26 20 13.3	+ 25.8	D.	
11	. . .	. . .	. . .	− 0 54.8	S. 37 54 9.0	45.2	+ 0 58 45.0	+ 17.1	D.	
12	. . .	. . .	. . .	− 2 27.4	N. 31 22 21.0	35.4	+ 70 16 35.6	− 4.0	D.	
13	. . .	. . .	. . .	− 1 50.3	S. 17 38 15.1	18.5	+ 21 15 5.6	+ 9.1	D.	Corr. −1.″03 applied to mean of A B E, F
14	. . .	. . .	. . .	+ 3 31.3	15 13 36.5	15.8	+ 23 39 46.9	+ 7.7	D.	
15	. . .	. . .	52.0	− 2 2.0	S. 73 13 4.5	3 10.1	− 34 22 35.4	+ 21.4	D.	
16	30.012	55.3	. . .	− 1 4.9	N. 34 50 57.3	40.4	+ 73 45 16.9	− 6.6	D.	
17	30.006	55.0	50.1	− 2 19.9	S. 68 47 45.2	2 28.0	− 29 56 34.1	+ 16.6	D.	
18	. . .	. . .	. . .	− 1 23.9	53 13 41.3	1 17.8	− 14 21 19.9	+ 12.8	D.	
19	29.998	54.5	49.9	− 3 4.4	64 57 1.1	2 9.8	− 26 5 31.8	+ 12.6	D.	
20	. . .	. . .	. . .	. . .	. . . .	. . .	. . . .	. .	D.	
21	. . .	. . .	. . .	− 0 15.8	10 14 50.0	10.4	+ 28 38 38.9	+ 13.4	D.	
22	29.573	53.5	49.7	+ 2 39.5	19 37 46.4	20.5	+ 19 15 32.3	+ 16.5	D.	
23	. . .	. . .	. . .	+ 1 11.3	20 56 19.1	22.0	+ 17 56 58.1	+ 16.1	D.	
24	29.605	53.0	48.5	+ 0 36.6	S. 16 55 44.5	16.8	+ 21 57 37.9	+ 13.9	D.	Corr. −0″.09 applied to mean of A B, E, F; clouded up in the south.
25	. . .	. . .	. . .	+ 3 3.9	N. 6 41 46.6	6.8	+ 45 35 32.7	+ 4.0	D.	
26	29.610	53.0	47.7	− 0 14.2	40 10 4.5	48.7	+ 79 4 32.4	− 4.7	D.	
27	. . .	. . .	. . .	+ 1 48.9	70 16 55.7	2 39.9	− 31 25 56.3	+ 25.9	D.	
28	. . .	. . .	. . .	+ 1 47.3	13 21 54.2	13.8	+ 25 31 31.2	+ 8.0	D.	
29	. . .	. . .	. . .	− 2 38.4	29 2 26.8	32.2	+ 9 50 40.2	+ 13.0	D.	
30	. . .	. . .	. . .	− 1 5.1	67 59 0.6	2 22.6	− 29 7 44.0	+ 20.9	D.	
31	29.618	51.5	44.8	+ 4 26.0	68 4 31.7	2 23.4	− 29 13 15.9	+ 20.7	D.	
32	. . .	. . .	44.7	+ 0 0.9	81 5 6.7	5 55.0	− 42 17 22.4	+ 21.8	D.	
33	29.614	51.0	44.2	+ 2 27.2	69 57 32.0	2 38.1	− 31 6 30.9	+ 17.1	D.	
34	. . .	. . .	. . .	− 1 58.1	67 58 6.7	2 22.9	− 29 6 50.4	+ 15.4	D.	
35	. . .	. . .	. . .	+ 0 0.2	67 5 5.2	2 16.9	− 28 13 42.8	+ 14.6	D.	
36	29.622	50.3	43.7	− 2 1.9	62 38 1.0	1 52.0	− 23 46 13.9	+ 13.2	D.	
37	. . .	. . .	. . .	+ 0 10.9	69 20 16.9	2 33.3	− 30 29 11.0	+ 13.2	D.	
38	. . .	. . .	. . .	− 2 57.8	69 17 8.2	2 32.8	− 30 26 1.9	+ 13.2	D.	
39	. . .	. . .	. . .	− 1 32.7	70 3 33.4	2 39.2	− 31 12 33.4	+ 12.4	D.	
40	. . .	. . .	. . .	− 0 36.8	70 4 29.3	2 39.4	− 31 13 29.5	+ 12.4	D.	
41	29.618	50.0	43.5	+ 0 58.6	65 56 3.1	2 9.8	− 27 4 33.7	+ 11.1	D.	
42	. . .	. . .	. . .	− 3 23.7	53 16 41.4	1 18.0	− 14 24 20.2	+ 8.5	D.	
43	. . .	. . .	. . .	+ 3 16.1	53 23 21.2	1 18.3	− 14 31 0.3	+ 8.2	D.	
44	. . .	. . .	. . .	+ 0 36.6	25 35 40.9	27.9	+ 13 17 30.4	+ 1.0	D.	
45	. . .	. . .	. . .	+ 1 18.0	33 21 22.0	38.4	+ 5 31 38.8	+ 3.1	D.	
46	. . .	. . .	. . .	+ 3 16.3	62 48 20.9	1 53.0	− 23 56 34.7	+ 6.7	D.	
47	29.615	49.0	43.3	− 1 16.7	62 43 47.9	1 52.9	− 23 52 1.6	+ 6.4	D.	
48	. . .	. . .	. . .	. .	. . . .	. .	. . . .	. .	D.	
49	. . .	. . .	. . .	− 2 19.2	19 37 45.5	21.1	+ 19 15 32.6	+ 16.7	D.	
50	29.888	46.0	40.0	+ 1.10.6	68 21 15.4	2 28.2	− 29 30 4.4	+ 30.4	D.	
51	. . .	. . .	. . .	+ 1 37.9	30 51 41.9	35.4	+ 8 1 21.9	+ 18.4	D.	
52	. . .	. . .	. . .	+ 1 17.4	68 51 22.2	2 32.3	− 30 0 15.4	+ 28.9	D.	
53	. . .	. . .	. . .	+ 0 10.7	16 30 16.8	17.6	+ 22 23 4.8	+ 12.0	D.	No other star seen.
54	. . .	. . .	. . .	− 0 5.3	67 40 1.2	2 23.8	− 28 48 45.8	+ 27.4	D.	
55	. . .	. . .	. . .	− 5 11.6	67 34 54.9	2 23.3	− 28 43 38.9	+ 26.8	D.	
56	29.897	45.0	37.9	+ 0 4.0	36 40 9.4	44.3	+ 2 12 45.4	+ 17.6	D.	
57	. . .	. . .	. . .	+ 0 16.1	64 15 23.2	2 2.8	− 25 23 46.8	+ 24.8	D.	
58	. . .	. . .	37.1	− 2 10.6	40 7 56.8	50.2	− 1 15 7.8	+ 16.6	D.	
59	. . .	. . .	. . .	− 1 4.3	N. 59 39 5.4	1 41.5	− 20 47 7.7	+ 21.2	D.	
60	. . .	. . .	. . .	− 2 6.4	S. 53 27 59.9	1 20.3	− 14 35 41.0	+ 18.9	D.	
61	. . .	. . .	. . .	+ 1 2.5	N. 33 23 47.4	39.3	+ 72 18 6.0	− 6.7	D.	
62	. . .	. . .	. . .	− 1 6.6	N. 34 50 56.0	41.5	+ 73 45 16.8	− 7.5	D.	
63	29.908	43.5	37.0	+ 0 14.5	S. 66 25 22.4	2 15.9	− 27 33 59.2	+ 19.6	D.	
64	. . .	. . .	. . .	. . .	. . . .	. . .	. . . .	. .	D.	
65	29.926	43.5	36.0	− 0 43.8	S. 68 4 25.5	2 27.6	− 29 13 13.9	+ 17.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1869.						° ' "	"	"	"	"	"	"	r.	r.	r.
Feb. 19	1	Anon. $6^h 37^m 44^s$.	9.0	3	III–VII.	295 5 7.0	7.0	59.8	22.0	8.3	10.0	7.35	33.613	– 0.045	33.564
	2	O. Arg. S. 5772 . .	8.5	3	III–VII.	346 0 7.0	8.0	2.0	20.8	5.8	6.0	8.27	28.073	. .	28.033
	3	Anon. $6^h 51^m 58^s$.	8.0	3	IV–VI.	349 35 4.0	6.2	59.7	21.0	2.0	3.8	6.12	30.993	. .	30.950
	4	Anon. $7^h 2^m 7^s$ . .	9.0	3	IV–VI.	344 55 4.2	6.1	59.7	19.0	3.8	4.7	6.25	29.727	. .	29.683
	5	O. Arg. S. 6262 . .	8.0	3	VI, VII, VIII.	" " "	"	"	"	"	"	"	27.569	. .	27.528
	6	Anon. $7^h 15^m 26^s$.	8.0	3	IV–VI.	273 50 4.3	6.1	59.1	21.1	6.0	9.2	7.63	34.905	. .	34.857
	7	Anon. $7^h 30^m 34^s$.	. .	3	IV–VI.	348 40 4.1	8.2	1.0	22.1	4.0	4.8	7.37	34.848	. .	34.805
	8	Anon. $7^h 33^m 48^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.756	. .	26.713
	9	Anon. $7^h 42^m 38^s$.	. .	3	III–VII.	" " "	"	"	"	"	"	"	30.114	. .	30.075
24	10	Lacaille 1595. . .	. .	3	IV–VI.	354 55 5.7	7.1	1.6	21.3	3.0	5.0	7.28	34.102	– 0.115	33.989
	11	O. Arg. S. 3494 . .	7.7	3	III–VII.	348 0 6.0	7.0	2.8	22.0	2.0	5.0	7.47	35.545	. .	35.435
	12	Anon. $4^h 53^m 22^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	36.412	. .	36.299
	13	Weisse V, 22. . .	7.7	3	IV–VI.	289 10 6.0	6.3	0.0	21.4	4.1	7.3	7.52	31.867	. .	31.750
	14	B. A. C. 1641. . .	7.0	3	IV–VI.	353 55 5.3	7.8	1.5	23.1	3.9	5.0	7.77	30.248	. .	30.135
	15	O. Arg. N. 6082 . .	9.0	3	IV–VI.	348 40 6.0	4.9	2.0	24.4	4.0	10.0	8.55	26.376	. .	26.253
	16	O. Arg. S. 4395 . .	. .	3	III–VII.	344 50 5.8	7.8	2.0	21.1	3.9	5.0	7.60	29.315	. .	29.205
	17	Anon. $5^h 49^m 26^s$.	9.0	2	IV–VI.	347 50 6.0	8.2	3.0	24.0	3.0	5.7	8.32	33.798	. .	33.686
	18	O. Arg. S. 4453 . .	7.5	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.289	. .	30.175
	19	O. Arg. S. 4481 . .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	39.457	. .	39.344
	20	O. Arg. S. 4680 . .	8.0	2	V, VII.	349 25 6.0	8.1	3.1	24.8	3.2	4.0	8.20	24.670	. .	24.557
	21	Nadir	. .	.	. .	100 0 6.0	10.1	0.3	26.0	6.3	9.8	9.75	30.306	. .	. .
	22	Lacaille 2399. . .	7.0	3	IV–VI.	349 20 6.0	7.8	2.0	23.0	3.0	4.1	7.65	25.203	. .	25.090
	23	Anon. $6^h 38^m 21^s$.	8.5	3	I, VI, IX.	280 10 6.0	8.0	1.0	24.0	5.9	8.9	8.97	26.737	. .	26.593
	24	Anon. $6^h 38^m 23^s$.	7.5	2	II–VIII.	" " "	"	"	"	"	"	"	24.066	. .	23.928
	25	Lacaille 2526. . .	. .	3	IV–VI.	344 15 5.0	6.0	0.1	20.4	2.8	3.9	6.37	34.263	. .	34.149
	26	Anon. $7^h 2^m 6^s$ . .	. .	2	III–VII.	344 55 6.2	6.6	2.0	21.2	3.2	4.8	7.33	29.854	. .	29.747
	27	Lacaille 2767, (1st *).	8.5	4	II–VIII.	354 30 6.1	8.0	3.0	23.3	4.0	5.0	8.23	28.981	. .	28.878
	28	Lacaille 2767, (2d *).	7.5	3	III–VII.	" " "	"	"	"	"	"	"	29.254	. .	29.146
	29	Anon. $7^h 18^m 13^s$.	7.0	2	VIII, IX.	" " "	"	"	"	"	"	"	39.163	. .	39.068
	30	Weisse (2) VII, 789 .	. .	4	II, III, VII, VIII.	277 45 6.8	7.0	0.4	25.1	5.0	9.2	8.92	28.861	. .	28.727
	31	Weisse (2) VII, 791 .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	22.001	. .	21.883
	32	Lalande 15079 . .	8.0	3	IV–VI.	329 50 7.1	8.3	2.9	23.2	5.2	6.4	8.85	24.981	. .	24.867
	33	O. Arg. S. 7464 . .	8.0	4	II–VIII.	345 35 6.0	6.1	0.6	20.0	1.8	3.1	6.27	30.418	. .	30.314
	34	O. Arg. S. 7465 . .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	36.309	. .	36.196
	35	Weisse (2) VII, 1669.	8.0	3	III–VII.	302 5 5.7	6.8	0.7	23.0	4.7	7.0	7.98	32.995	. .	32.877
	36	Weisse (2) VIII, 22 .	8.0	3	III–VII.	" " "	"	"	"	"	"	"	23.102	. .	22.984
	37	Anon. $8^h 14^m 13^s$.	. .	3	III–VII.	345 35 4.9	5.8	0.0	21.0	1.2	1.9	5.80	36.159	. .	36.049
	38	Anon. $8^h 20^m 46^s$.	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	31.175	. .	31.069
	39	Weisse VIII, 721 .	. .	3	IV–VI.	308 30 5.3	6.0	59.2	20.8	3.9	5.8	6.83	27.099	. .	26.983
	40	Weisse (2) VIII, 810.	. .	3	III–VII.	291 15 4.8	5.9	59.0	22.0	2.9	5.8	6.73	21.564	. .	21.444
	41	Weisse (2) VIII, 894.	. .	3	III–VII.	" " "	"	"	"	"	"	"	36.226	. .	36.106
	42	B. A. C. 3006. . .	6.7	3	II, III, IX.	351 10 4.2	6.2	1.2	22.8	2.0	2.3	6.45	33.231	. .	33.136
	43	Anon. $8^h 44^m 25^s$.	8.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	22.868	. .	22.760
26	44	O. Arg. S. 8225 . .	7.5	3	III–VII.	342 45 4.1	4.6	58.1	19.0	2.0	3.7	5.25	28.478	– 0.069	28.413
	45	Weisse VIII, 415 .	8.0	2	V, VII.	304 55 5.0	4.1	57.0	19.0	4.7	7.9	6.28	25.030	. .	24.957
	46	Weisse VIII, 569 .	9.0	3	III–VII.	306 50 5.0	5.0	57.3	18.1	4.3	8.0	6.28	27.866	. .	27.795
	47	Weisse VIII, 738	. .	3	III–VII.	306 40 5.1	4.8	57.0	18.0	5.0	7.8	6.28	22.606	. .	22.535
	48	*f* Mali	6.0	3	IV–VI.	347 55 5.0	6.9	1.0	22.0	3.0	6.0	7.32	26.057	. .	25.986
	49	Lacaille 3474. . .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	30.809	. .	30.742
	50	O. Arg. S. 8978 . .	8.0	4	I, II, VIII, IX.	348 10 5.0	6.0	1.0	20.0	2.1	5.2	6.55	33.632	. .	33.585
	51	O. Arg. S. 8979 . .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	37.142	. .	37.075
	52	Lacaille 3574. . .	7.0	2	V, VI.	350 55 5.0	5.8	59.2	21.2	3.0	4.0	6.37	36.925	. .	36.856
	53	Anon. $8^h 47^m 27^s$.	7.5	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	29.352	. .	29.295
	54	O. Arg. S. 9258 . .	8.0	3	III–VII.	343 45 5.0	5.3	58.1	19.8	3.0	5.2	6.07	26.314	. .	26.249
	55	Anon. $9^h 1^m 28^s$ . .	8.3	3	2–4.	237 0 4.3	oblit.	0.0	23.7	4.0	10.2	8.75	32.282	. .	32.213
	56	Carrington 1338 . .	9.0	3	1–5.	" " "	"	"	"	"	"	"	20.847	. .	20.777
	57	B. A. C. 3174. . .	6.0	3	IV–VI.	357 40 3.0	4.8	59.1	21.0	2.0	oblit.	5.89	29.149	. .	29.082
	58	Anon. $9^h 13^m 42^s$.	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	25.774	. .	25.707
	59	Nadir	. .	.	. .	100 0 2.8	7.0	56.7	21.3	4.1	7.3	6.53	30.157	. .	. .
Mar. 1	60	π^1 Orionis	. .	3	III–VII.	312 10 3.1	6.0	57.0	18.0	2.2	3.2	4.92	31.380	– 0.052	31.327
	61	O. Arg. S. 3506 . .	. .	3	IV–VI.	342 20 3.0	4.2	58.1	20.4	1.8	1.2	4.78	31.163	. .	31.112
	62	O. Arg. S. 3516 . .	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	26.500	. .	26.457
	63	Weisse V, 48. . .	. .	3	IV–VI.	304 40 1.8	2.1	55.0	17.2	1.6	3.9	3.60	27.638	. .	27.585
	64	Anon. $5^h 12^m 45^s$.	8.0	3	III–VII.	346 30 3.9	5.3	59.8	20.3	2.0	3.0	5.72	31.446	. .	31.399
	65	Anon. $5^h 22^m 45^s$.	. .	3	III–VII.	348 35 3.2	6.0	0.0	21.0	2.2	2.8	5.87	34.959	. .	34.912

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 51.8	S. 15 3 15.6	16.1	+ 23 50 7.5	+ 3.4	D.	
2	. .	. .	. .	+ 1 1.6	66 1 9.8	2 14.6	− 27 9 45.3	+ 14.9	D.	
3	30.020	42.8	34.2	− 0 29.8	69 34 36.4	2 40.8	− 30 43 38.0	+ 14.6	D.	
4	. .	. .	. .	+ 0 9.9	64 55 16.2	2 8.1	− 26 3 45.1	+ 12.6	D.	
5	. .	. .	. .	+ 1 17.4	S. 64 56 23.6	2 8.2	− 26 4 52.6	+ 12.6	D.	
6	. .	. .	. .	− 2 32.3	N. 6 12 24.6	6.6	+ 45 6 10.4	− 4.7	D.	
7	. .	. .	. .	− 2 30.6	68 37 36.8	2 32.8	− 29 46 30.4	+ 9.5	D.	
8	. .	. .	. .	+ 1 42.8	68 41 50.2	2 33.3	− 29 50 44.3	+ 9.1	D.	
9	29.940	41.5	33.2	− 0 2.3	68 40 5.0	2 33.0	− 29 48 58.8	+ 7.9	D.	
10	30.246	39.0	34.9	− 2 5.0	74 53 2.2	3 39.5	− 36 3 2.6	+ 30.2	D.	
11	. .	. .	. .	− 2 50.4	67 57 17.1	2 27.6	− 29 6 5.5	+ 28.1	D.	
12	. .	. .	. .	− 3 17.6	67 56 49.9	2 28.8	− 29 5 39.5	+ 27.8	D.	
13	. .	. .	. .	− 0 54.8	9 9 12.7	9.8	+ 29 44 16.7	+ 8.5	D.	
14	30.272	38.0	33.9	− 0 4.2	S. 73 55 3.5	3 28.1	− 35 4 52.4	+ 27.4	D.	
15	. .	. .	33.1	+ 1 57.2	N. 31 17 54.2	35.3	+ 70 12 8.7	− 5.7	D.	
16	. .	. .	. .	+ 0 24.9	S. 64 50 32.5	2 3.0	− 25 58 56.3	+ 21.9	D.	
17	. .	. .	. .	− 1 55.6	67 48 12.8	2 21.6	− 28 56 55.1	+ 22.2	D.	
18	. .	. .	. .	− 0 5.5	67 50 2.8	2 22.0	− 28 58 45.6	+ 22.1	D.	
19	. .	. .	. .	− 4 53.2	67 45 15.1	2 21.5	− 28 53 57.3	+ 21.9	D.	
20	30.305	36.2	32.6	+ 2 50.8	69 27 59.0	2 41.7	− 30 37 1.4	+ 21.1	D.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
22	. .	. .	. .	+ 2 33.6	69 22 41.2	2 41.2	− 30 31 43.2	+ 17.2	D.	
23	. .	. .	. .	+ 1 46.6	0 11 55.6	0.2	+ 38 41 43.4	− 1.3	D.	
24	. .	. .	. .	+ 3 9.9	0 13 18.8	0.2	+ 38 40 20.2	− 1.3	D.	
25	30.330	36.5	31.8	− 2 10.1	64 12 56.3	2 6.1	− 25 21 23.2	+ 14.6	D.	
26	. .	. .	. .	+ 0 7.9	64 55 15.2	2 10.2	− 26 3 46.3	+ 13.3	D.	
27	. .	. .	. .	+ 0 35.1	74 30 43.4	3 37.8	− 35 40 42.0	+ 12.8	D.	
28	. .	. .	. .	+ 0 26.7	74 30 35.0	3 37.8	− 35 40 33.6	+ 12.8	D.	Close; double.
29	. .	. .	. .	− 4 44.6	S. 74 25 23.6	3 36.7	− 35 35 21.2	+ 12.6	D.	
30	. .	. .	. .	+ 0 39.9	N. 2 14 11.2	2.4	+ 41 7 52.8	− 5.1	D.	
31	30.364	36.5	31.1	+ 4 13.7	N. 2 10 37.4	2.3	+ 41 4 19.0	− 5.1	D.	
32	. .	. .	. .	+ 2 40.6	S. 49 52 49.4	1 12.7	− 11 0 22.9	+ 6.5	D.	
33	. .	. .	. .	− 0 9.8	65 34 56.4	2 13.2	− 26 43 30.4	+ 8.7	D.	
34	. .	. .	. .	− 3 17.5	65 31 48.8	2 14.1	− 26 40 23.7	+ 8.4	D.	
35	. .	. .	. .	− 1 30.2	22 3 37.8	24.9	+ 16 49 36.6	− 1.4	D.	
36	. .	. .	. .	+ 3 39.4	22 8 47.4	25.0	+ 16 44 26.9	− 1.5	D.	
37	. .	. .	31.0	− 3 9.7	65 31 56.1	2 14.1	− 26 40 31.0	+ 4.5	D.	
38	30.364	36.0	. .	− 0 33.5	65 34 32.3	2 14.4	− 26 43 7.5	+ 3.7	D.	
39	. .	. .	. .	+ 1 34.4	28 31 41.2	33.3	+ 10 21 24.6	− 2.2	D.	
40	. .	. .	. .	+ 4 27.4	11 19 34.1	12.3	+ 27 33 52.8	− 5.6	D.	
41	. .	. .	. .	− 3 11.5	11 11 55.2	12.1	+ 27 41 31.9	− 5.8	D.	
42	. .	. .	. .	− 1 38.3	71 8 28.2	2 57.6	− 32 17 45.5	+ 1.0	D.	
43	. .	. .	30.9	+ 3 46.4	71 13 52.8	2 59.0	− 32 23 12.6	+ 1.0	D.	
44	29.728	42.0	34.9	+ 0 49.7	62 45 54.9	1 55.3	− 23 54 11.0	+ 5.3	D.	Windy; mercury in barometer oscillating.
45	. .	. .	. .	+ 2 37.8	24 57 44.0	27.7	+ 13 55 27.6	− 1.9	D.	
46	. .	. .	. .	+ 1 9.0	26 51 15.3	30.2	+ 12 1 53.8	− 2.1	D.	
47	. .	. .	. .	+ 3 53.4	26 43 59.6	30.1	+ 12 9 9.5	− 2.6	D.	
48	. .	. .	. .	+ 2 5.6	67 57 12.9	2 26.5	− 29 6 0.2	+ 2.3	D.	
49	. .	. .	. .	− 0 23.2	67 54 44.0	2 26.3	− 29 3 31.1	+ 2.1	D.	
50	. .	. .	. .	− 1 52.4	68 8 14.1	2 28.0	− 29 17 2.9	+ 1.5	D.	
51	. .	. .	. .	− 3 41.9	68 6 24.6	2 27.7	− 29 15 13.1	+ 1.5	D.	
52	. .	. .	. .	− 3 35.1	70 51 31.3	2 50.7	− 32 0 42.8	+ 1.1	D.	
53	29.778	40.5	33.8	+ 0 22.1	70 55 28.4	2 51.4	− 32 4 40.6	+ 1.0	D.	
54	. .	. .	. .	+ 1 57.4	S. 63 47 3.4	2 1.0	− 24 55 25.2	− 0.3	D.	
55	. .	. .	. .	− 1 9.3	N. 43 1 0.6	55.9	+ 81 55 35.7	− 16.7	D.	Corr. −0.73 applied to mean of C, D, E, F.
56	. .	. .	. .	+ 4 48.2	N. 42 55 3.0	55.7	+ 81 49 38.0	− 16.7	D.	
57	. .	. .	. .	+ 0 28.8	S. 77 40 35.6	4 28.0	− 38 51 24.4	− 2.0	D.	Corr. − 1.09 applied to mean of A, B, C, D.
58	29.778	39.5	33.1	+ 2 14.3	77 42 21.2	4 28.7	− 38 53 10.8	− 2.2	D.	
59	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
60	. .	. .	. .	− 0 41.6	32 9 23.3	38.0	+ 6 43 37.9	+ 18.2	D.	
61	. .	. .	. .	− 0 34.8	62 19 29.9	1 54.8	− 23 27 45.5	+ 26.8	D.	Revolution about 30.
62	29.976	35.5	31.9	+ 1 50.9	62 21 55.7	1 55.0	− 23 30 11.4	+ 26.8	D.	
63	. .	. .	. .	+ 1 15.6	24 41 19.2	27.9	+ 14 11 52.2	+ 13.9	D.	
64	29.965	35.0	30.4	− 0 43.8	66 29 21.9	2 18.6	− 27 38 1.2	+ 25.8	D.	
65	. .	. .	. .	− 2 34.0	S. 68 32 31.9	2 33.4	− 29 41 26.0	+ 25.4	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.			B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1869. Mar. 1	1	O. Arg. N. 6052 . .	8.0	3	1–5.	250	5	3.0	5.6	0.0	25.0	5.0	9.9	8.08	27.446	− 0.052	27.394
	2	Anon. 5^h 41^m 54^s	. .	3	IV–VI.	293	5	3.4	5.2	58.0	20.5	4.0	6.2	6.22	29.257	. .	29.204
	3	Anon. 5^h 47^m 50^s .	8.0	3	IV–VI.	246	30	4.0	7.0	2.0	27.0	6.9	10.2	9.52	34.664	. .	34.603
	4	O. Arg. N. 6356 . .	8.0	3	IV–VI.	“	“	“	“	“	“	“	“	“	29.331	. .	29.270
	5	Weisse (2) V, 1783 .	. .	3	III–VII.	284	30	4.3	5.6	59.8	23.2	5.1	7.1	7.55	28.041	. .	27.982
	6	Anon. 6^h 3^m 45^s . .	. .	4	I, II, VIII, IX.	287	25	5.2	7.0	57.6	23.7	5.0	7.2	7.62	27.371	. .	27.296
	7	Anon. 6^h 3^m 53^s . .	. .	3	IV–VI.	“	“	“	“	“	“	“	“	“	26.023	. .	25.969
	8	Nadir	. .	.	. .	100	0	5.6	10.5	59.5	25.8	7.0	9.0	9.57	30.237	. .	. .
	9	Anon. 6^h 37^m 43^s .	9.0	3	III–VII.	295	5	5.6	6.0	58.9	21.7	7.3	7.3	7.80	33.600	. .	33.544
	10	Anon. 6^h 48^m 6^s . .	9.0	1	V.	343	10	5.7	8.0	1.0	22.1	4.1	5.0	7.65	35.358	. .	35.306
	11	O. Arg. S. 6075 . .	7.0	4	I, II, VIII, IX.	349	20	6.2	9.0	3.0	24.1	5.0	5.0	8.72	29.934	. .	29.904
	12	Anon. 6^h 6^m 10^s . .	8.0	3	III–VII.	“	“	“	“	“	“	“	“	“	33.466	. .	33.420
	13	Anon. 6^h 6^m 12^s . .	8.0	1	IV.	“	“	“	“	“	“	“	“	“	34.937	. .	34.890
	14	Lacaille 2641. . .	. .	3	IV–VI.	343	50	6.0	8.8	1.1	24.0	5.0	5.1	8.33	24.282	. .	24.231
	15	O. Arg. S. 6623 . .	. .	3	III–VII.	345	10	4.9	7.0	0.2	20.2	2.7	3.0	6.33	27.150	. .	27.103
	16	Weisse VII, 569. .	8.0	1	V.	308	30	4.9	6.0	59.0	20.1	4.0	4.9	6.48	38.911	. .	38.859
	17	Anon. 7^h 20^m 7^s . .	8.0	2	VIII, IX.	“	“	“	“	“	“	“	“	“	25.750	. .	25.684
	18	Weisse VII, 1259 .	. .	3	III–VII.	330	45	4.6	7.2	59.8	22.9	3.7	4.7	7.15	27.702	. .	27.652
	19	Weisse (2) VII, 1366	8.0	3	IV–VI.	298	40	4.2	7.0	58.0	19.9	3.7	5.3	6.35	32.356	. .	32.303
	20	Anon. 7^h 56^m 48^s .	8.0	3	III–VII.	“	“	“	“	“	“	“	“	“	23.457	. .	23.401
	21	O. Arg. S. 8345 . .	. .	3	III–VII.	343	50	5.2	9.1	1.7	23.3	4.8	4.7	8.13	31.816	. .	31.768
	22	v^1 Cancri, (2d *) . .	. .	3	IV–VI.	293	55	5.0	8.0	1.0	24.0	6.3	8.0	8.72	29.049	. .	28.996
	23	Weisse (2) VIII, 458	. .	3	III–VII.	“	“	“	“	“	“	“	“	“	30.076	. .	30.020
	24	Anon. 8^h 28^m 21^s .	9.0	1	V.	308	45	6.0	9.0	1.2	22.0	7.0	7.2	8.73	30.368	. .	30.316
	25	c^1 Cancri.	. .	3	III–VII.	“	“	“	“	“	“	“	“	“	27.041	. .	26.987
	26	Anon. 8^h 37^m 3^s . .	8.7	3	III–VII.	304	45	6.0	7.8	59.4	23.7	6.1	7.0	8.33	29.830	. .	29.776
	27	Anon. 8^h 37^m 9^s . .	8.0	2	II–VIII.	305	10	5.2	7.0	59.0	22.8	5.0	6.0	7.50	30.826	. .	30.767
	28	Anon. 8^h 45^m 8^s . .	9.0	2	IV–VI.	“	“	“	“	“	“	“	“	“	34.437	. .	34.384
5	29	O. Arg. S. 6623 . .	. .	3	V, VI, VII.	345	10	5.0	10.3	1.9	25.0	3.0	2.7	7.98	27.277	− 0.062	27.215
	30	Lacaille 2814. . .	. .	3	III–VII.	347	0	4.9	9.2	2.0	24.8	2.3	3.8	7.83	34.257	. .	34.200
	31	Weisse VII, 816. .	8.0	3	III–VII.	305	35	4.0	8.2	59.8	23.3	3.0	3.0	6.88	29.037	. .	28.973
	32	B. A. C. 2521. . .	. .	3	2–4.	238	20	3.2	7.3	2.0	28.0	4.2	7.7	8.73	31.807	. .	31.745
	33	Weisse (2) VII, 1143	8.0	3	III–VII.	297	30	2.1	7.5	58.6	oblit.	2.2	2.1	5.74	26.176	. .	26.110
	34	Anon. 7^h 50^m 58^s .	9.0	3	IV–VI.	306	50	3.0	7.3	58.1	21.8	2.1	3.0	5.88	23.629	. .	23.566
	35	Weisse VII, 1504 .	8.0	3	IV–VI.	“	“	“	“	“	“	“	“	“	29.455	. .	29.392
	36	B. A. C. 2689. . .	. .	3	IV–VI.	355	30	3.0	11.4	1.1	25.1	1.0	0.8	7.07	27.825	. .	27.765
	37	O. Arg. S. 8338 . .	. .	3	III, IV, V.	343	50	3.0	8.8	0.0	24.1	1.2	1.0	6.35	30.461	. .	30.405
	38	O. Arg. S. 8343 . .	. .	3	VI, VII, VIII.	“	“	“	“	“	“	“	“	“	36.759	. .	36.699
	39	Anon. 8^h 23^m 7^s . .	9.0	3	III, IV, V.	347	5	3.0	8.0	1.0	24.9	0.8	1.7	6.57	24.685	. .	24.629
	40	Lacaille 3341. . .	7.0	3	IV–VI.	“	“	“	“	“	“	“	“	“	29.515	. .	29.455
	41	Anon. 8^h 24^m 40^s .	7.0	3	VII, VIII, IX.	“	“	“	“	“	“	“	“	“	26.805	. .	26.753
	42	Anon. 8^h 37^m 6^s . .	9.0	3	III–VII.	304	45	4.0	8.0	59.3	24.8	3.3	4.0	7.23	29.805		29.741
	43	B. A. C. 3031 . .	7.0	3	III–VII.	304	10	3.0	8.0	0.0	23.2	5.0	3.2	7.07	25.414	. .	25.349
	44	Nadir	. .	.	. .	100	0	2.8	11.7	58.8	26.1	4.2	5.0	8.10	30.200	. .	. .
12	45	Lacaille 1990. . .	. .	3	III–VII.	347	35	10.8	13.2	6.7	27.9	7.7	11.7	13.00	34.318	− 0.058	34.265
	46	O. Arg. S. 4499 . .	. .	3	III–VII.	348	0	5.9	8.2	2.0	21.3	2.0	5.0	7.40	32.144	. .	32.091
	47	Lacaille 2126. . .	. .	3	III–VII.	343	0	3.8	5.3	58.3	18.0	1.0	2.1	4.75	33.614	. .	33.560
	48	Anon. 6^h 7^m 3^s . .	. .	3	III–VII.	277	55	2.0	3.8	56.7	20.0	1.9	6.6	5.17	28.384	. .	28.318
	49	Lalande 12678 . .	. .	3	III–VII.	286	10	2.0	1.2	55.7	17.4	0.0	3.6	3.32	33.488	. .	33.424
	50	Anon. 6^h 38^m 20^s .	8.0	2	III–VII.	280	10	1.0	3.9	55.8	17.8	1.1	3.9	3.92	26.456	. .	26.386
	51	Anon. 6^h 38^m 18^s .	7.0	3	IV–VI.	“	“	“	“	“	“	“	“	“	23.794	. .	23.734
	52	Anon. 6^h 45^m 28^s .	. .	1	III.	347	25	3.0	5.0	58.9	19.1	59.8	1.3	4.52	30.242	. .	30.197
	53	Anon. 6^h 45^m 36^s .	9.0	2	IV, VII.	“	“	“	“	“	“	“	“	“	27.542	. .	27.488
	54	Anon. 6^h 45^m 36^s .	9.0	1	VI.	“	“	“	“	“	“	“	“	“	27.206	. .	27.147
	55	Weisse VII, 63 . .	9.0	2	V, VII.	333	30	3.4	6.0	58.8	18.1	1.9	1.8	5.00	35.723	. .	35.665
	56	Anon. 7^h 10^m 14^s .	9.0	3	III–VII.	“	“	“	“	“	“	“	“	“	29.556	. .	29.500
	57	Anon. 7^h 19^m 6^s . .	8.0	3	III–VII.	“	“	“	“	“	“	“	“	“	29.652	. .	29.596
	58	Anon. 7^h 21^m 5^s . .	8.0	3	III–VII.	303	20	4.1	5.4	58.0	20.2	2.9	5.1	5.95	38.217	. .	38.156
	59	Weisse (2) VII, 667 .	8.0	3	I, III, V.	“	“	“	“	“	“	“	“	“	26.415	. .	26.357
	60	Weisse VII, 681. .	8.0	2	V, VII.	“	“	“	“	“	“	“	“	“	37.252	. .	37.190
	61	Anon. 7^h 33^m 9^s . .	8.0	1	IX.	“	“	“	“	“	“	“	“	“	30.423	. .	30.342
	62	B. A. C. 2526 . .	. .	3	IV–VI.	313	20	3.9	5.1	57.3	18.0	3.3	4.0	5.27	27.519	. .	27.456
	63	Anon. 7^h 33^m 53^s .	8.0	3	V, VII, VIII.	“	“	“	“	“	“	“	“	“	23.705	. .	23.642
	64	O. Arg. S. 7473 . .	. .	3	III–VII.	348	50	2.0	5.8	59.0	20.4	0.0	1.0	4.70	34.769	. .	34.717
	65	Anon. 7^h 50^m 55^s .	9.0	3	IV–VI.	306	50	2.5	3.3	56.0	16.2	0.9	3.4	3.72	23.463	. .	23.403

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. . .	. . .	+ 1 21.6	N. 29 53 30.4	34.9	+ 68 47 44.5	− 5.7	D.	
2	. .	. . .	. . .	+ 0 24.9	S. 13 5 31.1	14.1	+ 25 47 54.0	+ 6.8	D.	Could not have been below 9th magnitude.
3	. .	. . .	. . .	− 2 24.3	N. 33 32 24.8	40.2	+ 72 26 44.3	− 7.7	D.	
4	. .	. . .	. . .	+ 0 22.8	N. 33 29 27.6	40.2	+ 72 23 47.1	− 7.8	D.	
5	. .	. . .	. . .	+ 1 3.2	S. 4 31 10.7	4.8	+ 34 22 23.8	+ 2.8	D.	
6	. .	. . .	. . .	+ 1 24.6	7 26 32.2	7.9	+ 31 26 59.1	+ 3.1	D.	
7	29.972	34.7	29.0	+ 2 6.1	7 27 13.7	8.0	+ 31 26 17.6	+ 3.1	D.	
8	. .	. . .	. . .	. .	. . . .	. .	. . . .	. .	D.	
9	. .	. . .	. . .	− 1 51.1	15 3 16.7	16.4	+ 23 50 6.2	+ 2.9	D.	
10	29.976	34.5	28.0	− 2 46.3	63 7 21.3	1 59.7	− 24 15 41.8	+ 15.2	D.	
11	. .	. . .	. . .	+ 0 3.0	69 20 11.7	2 40.4	− 30 29 12.8	+ 15.4	D.	
12	. .	. . .	. . .	− 1 47.2	69 18 21.5	2 40.1	− 30 27 22.4	+ 15.2	D.	
13	. .	. . .	. . .	− 2 33.3	69 17 35.4	2 40.0	− 30 26 36.2	+ 15.2	D.	
14	. .	. . .	28.1	+ 3 0.4	63 53 8.8	2 4.8	− 25 1 34.3	+ 13.4	D.	
15	. .	. . .	. . .	+ 1 30.7	65 11 37.0	2 11.2	− 26 20 8.9	+ 12.5	D.	
16	. .	. . .	. . .	− 4 38.0	28 25 28.5	33.0	+ 10 27 37.8	+ 3.4	D.	
17	. .	. . .	. . .	+ 2 15.0	28 32 21.5	33.1	+ 10 20 44.6	+ 3.4	D.	
18	29.972	33.2	28.0	+ 1 13.5	50 46 20.6	1 14.5	− 11 53 55.9	+ 6.6	D.	
19	. .	. . .	. . .	− 1 12.2	18 38 54.2	20.6	+ 20 14 24.5	− 1.6	D.	
20	. .	. . .	. . .	+ 3 26.3	18 43 32.7	20.6	+ 20 9 46.0	− 2.1	D.	
21	. .	. . .	. . .	− 0 55.4	63 49 12.8	2 3.4	− 24 57 36.9	+ 5.3	D.	
22	. .	. . .	. . .	+ 0 31.4	13 55 40.2	15.1	+ 24 57 44.0	− 4.8	D.	
23	. .	. . .	. . .	− 0 0.6	13 55 8.1	15.1	+ 24 58 16.0	− 4.9	D.	
24	. .	. . .	. . .	− 0 9.9	28 44 58.8	33.4	+ 10 8 7.0	− 2.2	D.	
25	. .	. . .	. . .	+ 1 34.3	28 46 43.0	33.5	+ 10 6 22.8	− 2.3	D.	
26	. .	. . .	. . .	+ 0 7.0	24 45 15.3	28.1	+ 14 7 55.8	− 3.6	D.	
27	. .	. . .	. . .	− 0 24.0	25 9 43.5	28.6	+ 13 43 27.2	− 4.1	D.	
28	29.960	32.5	28.0	− 2 17.4	25 7 50.1	28.6	+ 13 45 20.6	− 4.2	D.	
29	29.895	26.0	23.0	+ 1 27.2	65 11 35.1	2 12.3	− 26 20 8.2	+ 12.8	D.	
30	. .	. . .	. . .	− 2 11.7	66 57 56.2	2 23.7	− 28 6 40.6	+ 12.1	D.	
31	. .	. . .	. . .	+ 0 32.2	S. 25 35 39.0	29.4	+ 13 17 30.8	+ 1.8	D.	
32	. .	. . .	. . .	− 0 54.7	N. 41 40 45.9	54.7	+ 80 35 19.8	− 16.1	D.	
33	. .	. . .	. . .	+ 2 1.7	S. 17 32 7.5	19.4	+ 21 21 12.4	− 1.5	D.	Corr. +2″.26 applied to mean of A, B, E, F.
34	. .	. . .	. . .	+ 3 21.2	26 53 27.1	31.2	+ 11 59 41.0	+ 0.2	D.	
35	. .	. . .	. . .	+ 0 19.0	26 50 24.9	31.1	+ 12 2 43.2	+ 0.1	D.	
36	29.886	26.0	22.9	+ 1 10.0	75 31 17.0	3 54.3	− 36 41 32.1	+ 9.0	D.	
37	. .	. . .	. . .	− 0 12.7	63 49 53.7	2 4.5	− 24 58 18.9	+ 5.7	D.	
38	. .	. . .	. . .	− 3 30.2	63 46 36.2	2 4.2	− 24 55 1.1	+ 5.8	D.	
39	. .	. . .	. . .	+ 2 48.0	67 7 54.6	2 24.8	− 28 16 40.1	+ 4.9	D.	
40	. .	. . .	. . .	+ 0 17.1	67 5 23.6	2 24.5	− 28 14 8.8	+ 4.8	D.	
41	. .	. . .	22.8	+ 1 41.6	67 6 48.2	2 24.9	− 28 15 33.8	+ 4.7	D.	
42	. .	. . .	. . .	+ 0 8.1	24 45 15.3	28.3	+ 14 7 55.6	− 3.9	D.	
43	29.864	25.8	23.0	+ 2 25.5	24 12 32.1	27.6	+ 14 40 39.6	+ 4.8	D.	
44	. .	. . .	. . .	. . .	. . . .	. .	. . . .	. .	D.	
45	29.850	40.0	35.5	− 2 13.7	67 32 59.3	2 23.7	− 28 41 43.7	+ 23.6	D.	
46	. .	. . .	. . .	− 1 5.5	67 59 1.9	2 26.8	− 29 7 49.4	+ 22.6	D.	
47	. .	. . .	. . .	− 1 51.6	S. 63 3 13.1	1 57.1	− 24 11 31.0	+ 20.8	D.	
48	. .	. . .	. . .	+ 0 52.7	N. 2 4 2.2	2.2	+ 40 57 43.6	− 0.8	D.	
49	. .	. . .	. . .	− 1 47.3	S. 6 8 16.0	6.4	+ 32 45 16.8	− 0.1	D.	
50	. .	. . .	. . .	+ 1 53.1	0 11 57.0	0.2	+ 38 41 42.0	− 2.6	D.	While taking this observation struck the eye-piece slightly.
51	. .	. . .	. . .	+ 3 15.9	0 13 19.9	0.2	+ 38 40 19.2	− 2.5	D.	
52	. .	. . .	. . .	− 0 37.5	67 24 27.0	2 23.0	− 28 33 10.8	+ 17.2	D.	
53	. .	. . .	. . .	+ 1 18.6	67 26 23.1	2 23.3	− 28 35 7.2	+ 17.2	D.	
54	29.855	39.5	34.4	+ 1 29.3	67 26 33.8	2 23.3	− 28 35 17.8	+ 17.2	D.	
55	. .	. . .	. . .	− 2 57.7	53 27 7.3	1 20.7	− 14 34 48.7	+ 12.1	D.	
56	. .	. . .	33.9	+ 0 15.7	53 30 20.7	1 20.8	− 14 38 2.3	+ 11.4	D.	
57	. .	. . .	. . .	+ 0 12.6	53 30 17.6	1 20.9	− 14 37 59.3	+ 10.5	D.	
58	. .	. . .	. . .	− 4 15.9	23 15 50.0	24.0	+ 15 37 25.2	+ 1.6	D.	
59	. .	. . .	. . .	+ 1 54.0	23 22 0.0	25.9	+ 15 31 13.4	+ 1.6	D.	
60	. .	. . .	. . .	− 3 45.6	23 16 20.4	25.8	+ 15 36 53.1	+ 1.6	D.	
61	. .	. . .	. . .	− 0 10.7	23 19 55.2	25.8	+ 15 33 18.2	+ 0.7	D.	
62	. .	. . .	. . .	+ 1 19.6	33 21 24.9	39.4	+ 5 31 34.9	+ 3.7	D.	
63	. .	. . .	. . .	+ 3 18.8	33 23 24.1	39.5	+ 5 29 35.7	+ 3.6	D.	
64	. .	. . .	. . .	− 2 27.9	68 47 36.8	2 33.5	− 29 56 31.1	+ 11.0	D.	
65	. .	. . .	. . .	+ 3 26.3	26 53 30.0	30.4	+ 11 59 38.8	+ 0.3	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						°	′	″	″	″	″	″	″	″	r.	r.	r.
1869. Mar. 12	1	Weisse VII, 1504	8.0	3	V, VI, VII.	306	50	2.5	3.3	56.0	16.2	0.9	3.4	3.72	29.304	− 0.058	29.242
	2	Anon. $8^h\ 1^m\ 23^s$	. .	3	IV–VI.	276	50	3.0	5.7	58.2	23.0	3.5	7.9	6.88	25.339	. .	25.278
	3	Anon. $8^h\ 10^m\ 28^s$	7.0	3	III, VI, VIII.	349	0	3.0	7.0	0.9	22.0	1.0	1.0	5.82	26.113	. .	26.054
	4	Anon. $8^h\ 10^m\ 32^s$	8.0	2	V, VII.	"	"	"	"	"	"	"	"	"	23.648	. .	23.592
	5	Rumker 2505	. .	3	IV–VI.	261	50	3.1	5.0	58.0	22.5	2.0	6.0	6.10	26.268	. .	26.205
	6	Rumker 2508	. .	2	VI, VII.	"	"	"	"	"	"	"	"	"	33.634	. .	33.557
	7	Weisse VIII, 738	8.0	3	III–VII.	306	45	2.8	4.7	56.8	18.0	1.3	4.1	4.62	32.053	. .	31.993
	8	O. Arg. S. 8856	. .	3	III–VII.	345	45	3.1	5.0	58.8	18.0	0.0	0.8	4.28	27.162	. .	27.109
	9	Weisse VIII, 1050	8.0	3	III–VII.	312	55	3.2	5.0	57.9	18.8	3.0	3.3	5.20	24.817	. .	24.758
	10	Weisse VIII, 1077	8.0	3	IV–VI.	"	"	"	"	"	"	"	"	"	26.227	. .	26.169
	11	Anon. $8^h\ 50^m\ 40^s$	8.0	3	IV–VI.	332	5	2.8	6.0	58.2	19.0	2.0	2.8	5.13	31.390	. .	31.333
	12	Weisse VIII, 1476	. .	3	III–VII.	331	35	2.0	3.9	57.0	17.3	59.2	0.7	3.35	26.633	. .	26.577
	13	B. A. C. 3143	. .	3	IV–VI.	357	35	3.0	7.0	0.3	22.3	1.0	oblit.	6.05	34.175	. .	34.119
	14	Nadir	. .	.	. .	100	0	3.0	9.0	57.9	23.4	4.2	7.0	7.42	30.074	. .	. .
15	15	O. Arg. S. 6734	6.0	3	III–VII.	346	25	3.0	4.0	57.0	18.0	57.7	1.1	3.47	27.054	+ 0.025	27.084
	16	Lacaille 2857	6.7	3	III–VII.	345	35	3.0	4.0	57.0	17.7	59.0	1.1	3.63	29.039	. .	29.069
	17	Lalande 15073	. .	3	III–VII.	297	30	3.3	5.0	55.8	oblit.	1.8	4.0	5.43	35.471	. .	35.492
	18	Weisse (2) VII, 1143	. .	3	III–VII.	"	"	"	"	"	"	"	"	"	26.078	. .	26.099
	19	Anon. $7^h\ 48^m\ 43^s$	. .	3	III–VII.	344	40	3.8	5.4	58.0	19.1	1.0	2.1	4.90	29.062	. .	29.092
	20	Weisse (2) VII, 1520	. .	3	III–VII.	290	45	4.8	6.8	58.0	20.4	2.1	5.6	6.28	32.112	. .	32.132
	21	31 Lyncis	. .	3	IV–VI.	275	15	5.0	7.7	59.7	25.0	4.0	8.1	8.25	25.619	. .	25.641
	22	v^3 Cancri	. .	3	III–VII.	294	20	4.0	6.0	59.5	21.3	4.0	5.7	6.75	25.879	. .	25.900
	23	γ Cancri	. .	3	III–VII.	296	55	5.0	7.1	58.3	oblit.	4.0	5.2	7.36	26.002	. .	26.023
	24	c Mali	. .	3	III–VII.	346	5	5.0	7.9	0.9	21.8	2.9	3.5	7.00	29.855	. .	29.885
	25	68 Cancri	. .	3	III–VII.	301	15	6.2	9.8	0.8	23.7	5.1	6.9	8.75	24.915	. .	24.937
	26	20 Hydræ	. .	3	III–VII.	327	10	6.8	10.0	0.7	23.0	5.3	6.0	8.63	33.689	. .	33.715
	27	Nadir	. .	.	. .	100	0	5.9	12.1	59.7	27.7	6.0	9.0	10.07	30.176	. .	. .
18	28	Lalande 12678	. .	3	III–VII.	286	10	5.7	3.7	56.9	18.3	4.9	7.7	6.20	34.231	− 0.593	33.632
	29	O. Arg. S. 5654	. .	3	III–VII.	347	30	5.9	6.7	58.8	19.0	3.0	4.0	6.23	26.822	. .	26.234
	30	O. Arg. S. 5887	8.0	3	III–VII.	346	15	6.6	7.3	0.3	19.9	5.0	5.1	7.37	29.969	. .	29.381
	31	B. A. C. 2371	. .	3	IV–VI.	349	30	7.0	8.9	1.0	23.1	6.0	5.1	8.52	35.457	. .	34.866
	32	Anon. $7^h\ 13^m\ 7^s$	8.0	3	III–VII.	348	30	7.0	9.7	1.7	22.9	6.0	6.1	8.90	30:167	. .	29.579
	33	O. Arg. S. 6734	7.0	3	III–VII.	346	25	7.1	7.1	1.0	20.8	4.7	5.2	7.65	27.699	. .	27.111
	34	Lacaille 2859	7.0	3	III–VII.	352	0	8.0	10.6	2.0	23.3	7.0	6.0	9.48	27.390	. .	26.803
	35	O. Arg. S. 7239	. .	3	IV–VI.	346	30	8.0	8.8	2.1	22.0	7.0	7.2	9.18	30.413	. .	29.822
	36	O. Arg. S. 7289	9.0	3	III–VII.	"	"	"	"	"	"	"	"	"	32.420	. .	31.832
	37	O. Arg. S. 7464	. .	4	I, II, VIII, IX.	345	35	9.0	10.0	1.1	21.1	7.1	7.0	9.22	30.856	. .	30.283
	38	O. Arg. S. 7465	. .	3	IV–VI.	"	"	"	"	"	"	"	"	"	36.707	. .	36.216
	39	O. Arg. S. 7636	7.0	3	III–VII.	346	35	7.3	8.0	1.0	21.9	6.1	6.7	8.50	26.113	. .	25.525
	40	8 Cancri	. .	3	III–VII.	305	25	7.2	7.1	57.7	19.0	7 0	7.0	7.50	32.785	. .	32.190
	41	O. Arg. S. 8165	7.0	3	III, IV, V.	348	40	8.0	11.5	3.0	24.1	8.2	7.9	10.45	26.374	− 0.593	25.788
	42	O. Arg. S. 8169	7.0	3	V, VI, VII.	"	"	"	"	"	"	"	"	"	36.465	. .	35.879
	43	Lacaille 3248	. .	3	III–VII.	351	20	8.0	10.0	2.0	24.0	8.0	6.2	9.70	32.842	. .	32.255
	44	Lacaille 3302	7.0	3	III–VII.	"	"	"	"	"	"	"	"	"	31.823	. .	31.236
	45	Anon. $8^h\ 21^m\ 33^s$	. .	3	IV–VI.	350	25	8.0	10.8	2.0	24.2	7.2	7.1	9.88	26.983	. .	26.392
	46	Lacaille 3331	. .	3	IV–VI.	"	"	"	"	"	"	"	"	"	31.100	. .	30.509
	47	Lacaille 3399	. .	3	III–VII.	351	0	7.0	8.7	0.0	23.1	6.0	4.2	8.17	31.360	. .	30.773
	48	Weisse VIII, 936	8.0	2	III, V.	304	45	7.0	8.0	58.3	22.0	8.9	8.3	8.75	25.679	. .	25.085
	49	Anon. $8^h\ 37^m\ 3^s$	9.0	2	V, VII.	"	"	"	"	"	"	"	"	"	30.442	. .	29.845
	50	O. Arg. S. 9040	8.0	3	III–VII.	342	55	7.0	9.0	0.1	21.5	6.8	5.3	8.28	25.883	. .	25.294
	51	Weisse (2) VIII, 1291	. .	3	III–VII.	296	55	8.0	9.1	59.6	oblit.	9.0	9.1	9.64	31.024	. .	30.427
	52	Weisse VIII, 1476	. .	3	III–VII.	331	35	8.0	9.1	0.8	21.9	7.9	7.3	9.17	27.500	. .	26.909
	53	Lacaille 3700	. .	3	III–VII.	348	10	8.0	11.8	3.0	23.9	7.1	8.0	10.30	33.527	. .	32.939
	54	Anon. $9^h\ 12^m\ 5^s$	. .	3	III–VII.	347	25	8.0	10.0	2.0	23.4	6.8	7.7	9.55	27.549	. .	26.961
	55	Anon. $9^h\ 17^m\ 38^s$	7.5	3	III, IV, V.	"	"	"	"	"	"	"	"	"	31.989	. .	31.403
	56	Anon. $9^h\ 17^m\ 48^s$	7.5	3	V, VI, VII.	"	"	"	"	"	"	"	"	"	35.706	. .	35.114
	57	Lacaille 3905	. .	3	IV–VI.	356	50	8.0	11.7	3.0	25.0	8.0	6.0	10.28	24.736	. .	24.145
	58	Nadir	. .	.	. .	100	0	8.0	12.2	0.1	25.9	9.9	12.0	11.35	30.835	. .	. .
27	59	53 Geminorum	. .	3	IV–VI.	290	45	2.7	58.9	58.7	54.8	1.0	7.2	1.10	28.973	− 1.211	27.760
	60	Anon. $7^h\ 19^m\ 7^s$	7.0	3	III–VII.	333	30	6.8	3.0	2.7	58.2	4.2	7.9	3.80	30.707	. .	29.498
	61	Lacaille 2867	6.5	3	III–VII.	346	55	7.0	1.8	4.2	0.2	2.8	8.4	4.07	28.154	. .	26.948
	62	O. Arg. S. 7376	8.0	3	IV–VI.	346	10	7.0	1.2	3.0	58.1	3.0	6.9	3.20	28.755	. .	27.546
	63	Anon. $7^h\ 40^m\ 53^s$	9.0	3	IV–VI.	"	"	"	"	"	"	"	"	"	35.037	. .	33.828
	64	O. Arg. S. 7445	8.0	3	IV–VI.	"	"	"	"	"	"	"	"	"	31.768	. .	30.559
	65	8 Cancri	. .	3	IV–VI.	305	25	6.8	0.6	0.8	58.0	5.0	9.4	3.43	33.251	. .	32.039

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.860	39.0	33.6	+ 0 23.7	S. 26 50 27.4	30.3	+ 12 2 41.6	+ 0.2	D.	
2	. .	. .	. .	+ 2 27.7	N. 3 7 25.4	3.3	+ 42 1 7.9	− 9.3	D.	
3	. .	. .	. .	+ 2 3.5	S. 69 2 9.3	2 35.5	− 30 11 5.5	+ 7.9	D.	
4	. .	. .	. .	+ 3 20.4	S. 69 3 26.2	2 35.7	− 30 12 22.6	+ 7.9	D.	
5	. .	. .	. .	+ 1 58.8	N. 18 7 55.2	19.7	+ 57 1 54.1	− 14.2	D.	
6	. .	. .	. .	− 1 51.5	N. 18 11 45.4	19.7	+ 57 5 44.4	− 14.2	D.	
7	. .	. .	. .	− 1 2.4	S. 26 44 2.2	30.2	+ 12 9 6.8	− 2.8	D.	
8	. .	. .	33.6	+ 1 30.5	65 46 34.8	2 12.7	− 26 55 8.2	+ 4.6	D.	
9	. .	. .	. .	+ 2 44.0	32 57 49.2	38.9	+ 5 55 11.2	− 2.3	D.	
10	. .	. .	. .	+ 1 59.9	32 57 5.1	37.2	+ 5 55 57.0	− 2.4	D.	
11	. .	. .	. .	− 0 41.8	52 4 23.4	1 18.1	− 13 12 2.2	+ 0.8	D.	
12	29.856	38.5	33.0	+ 1 47.1	51 36 50.5	1 15.7	− 12 44 26.9	− 0.1	D.	
13	. .	. .	. .	− 2 9.1	77 32 57.0	4 26.2	− 38 43 43.9	+ 2.0	D.	Corr. −2″.10 applied to mean of A, B, C, D.
14	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
15	30.182	40.5	31.9	+ 1 31.2	66 26 34.7	2 18.8	− 27 35 14.2	+ 13.7	D.	
16	. .	. .	. .	+ 0 29.2	65 35 32.8	2 13.4	− 26 44 7.0	+ 12.3	D.	
17	. .	. .	. .	− 2 52.2	17 27 13.2	19.1	+ 21 26 6.9	− 1.7	D.	Corr. +1″.91 applied to mean of A, B, E, F.
18	. .	. .	. .	+ 2 2.1	17 32 7.5	19.2	+ 21 21 12.5	− 1.8	D.	
19	. .	. .	31.5	+ 0 28.4	64 40 33.3	2 8.1	− 25 49 2.2	+ 10.0	D.	
20	. .	. .	. .	− 1 6.8	S. 10 43 59.5	11.5	+ 28 9 28.2	− 5.1	D.	
21	. .	. .	. .	+ 2 16.4	N. 4 42 35.4	5.0	+ 43 36 19.6	− 10.8	D.	Hazy.
22	. .	. .	. .	+ 2 8.3	S. 14 22 15.0	15.6	+ 24 31 8.6	− 6.0	D.	
23	30.208	39.0	31.3	+ 2 4.4	16 57 11.8	18.6	+ 21 56 8.8	− 6.0	D.	Corr. +2″.04 applied to mean of A, B, E, F.
24	. .	. .	. .	+ 0 3.6	66 5 10.6	2 16.8	− 27 13 48.2	+ 3.9	D.	
25	. .	. .	. .	+ 2 38.4	21 17 47.1	23.8	+ 17 35 28.3	− 6.1	D.	
26	30.218	38.5	30.9	− 1 56.5	47 8 12.2	1 5.7	+ 8 15 38.6	− 1.1	D.	
27	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
28	. .	. .	. .	− 1 53.9	6 8 12.3	6.5	+ 32 45 20.4	− 0.3	D.	Before this observation adjusted inclination.
29	30.291	40.0	35.9	+ 1 57.8	67 32 4.1	2 25.6	− 28 40 50.4	+ 18.1	D.	
30	. .	. .	. .	+ 0 19.4	66 15 26.7	2 17.1	− 27 24 4.6	+ 16.9	D.	
31	30.288	39.5	35.0	− 2 32.5	69 27 36.0	2 40.7	− 20 36 37.5	+ 13.6	D.	
32	. .	. .	. .	+ 0 13.2	68 30 22.1	2 33.1	− 29 39 15.9	+ 14.9	D.	
33	. .	. .	. .	+ 1 30.4	66 26 38.1	2 18.5	− 27 35 17.2	+ 13.9	D.	
34	. .	. .	. .	+ 1 40.0	72 1 49.5	3 5.4	− 33 11 15.6	+ 13.8	D.	
35	. .	. .	. .	+ 0 5.6	66 30 14.7	2 18.9	− 27 38 54.4	+ 12.1	D.	
36	. .	. .	. .	− 0 57.4	66 29 11.8	2 18.8	− 27 37 51.4	+ 12.0	D.	
37	. .	. .	. .	− 0 8.9	65 35 0.3	2 13.2	− 26 43 34.3	+ 11.1	D.	
38	. .	. .	. .	− 3 15.0	65 31 54.2	2 12.8	− 26 40 27.8	+ 11.1	D.	
39	. .	. .	. .	+ 2 20.0	66 37 28.5	2 19.8	− 27 46 9.1	+ 10.7	D.	
40	30.285	39.0	34.0	− 1 8.6	25 23 58.9	28.9	+ 13 29 11.5	− 0.8	D.	
41	. .	. .	. .	+ 2 11.8	68 42 22.2	2 34.9	− 29 51 17.9	+ 9.3	D.	
42	. .	. .	. .	− 3 4.4	68 37 6.1	2 34.3	− 29 46 1.1	+ 9.2	D.	
43	. .	. .	. .	− 1 10.7	71 18 59.0	2 58.2	− 32 28 18.0	+ 8.9	D.	
44	. .	. .	. .	− 0 38.7	71 19 31.0	2 58.3	− 32 28 50.1	+ 8.1	D.	
45	. .	. .	. .	+ 1 52.9	70 27 2.8	2 49.9	− 31 36 13.4	+ 7.7	D.	
46	. .	. .	. .	− 0 15.9	70 24 53.9	2 49.6	− 31 34 4.3	+ 7.6	D.	
47	. .	. .	. .	− 0 24.2	70 59 44.0	2 55.1	− 32 8 59.8	+ 6.9	D.	
48	. .	. .	. .	+ 2 33.8	24 47 42.5	28.1	+ 14 5 28.6	− 4.0	D.	
49	. .	. .	. .	+ 0 4.8	24 45 13.6	28.1	+ 14 7 57.6	− 4.0	D.	
50	. .	. .	. .	+ 2 27.2	62 57 35.5	1 58.8	− 24 5 55.1	+ 4.0	D.	
51	. .	. .	. .	− 0 13.4	16 54 56.3	18.5	− 21 58 24.5	− 7.2	D.	Corr. +0″.84 applied to mean of A, B, F, F.
52	. .	. .	. .	+ 1 36.7	51 36 45.9	1 16.8	− 12 44 23.4	+ 0.5	D.	
53	30.298	37.8	33.0	− 1 32.1	68 8 38.2	2 30.9	− 29 17 29.9	+ 2.6	D.	
54	. .	. .	. .	+ 1 35.1	67 26 44.6	2 25.9	− 28 35 31.3	+ 1.6	D.	
55	. .	. .	. .	− 0 44.0	67 24 25.6	2 25.8	− 28 33 12.1	+ 0.9	D.	
56	. .	. .	. .	− 2 40.3	67 22 29.2	2 25.5	− 28 31 15.5	+ 0.9	D.	
57	30.288	37.5	31.1	+ 3 3.1	76 53 13.4	4 17.4	− 38 3 51.6	+ 0.6	D.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	March 19, readjusted microscopes C and D; March 22, found that the eye-piece had received a very hard blow; March 27, level correct; adjusted collimation.
59	. .	. .	. .	+ 1 10.1	10 46 11.2	10.5	+ 28 7 17.5	− 2.0	D.	
60	30.036	61.0	60.6	+ 0 15.7	53 30 19.5	1 15.3	− 14 37 55.6	+ 11.0	D.	
61	. .	. .	. .	+ 1 35.5	66 56 39.6	2 11.4	− 28 5 11.7	+ 13.2	D.	
62	. .	. .	. .	+ 1 16.8	66 11 20.0	2 6.8	− 27 19 47.6	+ 12.1	D.	
63	. .	. .	. .	− 2 0.0	66 8 3.2	2 7.6	− 27 16 31.5	+ 12.0	D.	
64	. .	. .	. .	− 0 17.5	66 9 45.7	2 7.7	− 27 18 14.2	+ 11.8	D.	
65	30.045	60.8	58.0	− 1 3.9	S. 25 23 59.6	27.3	+ 13 29 12.4	− 1.2	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Mar. 27	1	O. Arg. S. 8072	. .	3	III–VII.	342 50 6.8	3.0	4.8	59.2	4.4	7.6	4.30	26.519	— 1.211	25.312
	2	β Cancri	. .	3	III–VII.	309 20 7.0	1.8	2.6	56.9	5.1	10.2	3.93	35.087	. .	33.974
	3	Lalande 16367	8.0	3	III–VII.	291 20 7.0	1.5	2.2	58.9	6.0	11.0	4.43	25.760	. .	24.544
	4	Weisse (2) VIII, 4909	9.0	3	III, V, IX.	302 15 8.0	3.9	3.0	59.8	7.0	10.9	5.43	31.765	. .	30.550
	5	Anon. $8^h 29^m 56^s$	8.0	3	IV–VI.	349 45 7.6	3.1	5.1	2.2	4.0	8.3	5.05	38.031	. .	36.822
	6	Lacaille 3419	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	32.291	. .	31.082
	7	Lacaille 3485	7.0	3	IV–VI.	354 20 7.0	4.0	5.0	2.0	3.7	9.0	5.12	33.141	. .	31.932
	8	Anon. $8^h 54^m 1^s$	8.0	3	IV–VI.	353 40 6.7	3.1	5.2	1.0	4.0	8.0	4.67	33.615	. .	32.406
	9	Anon. $9^h 1^m 47^s$	8.5	3	III–VII.	342 25 6.0	1.0	3.2	59.0	3.0	6.7	3.15	36.703	. .	35.496
	10	Anon. $9^h 6^m 10^s$	9.0	3	III, V, IX.	" " "	"	"	"	"	"	"	29.475	. .	28.275
	11	Lacaille 3741	. .	3	IV–VI.	354 15 5.1	2.0	3.0	59.8	2.0	6.8	3.12	29.765	. .	28.556
	12	Schjellerup 3476	8.5	3	III–VII.	326 55 5.9	0.2	0.9	56.0	3.0	6.2	2.03	31.480	. .	30.270
	13	Anon. $9^h 25^m 19^s$	. .	3	IV–VI.	354 55 7.0	3.3	5.8	0.3	3.7	8.1	4.70	32.117	. .	30.908
	14	Anon. $9^h 36^m 16^s$	9.0	2	V, VIII.	342 30 7.2	2.2	4.8	0.9	4.0	8.2	4.55	27.364	. .	26.165
	15	Anon. $9^h 44^m 39^s$	8.0	3	IV–VI.	358 25 7.0	3.1	5.7	3.5	3.2	6.2	4.78	35.395	. .	34.186
	16	Nadir	. .	.	. .	100 0 6.7	4.1	3.7	3.2	5.9	13.0	6.10	31.285	. .	. .
31	17	Anon. $7^h 23^m 17^s$	. .	3	III–VII.	337 30 6.0	5.1	6.0	3.7	1.1	5.3	4.53	33.547	— 1.238	32.312
	18	Lacaille 2876	. .	3	III–VII.	342 20 6.1	5.1	7.0	6.1	2.0	4.2	5.08	29.289	. .	28.055
	19	B. A. C. 2581	. .	3	IV–VI.	352 45 6.0	6.2	7.0	7.1	1.3	5.2	5.47	29.715	. .	28.479
	20	O. Arg. S. 7636	. .	3	III–VII.	346 35 6.6	4.1	7.0	6.1	2.0	6.0	5.30	26.485	. .	25.252
	21	Nadir	. .	.	. .	100 0 6.0	7.0	5.1	9.1	4.2	10.2	6.93	31.339	. .	. .
	22	30 Lyncis	. .	3	IV–VI.	260 45 5.7	3.6	5.5	8.9	3.0	10.0	6.12	31.474	. .	30.231
	23	Anon. $8^h 17^m 11^s$	. .	3	III–VII.	348 5 4.8	4.3	6.7	6.0	0.2	4.9	4.48	25.608	. .	24.375
	24	Anon. $8^h 23^m 56^s$	. .	3	III–VII.	345 45 5.0	2.2	4.1	2.1	59.1	2.9	2.57	30.217	. .	28.984
	25	Anon. $8^h 29^m 15^s$	8.0	3	III–VII.	295 10 4.3	1.0	2.7	2.8	1.3	5.0	2.85	28.842	. .	27.600
	26	f Mali	. .	3	IV–VI.	347 55 4.0	3.9	6.0	5.2	0.0	4.9	4.00	26.892	. .	25.656
	27	c Mali	. .	3	III–VII.	346 5 4.1	2.3	5.0	2.9	0.1	3.4	2.97	30.769	. .	29.536
	28	68 Cancri	. .	3	III–VII.	301 15 4.8	3.1	3.0	3.8	1.7	6.0	3.73	26.019	. .	24.778
	29	B. A. C. 3104	. .	3	III–VII.	303 5 4.8	2.1	4.0	3.3	1.1	5.0	3.38	30.318	. .	29.077
	30	36 Lyncis	. .	3	IV–VI.	275 10 5.0	2.2	5.2	7.8	2.8	9.4	5.40	34.566	. .	33.325
	31	Lalande 18604	. .	3	III–VII.	304 35 5.1	1.7	4.0	3.7	2.8	5.8	3.85	32.817	. .	31.577
	32	26 Ursæ Majoris	. .	3	IV–VI.	266 15 6.0	3.1	7.0	10.1	3.0	11.0	6.70	29.710	. .	28.468
Apr. 3	33	Anon. $7^h 50^m 3^s$	7.0	3	III–VII.	349 25 5.8	7.0	7.8	8.9	0.9	4.0	5.73	29.825	— 1.217	28.614
	34	Weisse (2) VIII, 87	. .	3	III–VII.	291 20 5.5	4.6	4.0	6.1	0.9	5.8	4.48	27.140	. .	25.919
	35	B. A. C. 2789	. .	3	I–5.	233 25 5.7	5.0	7.0	12.7	2.1	9.4	6.98	33.418	. .	32.199
	36	B. A. C. 2827	. .	3	III–VII.	342 30 6.0	5.9	7.0	8.5	2.0	5.0	5.73	32.506	. .	31.293
	37	O. Arg. S. 8620	. .	3	III–VII.	348 45 6.0	7.8	6.9	9.1	1.1	4.0	5.82	31.861	. .	30.650
	38	B. A. C. 2898	7.0	3	III–VII.	345 15 6.0	5.8	6.0	7.2	1.2	3.8	5.00	30.599	. .	29.387
	39	Anon. $8^h 34^m 55^s$	. .	3	III–VII.	333 15 7.0	8.0	7.9	8.8	4.1	6.0	6.97	29.216	. .	28.001
	40	Lacaille 3500	. .	3	IV–VI.	349 20 7.0	7.9	9.0	10.6	3.0	5.0	7.08	28.479	. .	27.264
	41	Anon. $8^h 43^m 42^s$	. .	3	IV–VI.	356 20 5.2	8.0	7.4	10.2	1.8	4.7	6.22	29.214	. .	27.999
	42	Lalande 17662	. .	3	III–VII.	332 15 5.4	6.1	6.0	8.0	2.1	5.0	5.43	27.770	. .	26.555
	43	Anon. $8^h 56^m 48^s$	7.0	3	IV–VI.	354 0 6.0	8.0	7.1	10.0	3.0	4.9	6.50	29.530	. .	28.315
	44	Anon. $9^h 2^m 10^s$	. .	3	III–VII.	346 30 6.0	6.6	8.0	8.9	2.2	5.0	6.12	27.706	. .	26.494
	45	π^2 Cancri	. .	3	III–VII.	303 25 4.2	5.1	5.0	7.8	2.3	6.0	5.07	32.642	. .	31.422
	46	Anon. $9^h 12^m 26^s$	. .	3	IV–VI.	354 0 6.1	8.7	8.0	10.7	3.3	4.8	6.93	33.295	. .	32.080
	47	Anon. $9^h 20^m 56^s$	. .	3	IV–VI.	346 40 6.1	6.1	8.0	9.3	2.0	5.0	6.08	31.205	. .	29.990
	48	Anon. $9^h 21^m 44^s$	. .	3	IV–VI.	" " "	"	"	"	"	"	"	28.958	. .	27.744
	49	B. A. C. 3306	. .	3	IV–VI.	357 50 4.8	7.8	7.8	10.3	1.7	2.0	5.73	30.048	. .	28.833
	50	Lacaille 4006	. .	3	III–VII.	354 5 6.4	9.0	8.2	10.3	3.7	5.0	7.10	29.665	. .	28.455
	51	O. Arg. S. 10236	. .	3	III–VII.	348 20 7.1	8.5	9.1	11.0	2.3	4.9	7.15	28.555	. .	27.343
	52	O. Arg. S. 10387	8.0	3	III–VII.	342 15 7.0	8.0	8.2	10.0	3.2	4.8	6.87	27.482	. .	26.269
	53	Nadir	. .	.	. .	100 0 7.0	11.0	7.2	14.0	5.6	9.8	9.10	31.387	. .	. .
8	54	Weisse (2) VIII, 87	. .	3	III–VII.	291 20 7.0	3.8	2.9	2.1	4.8	9.9	5.08	27.160	— 1.293	25.862
	55	Anon. $8^h 10^m 29^s$	. .	2	III–VII.	349 0 7.0	5.2	5.0	6.2	3.2	7.0	5.60	27.137	. .	25.852
	56	Anon. $8^h 10^m 31^s$	. .	3	IV–VI.	" " "	"	"	"	"	"	"	24.596	. .	23.305
	57	Lacaille 3312	7.0	3	V, VI, VII.	350 20 6.0	4.0	4.3	5.3	2.8	7.0	4.90	27.119	. .	25.835
	58	Anon. $8^h 25^m 59^s$	8.5	2	III, V.	338 40 7.0	3.0	3.0	2.8	1.2	5.9	3.82	31.269	. .	29.974
	59	Anon. $8^h 26^m 50^s$	9.0	2	V, VIII.	" " "	"	"	"	"	"	"	26.212	. .	24.930
	60	Lacaille 3434	6.7	3	III–VII.	352 5 7.0	5.0	5.7	5.1	3.0	7.0	5.47	25.010	. .	23.723
	61	Lacaille 3474	7.2	3	III–VII.	347 55 6.2	4.1	5.0	4.8	1.0	7.4	4.75	31.529	. .	30.241
	62	O. Arg. S. 9040	. .	3	III–VII.	342 55 6.2	2.2	4.0	0.2	2.0	5.3	3.32	26.136	. .	24.847
	63	Anon. $8^h 48^m 55^s$	9.0	3	III–VII.	332 25 6.0	3.0	3.5	1.6	2.1	6.9	3.85	28.695	. .	27.404
	64	Anon. $8^h 56^m 46^s$	7.0	3	V, VI, VII.	354 0 5.4	2.3	2.7	2.0	1.0	5.2	3.10	29.133	. .	27.849
	65	Anon. $9^h 6^m 9^s$	9.0	3	III–VII.	342 25 4.8	1.1	3.0	1.1	1.0	5.0	2.50	29.495	. .	28.206
	66	Anon. $9^h 12^m 5^s$	8.0	3	III–VII.	347 25 5.3	2.0	3.0	2.0	59.1	5.8	2.87	27.675	. .	26.387

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 26.7	S. 62 52 31.0	1 52.0	− 24 0 43.7	+ 9.0	D.	
2	. .	. .	. .	− 2 4.6	29 17 59.4	32.3	+ 9 35 7.6	− 0.7	D.	
3	. .	. .	. .	+ 2 50.7	11 22 55.1	11.6	+ 27 30 32.6	− 7.0	D.	
4	30.054	60.0	56.1	− 0 17.2	22 14 48.2	23.6	+ 16 38 27.5	− 4.0	D.	
5	. .	. .	. .	− 3 34.0	69 41 31.0	2 34.6	− 30 50 26.4	+ 7.7	D.	
6	. .	. .	. .	− 0 33.9	69 44 31.0	2 35.0	− 30 53 26.9	+ 7.6	D.	
7	. .	. .	55.2	− 1 0.5	74 19 4.6	3 22.7	− 35 28 48.0	+ 7.6	D.	
8	30.062	59.5	54.7	− 1 15.4	73 38 49.3	3 14.4	− 34 48 24.5	+ 5.7	D.	
9	. .	. .	. .	− 2 52.3	62 22 10.8	1 50.1	− 23 30 21.7	+ 3.0	D.	
10	. .	. .	. .	+ 0 54.0	62 25 57.2	1 50.7	− 23 34 8.6	+ 2.7	D.	
11	. .	. .	54.2	+ 0 45.2	74 15 48.3	3 22.6	− 35 25 31.7	+ 4.1	D.	
12	. .	. .	. .	− 0 8.5	46 54 53.6	1 2.0	− 8 2 16.3	− 1.8	D.	
13	. .	. .	. .	− 0 28.4	74 54 36.3	3 31.8	− 36 4 28.8	+ 2.4	D.	
14	30.052	58.0	52.2	+ 2 0.0	62 32 4.6	1 51.3	− 23 40 16.6	− 0.3	D.	Star of 9th magnitude preceding about 15^s.
15	. .	. .	. .	− 2 11.2	78 22 53.5	4 35.5	− 39 33 49.8	+ 0.7	D.	
16	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
17	29.868	51.0	46.1	− 1 12.4	57 28 52.1	1 31.5	− 18 36 44.3	+ 11.8	D.	
18	. .	. .	. .	+ 1 0.9	62 21 6.0	1 51.3	− 23 29 18.0	+ 12.2	D.	
19	. .	. .	44.8	+ 0 47.6	72 45 53.1	3 6.8	− 33 55 20.6	+ 13.6	D.	
20	. .	. .	. .	+ 2 28.5	S. 66 37 33.8	2 14.9	− 27 46 9.5	+ 11.5	D.	
21	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
22	29.897	49.5	44.4	− 0 7.2	N. 19 15 1.1	20.5	+ 58 9 0.9	− 16.7	D.	
23	. .	. .	. .	+ 2 55.9	S. 68 8 0.4	2 25.4	− 29 16 46.6	+ 9.0	D.	
24	. .	. .	. .	+ 0 31.8	65 45 34.4	2 9.8	− 26 54 5.0	+ 7.8	D.	
25	. .	. .	. .	+ 1 15.1	15 11 18.0	16.3	+ 23 42 4.9	− 7.2	D.	
26	. .	. .	. .	+ 2 15.9	67 57 19.9	2 24.4	− 29 6 5.0	+ 7.2	D.	
27	29.910	48.7	43.4	+ 0 14.5	66 5 17.5	2 12.0	− 27 13 50.3	+ 5.7	D.	
28	. .	. .	. .	+ 2 43.3	21 17 47.1	23.0	+ 17 35 29.2	− 7.0	D.	
29	. .	. .	. .	+ 0 28.9	S. 23 5 32.3	25.1	+ 15 47 41.8	− 6.7	D.	
30	. .	. .	. .	− 1 44.2	N. 4 51 38.8	5.0	+ 43 45 23.1	− 15.6	D.	
31	. .	. .	. .	− 0 49.4	S. 24 34 14.4	27.0	+ 14 18 57.8	− 7.8	D.	
32	. .	. .	. .	+ 0 48.0	N. 13 44 5.3	14.4	+ 52 37 59.0	− 19.0	D.	
33	29.929	45.0	36.8	+ 0 43.4	S. 69 25 49.1	2 37.9	− 30 34 47.8	+ 12.2	D.	
34	. .	. .	. .	+ 2 7.7	S. 11 22 12.2	12.0	+ 27 31 15.0	− 6.8	D.	
35	. .	. .	. .	− 1 8.9	N. 46 36 1.9	1 1.1	+ 85 30 42.3	− 23.6	D.	
36	. .	. .	36.1	− 0 40.5	62 29 25.2	1 54.4	− 23 37 40.4	+ 7.8	D.	
37	. .	. .	. .	− 0 20.4	68 44 45.4	2 32.7	− 29 53 38.9	+ 8.8	D.	
38	. .	. .	. .	+ 0 19.2	65 15 24.2	2 9.2	− 26 23 54.1	+ 7.3	D.	
39	. .	. .	. .	+ 1 2.6	53 16 9.5	1 20.3	− 14 23 50.6	+ 4.0	D.	
40	. .	. .	. .	+ 1 25.6	69 21 32.7	2 35.0	− 30 30 28.4	+ 7.2	D.	
41	. .	. .	. .	+ 1 2.6	76 21 8.8	4 2.0	− 37 31 31.6	+ 8.0	D.	
42	29.950	43.3	35.9	+ 1 47.8	52 16 53.2	1 17.3	− 13 24 31.3	+ 2.4	D.	Hazy.
43	. .	. .	. .	+ 0 52.8	74 0 59.2	3 26.4	− 35 10 46.4	+ 6.2	D.	
44	. .	. .	. .	+ 1 49.7	66 31 55.8	2 17.2	− 27 40 33.8	+ 4.4	D.	
45	. .	. .	. .	− 0 44.6	23 24 20.5	25.9	+ 15 28 52.8	− 8.0	D.	
46	. .	. .	. .	− 1 5.2	73 59 1.8	3 26.1	− 35 8 48.6	+ 4.6	D.	
47	. .	. .	. .	+ 0 0.3	66 40 6.4	2 18.2	− 27 48 45.3	+ 2.6	D.	
48	29.960	42.8	35.5	+ 1 10.6	66 41 16.7	2 18.3	− 27 49 55.8	+ 2.5	D.	
49	. .	. .	. .	+ 0 36.5	77 50 42.3	4 31.7	− 39 1 34.7	+ 3.0	D.	
50	. .	. .	. .	+ 0 48.4	74 5 55.5	3 27.5	− 35 15 43.8	+ 1.8	D.	
51	29.964	42.2	35.5	+ 1 23.2	68 21 30.3	2 30.4	− 29 30 21.4	− 0.0	D.	
52	. .	. .	. .	+ 1 56.8	62 17 3.6	1 53.7	− 23 25 18.0	− 2.0	D.	
53	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
54	. .	. .	. .	+ 2 9.5	11 22 14.6	11.5	+ 27 31 13.2	− 7.2	D.	
55	. .	. .	. .	+ 2 9.8	69 2 15.4	2 28.4	− 30 11 4.5	+ 10.2	D.	
56	29.877	57.7	56.3	+ 3 29.3	69 3 34.9	2 28.6	− 30 12 24.3	+ 10.2	D.	
57	. .	. .	. .	+ 2 10.3	70 22 15.2	2 39.6	− 31 31 15.6	+ 9.5	D.	
58	. .	. .	. .	+ 0 0.8	58 40 4.6	1 34.2	− 19 47 59.6	+ 6.3	D.	
59	. .	. .	. .	+ 2 38.6	58 42 42.4	1 34.4	− 19 50 37.5	+ 6.2	D.	
60	. .	. .	54.0	+ 3 16.3	72 8 21.8	2 56.8	− 33 17 39.3	+ 8.7	D.	
61	. .	. .	. .	− 0 7.6	67 54 57.2	2 21.1	− 29 3 39.1	+ 7.3	D.	
62	. .	. .	. .	+ 2 41.2	62 57 44.5	1 52.7	− 24 5 57.9	+ 5.6	D.	
63	. .	. .	. .	+ 1 21.2	52 26 25.1	1 15.2	− 13 34 1.0	+ 2.6	D.	
64	29.884	56.5	51.0	+ 1 7.3	74 1 10.4	3 19.4	− 35 10 50.6	+ 6.6	D.	
65	. .	. .	. .	+ 0 56.2	62 25 58.7	1 50.5	− 23 34 9.9	+ 3.4	D.	
66	. .	. .	50.0	+ 1 53.1	N. 67 26 55.9	2 18.6	− 28 35 35.2	+ 3.9	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. April 8	1	Anon. 9h 15m 47s	7.0	3	IV–VI.	353 40 6.0	3.0	4.0	3.4	1.0	5.3	3.78	33.567	− 1.293	32.276
	2	B. A. C. 3235	. .	3	III–VII.	353 15 5.9	4.0	4.0	4.3	1.7	7.0	4.48	27.392	. .	26.106
	3	O. Arg. S. 9888	8.0	3	III–VII.	339 15 6.0	2.0	3.1	3.0	1.1	5.5	3.45	26.596	. .	25.307
	4	Anon. 9h 36m 12s	7.5	3	IV–VI.	356 45 6.0	3.1	4.8	5.2	1.0	6.1	4.37	32.902	. .	31.611
	5	Lacaille 4036.	6.0	3	IV–VI.	355 25 5.8	3.9	3.4	2.4	0.0	5.0	3.42	31.444	. .	30.153
	6	Anon. 9h 48m 28s	. .	3	III–VII.	346 45 5.1	1.5	3.3	1.2	59.1	6.0	2.70	32.204	. .	30.916
	7	O. Arg. S. 10227.	. .	3	III–VII.	" " "	"	"	"	"	"	"	32.146	. .	30.858
	8	Anon. 10h 2m 22s	9.2	2	III, VI.	306 0 6.0	3.0	1.0	1.8	3.0	9.0	3.97	31.394	. .	30.097
	9	Anon. 10h 3m 11s	8.8	2	V, VI.	" " "	"	"	"	"	"	"	34.976	. .	33.684
	10	O. Arg. S. 10488.	7.0	3	III–VII.	349 25 4.0	2.0	3.1	2.9	59.0	3.0	2.33	32.538	. .	31.241
	11	Anon. 10h 21m 53s	7.0	3	IV–VI.	352 35 3.3	2.2	3.0	2.9	59.0	4.0	2.40	31.859	. .	30.568
	12	Anon. 10h 26m 4s	9.0	3	III–VII.	" " "	"	"	"	"	"	"	32.907	. .	31.620
	13	Nadir	. .	.	. .	100 0 3.0	3.0	1.1	4.0	2.0	8.0	3.52	31.286	. .	. .
14	14	O. Arg. S. 9040	. .	3	III–VII.	342 55 3.0	4.0	2.5	3.2	59.8	1.2	2.28	26.246	− 1.275	24.975
	15	Lalande 17605	7.5	3	III–VII.	280 5 5.0	6.9	4.2	8.0	5.0	8.5	6.27	26.071	. .	24.788
	16	O. Arg. S. 9243	7.0	3	III–VII.	342 30 4.1	4.8	3.9	6.0	1.3	3.0	3.85	30.225	. .	28.954
	17	Anon. 9h 9m 13s	9.5	3	III–VII.	298 40 4.5	6.0	1.5	2.8	2.3	5.9	3.83	27.598	. .	26.319
	18	Lalande 18604	8.0	3	IV–VI.	304 35 5.0	3.0	3.2	4.8	3.0	6.0	4.17	32.896	. .	31.620
	19	Lacaille 3905.	. .	3	IV–VI.	356 55 5.5	7.3	7.0	10.0	3.3	7.7	6.80	34.586	. .	33.313
	20	Anon. 9h 36m 16s	9.0	3	IV–VI.	342 30 6.3	6.2	6.8	8.2	3.7	5.8	6.17	27.531	. .	26.257
	21	Anon. 9h 41m 24s	9.0	3	IV–VI.	348 30 6.0	8.0	7.8	8.9	3.0	5.3	6.50	28.653	. .	27.380
	22	Lacaille 4065.	7.0	3	V, VI, VII.	353 5 6.1	8.2	7.3	9.1	4.0	7.0	6.95	25.659	. .	24.393
	23	Lacaille 4082.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	35.434	. .	34.161
	24	Lacaille 4132.	7.0	3	IV–VI.	346 25 7.0	6.9	7.0	7.1	3.0	5.6	6.10	31.647	. .	30.374
	25	Lacaille 4134.	7.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.763	. .	29.496
	26	Weisse X, 75	9.0	3	III–VII.	306 5 6.8	6.1	4.8	7.0	3.5	8.3	6.08	30.196	. .	28.919
	27	Weisse (2) X, 204	9.0	3	IV–VI.	287 35 7.0	7.0	5.0	9.0	5.2	9.1	7.05	27.354	. .	26.077
	28	Weisse (2) X, 255	8.0	3	III–VII.	321 55 5.0	6.1	4.8	6.8	3.0	5.3	5.17	26.106	. .	24.832
	29	Anon. 10h 22m 6s	8.5	3	IV–VI.	253 55 5.0	5.7	8.0	11.8	4.4	10.0	7.48	29.856	. .	28.575
	30	Lacaille 4384.	. .	3	IV–VI.	358 50 4.9	7.0	7.0	10.0	3.0	4.2	6.02	34.526	. .	33.253
	31	Weisse X, 781	6.8	3	IV–VI.	306 35 5.0	5.9	4.0	6.2	3.0	7.4	5.25	27.898	. .	26.621
	32	O. Arg. S. 11015.	8.0	3	III–VII.	346 25 5.0	6.9	6.2	7.0	2.0	3.9	5.17	24.684	. .	23.413
	33	Lacaille 4616.	. .	3	IV–VI.	357 35 6.0	9.0	8.0	10.3	4.0	oblit.	7.94	31.049	. .	29.775
	34	O. Arg. N. 11584	8.0	3	IV–VI.	260 0 5.0	5.2	5.8	11.0	4.0	10.0	6.83	34.931	. .	33.650
	35	O. Arg. N. 11674	. .	3	IV–VI.	246 30 5.2	6.8	8.2	12.9	6.1	11.1	8.38	36.079	. .	34.794
	36	Weisse XI, 318	. .	3	III–VII.	331 55 5.3	6.7	5.6	7.8	3.8	5.4	5.77	32.562	. .	31.288
	37	Nadir	. .	.	. .	100 0 5.1	10.0	5.0	11.0	5.8	9.9	7.80	31.404	. .	. .
16	38	b Mali	. .	3	IV–VI.	353 40 6.0	3.8	3.0	1.4	3.5	8.3	4.33	28.540	− 1.260	27.282
	39	B. A. C. 3015.	. .	3	III–VII.	301 0 6.5	2.3	1.0	58.8	5.7	10.8	4.18	28.210	. .	26.947
	40	60 Cancri	. .	3	III–VII.	306 45 6.7	3.0	0.2	54.7	5.8	11.9	4.55	29.835	. .	28.573
	41	B. A. C. 3082.	. .	3	IV–VI.	345 0 6.7	2.3	3.1	59.1	3.7	8.9	3.97	29.600	. .	28.341
	42	Lacaille 3643.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	39.867	. .	38.608
	43	Anon. 9h 3m 25s	8.0	3	IV–VI.	347 15 5.2	2.0	2.9	0.8	2.3	8.6	3.63	26.613	. .	25.355
	44	Lacaille 3733.	7.5	3	IV–VI.	350 50 3.8	0.0	59.9	59.2	1.0	4.1	1.33	27.263	. .	26.005
	45	Weisse IX, 337	8.0	3	III–VII.	333 50 6.0	2.1	2.1	59.0	3.0	6.2	3.07	33.811	. .	32.554
	46	Anon. 9h 24m 10s	7.0	3	IV–VI.	351 35 5.8	4.2	3.0	1.9	4.8	7.7	4.57	30.579	. .	29.321
	47	Lacaille 3874.	6.7	3	V, VI, VII.	" " "	"	"	"	"	"	"	20.078	. .	18.827
	48	Anon. 9h 33m 47s	8.0	3	IV–VI.	357 45 4.7	3.0	2.7	2.0	2.0	oblit.	3.70	29.569	. .	28.311
	49	Brisbane 2651	8.0	2	IV, V.	358 50 4.0	1.2	1.9	2.9	2.2	6.0	3.03	28.632	. .	27.372
	50	Brisbane 2657	7.7	2	V, VI.	" " "	"	"	"	"	"	"	24.132	. .	22.876
	51	O. Arg. S. 10241.	8.0	3	III–VII.	346 45 4.0	0.9	2.0	7.1	1.7	5.8	3.58	27.848	. .	26.593
	52	Anon. 9h 58m 46s	8.0	3	III–VII.	297 40 3.1	0.0	57.1	oblit.	2.8	7.0	1.93	29.661	. .	28.397
	53	Anon. 10h 4m 10s	8.0	3	IV–VI.	355 0 5.1	3.4	3.7	0.2	2.6	6.0	3.50	34.347	. .	33.089
	54	Weisse (2) X, 197	8.0	3	III–VII.	280 45 5.8	3.8	3.0	0.9	7.1	12.8	5.57	33.579	. .	32.311
	55	B. A. C. 3557.	6.0	3	IV–VI.	356 10 3.0	0.7	1.2	59.0	0.0	4.8	1.45	29.626	. .	28.368
	56	Lacaille 4307.	7.0	2	VIII, IX.	" " "	"	"	"	"	"	"	24.580	. .	23.363
	57	Anon. 10h 27m 18s	. .	3	IV–VI.	323 5 4.0	59.8	0.0	56.0	2.0	6.1	1.32	31.437	. .	30.177
	58	Lacaille 4389.	7.5	3	III–VII.	351 45 4.0	2.5	3.0	1.3	2.9	6.1	3.30	27.720	. .	26.466
	59	O. Arg. S. 10872.	9.0	4	I, II, VIII, IX.	346 20 3.9	0.0	0.9	57.9	1.1	5.1	1.48	30.708	. .	29.468
	60	O. Arg. S. 10874.	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	33.535	. .	32.277
	61	Lacaille 4508.	. .	3	IV–VI.	1 15 2.1	0.9	1.0	0.2	0.8	5.0	1.67	34.735	. .	33.478
	62	Lacaille 4567.	. .	3	IV–VI.	359 15 5.1	3.2	3.9	3.4	3.5	6.2	4.22	34.160	. .	32.903
	63	Nadir	. .	.	. .	100 0 5.0	3.3	0.3	2.1	5.0	11.4	4.52	31.283	. .	. .
21	64	O. Arg. S. 9914	9.0	3	III–VII.	342 45 5.2	58.0	1.9	58.2	57.0	6.0	1.05	27.450	− 1.244	26.210
	65	O. Arg. S. 9956	9.0	3	III–VII.	" " "	"	"	"	"	"	"	37.415	. .	36.175
	66	Weisse IX, 929	. .	3	III–VII.	304 10 7.5	59.9	2.0	0.9	2.4	10.9	3.93	32.342	. .	31.095

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. . .	. . .	− 1 11.3	N. 73 38 52.5	3 14.8	− 34 48 28.0	+ 4.7	D.	
2	29.882	55.0	49.8	+ 2 1.8	73 17 6.3	3 10.9	− 34 26 38.0	+ 4.0	D.	
3	. .	. . .	. . .	+ 2 26.8	59 17 30.3	1 37.5	− 20 25 28.5	+ 0.6	D.	
4	. .	. . .	48.7	− 0 50.5	76 44 13.9	4 1.7	− 37 54 36.4	+ 3.1	D.	
5	. .	. . .	. . .	− 0 4.8	75 24 58.6	3 39.9	− 36 34 59.3	+ 2.2	D.	
6	. .	. . .	. . .	− 0 28.7	66 44 34.0	2 14.6	− 27 53 9.4	+ 0.4	D.	
7	. .	. . .	. . .	− 0 26.9	66 44 35.8	2 14.6	− 27 53 11.2	+ 0.2	D.	
8	. .	. . .	. . .	− 0 3.0	26 0 0.9	28.4	+ 12 53 9.9	− 10.2	D.	
9	. .	. . .	. . .	− 1 55.5	25 58 8.5	28.4	+ 12 55 2.4	− 10.3	D.	
10	29.889	52.7	47.5	− 0 38.9	69 24 23.4	2 34.0	− 30 33 18.2	− 1.1	D.	
11	. .	. . .	. . .	− 0 17.8	72 34 44.6	3 4.1	− 33 44 9.4	− 1.8	D.	
12	. .	. . .	46.2	− 0 50.8	72 34 11.6	3 4.2	− 33 43 36.6	− 2.2	D.	
13	. .	. . .	. . .	. .	. . . .	. .	. . . .	. .	D.	
14	. .	. . .	. . .	+ 2 37.2	62 57 39.5	1 56.5	− 24 5 56.8	+ 5.8	D.	
15	. .	. . .	. . .	+ 2 43.0	0 7 49.3	0.1	+ 38 45 49.8	− 14.7	D.	
16	30.218	44.0	41.0	+ 0 32.8	62 30 36.6	1 54.4	− 23 38 51.8	+ 4.7	D.	
17	. .	. . .	. . .	+ 1 55.2	18 41 59.0	20.3	+ 20 11 20.0	− 9.7	D.	
18	. .	. . .	40.3	− 0 50.8	24 34 13.4	27.4	+ 14 18 58.4	− 8.6	D.	
19	30.235	44.0	. . .	− 1 43.9	76 53 22.9	4 12.2	− 38 3 55.9	+ 4.6	D.	
20	. .	. . .	. . .	+ 1 57.1	62 32 3.3	1 54.9	− 23 40 19.0	+ 1.1	D.	
21	. .	. . .	. . .	+ 1 22.0	68 31 28.5	2 31.5	− 29 40 20.7	+ 1.8	D.	
22	. .	. . .	. . .	+ 2 55.4	73 8 2.3	3 15.7	− 34 17 38.8	+ 2.0	D.	
23	30.247	43.5	39.1	− 2 10.4	73 2 56.5	3 14.8	− 34 12 32.1	+ 1.7	D.	
24	. .	. . .	. . .	− 0 11.7	66 24 54.4	2 16.9	− 27 33 32.1	− 0.3	D.	
25	. .	. . .	. . .	+ 0 15.8	66 25 21.9	2 16.0	− 27 33 58.7	− 0.1	D.	
26	. .	. . .	. . .	+ 0 33.8	26 5 39.9	29.5	+ 12 47 29.9	− 10.8	D.	
27	. .	. . .	. . .	+ 2 2.8	N. 7 37 9.8	8.0	+ 31 16 21.4	− 16.6	D.	
28	. .	. . .	. . .	+ 2 41.7	S. 41 57 46.8	54.1	− 3 5 1.7	+ 7.0	D.	
29	. .	. . .	. . .	+ 0 44.6	N. 26 4 7.9	29.4	+ 64 58 16.6	− 25.9	D.	
30	30.254	42.7	37.0	− 1 42.0	S. 78 48 24.0	4 56.7	− 39 59 41.5	− 1.3	D.	
31	. .	. . .	. . .	+ 1 45.8	26 36 51.0	30.3	+ 12 16 18.0	− 12.5	D.	
32	30.253	42.2	36.1	+ 3 26.0	66 28 31.1	2 18.1	− 27 37 10.0	− 4.4	D.	
33	. .	. . .	. . .	+ 0 7.0	S. 77 35 15.0	4 28.8	− 38 46 4.5	− 4.0	D.	Corr. −0″.38 applied to mean of A, B, C, D.
34	. .	. . .	. . .	− 1 54.4	N. 20 1 47.6	22.1	+ 58 55 48.9	− 24.7	D.	
35	. .	. . .	. . .	− 2 30.3	N. 33 32 21.9	40.0	+ 72 26 41.2	− 27.3	D.	
36	30.256	41.8	35.5	− 0 40.3	S. 51 54 25.4	1 17.1	− 13 2 3.3	− 8.7	D.	
37	. .	. . .	. . .	. .	. . . .	. .	. . . .	. .	D.	
38	. .	. . .	57.2	+ 1 25.1	73 41 29.4	3 14.1	− 34 51 4.2	+ 9.1	D.	
39	. .	. . .	. . .	+ 1 35.5	21 1 39.7	22.2	+ 17 51 37.4	− 7.3	D.	
40	. .	. . .	. . .	+ 0 44.7	26 45 49.2	29.1	+ 12 7 20.9	− 5.6	D.	
41	. .	. . .	. . .	+ 0 51.9	65 0 55.9	2 3.2	− 26 9 19.8	+ 5.4	D.	
42	30.068	57.5	55.8	− 4 30.1	64 55 33.8	2 2.7	− 26 3 57.3	+ 5.3	D.	
43	. .	. . .	. . .	+ 2 25.3	67 17 28.9	2 17.2	− 28 26 6.9	+ 5.2	D.	
44	. .	. . .	. . .	+ 2 5.0	70 52 6.3	2 45.1	− 32 1 12.2	+ 5.5	D.	
45	. .	. . .	. . .	− 1 20.1	53 48 43.0	1 19.0	− 14 56 22.8	+ 0.7	D.	
46	. .	. . .	. . .	+ 0 21.2	71 35 25.8	2 52.4	− 32 44 39.0	+ 4.2	D.	
47	30.068	57.0	53.6	+ 5 49.0	71 40 53.6	2 53.3	− 32 50 7.6	+ 4.2	D.	
48	. .	. . .	. . .	+ 0 52.9	77 45 56.6	4 21.3	− 38 56 38.7	+ 4.4	D.	Corr. +0″.60 applied to mean of A, B, C, D.
49	. .	. . .	. . .	+ 1 22.2	78 51 25.3	4 46.0	− 40 2 32.1	+ 3.9	D.	
50	. .	. . .	. . .	+ 3 42.8	78 53 45.8	4 47.5	− 40 4 54.0	+ 3.9	D.	
51	30.067	57.0	52.1	+ 1 46.6	66 46 50.2	2 14.7	− 27 55 25.6	+ 0.8	D.	Corr. +1″.29 applied to mean of A, B, E, F.
52	. .	. . .	. . .	+ 0 50.2	17 40 54.7	18.6	+ 21 12 26.0	− 13.1	D.	May be 25′, as recorded in observation book.
53	. .	. . .	. . .	− 1 36.8	74 58 26.7	3 33.3	− 36 8 20.8	+ 1.2	D.	
54	. .	. . .	. . .	− 1 12.4	0 43 53.2	0.7	+ 38 9 45.4	− 18.8	D.	
55	30.065	56.3	51.4	+ 0 51.1	76 10 52.5	3 51.8	+ 37 21 5.1	+ 0.1	D.	
56	. .	. . .	. . .	+ 3 27.5	76 13 29.0	3 53.1	− 37 23 42.8	− 0.4	D.	
57	. .	. . .	. . .	− 0 5.6	43 4 55.8	54.4	− 4 12 10.9	− 7.3	D.	
58	. .	. . .	. . .	+ 1 50.6	71 46 53.9	2 55.5	− 32 56 10.1	− 1.9	D.	
59	. .	. . .	. . .	+ 0 16.7	66 20 18.1	2 12.2	− 27 28 51.0	− 3.3	D.	
60	. .	. . .	51.0	− 1 11.3	66 18 50.1	2 12.0	− 27 27 22.9	− 3.3	D.	
61	30.051	56.0	50.8	− 1 49.0	81 13 12.6	6 0.4	− 42 25 33.8	− 2.0	D.	
62	. .	. . .	. . .	− 1 31.0	79 13 33.2	4 57.3	− 40 24 51.3	+ 2.6	D.	
63	. .	. . .	. . .	. .	. . . .	. .	. . . .	. .	D.	
64	. .	. . .	. . .	+ 1 58.6	62 46 59.6	1 49.1	− 23 55 9.4	+ 1.9	D.	
65	29.822	67.2	63.6	− 3 13.7	62 41 47.4	1 48.7	− 23 49 56.8	+ 1.7	D.	
66	. .	. . .	. . .	− 0 34.3	S. 24 9 29.6	25.3	+ 14 43 44.3	− 10.6	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Apr. 21	1	Anon. $9^h 49^m 30^s$	. .	3	IV–VI.	351 35 7.8	3.8	5.2	3.4	1.2	8.4	4.97	29.867	− 1.244	28.625
	2	Lacaille 4142	6.7	3	IV–VI.	“ “ “	“	“	“	“	“	“	28.501	. .	27.259
	3	Anon. $10^h 3^m 37^s$	9.2	1	V.	305 45 7.1	0.3	1.0	0.3	0.2	10.2	3.18	31.187	. .	29.943
	4	Anon. $10^h 9^m 59^s$	. .	3	III–VII.	357 30 7.0	1.7	5.0	4.2	59.0	7.0	3.98	34.639	. .	33.403
	5	Anon. $10^h 17^m 48^s$	7.7	3	III–VII.	348 30 6.0	1.6	4.8	1.1	58.0	6.6	3.02	33.578	. .	32.339
	6	O. Arg. S. 10684.	. .	3	III–VII.	343 25 5.2	59.0	1.0	59.0	57.7	6.0	1.32	30.967	. .	29.727
	7	O. Arg. S. 10840.	7.0	3	III–VII.	349 0 6.0	1.0	4.8	1.9	59.0	5.7	3.07	26.837	. .	25.599
	8	Lacaille 4480	. .	3	IV–VI.	357 20 6.0	1.0	4.1	2.9	58.6	oblit.	3.24	34.033	. .	32.791
	9	Lacaille 4505	8.0	3	IV–VI.	344 55 6.0	59.2	3.0	59.8	58.9	6.2	2.18	31.511	. .	30.268
	10	Anon. $10^h 53^m 2^s$	8.0	3	III–VII.	354 40 6.4	3.0	4.9	3.0	0.1	8.0	4.23	33.881	. .	32.644
	11	Anon. $11^h 0^m 56^s$	9.0	3	III–VII.	347 50 6.8	2.0	5.2	3.0	58.7	8.0	3.95	30.458	. .	29.219
	12	Anon. $11^h 3^m 1^s$	9.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	40.815	. .	39.573
	13	Lacaille 4693	. .	3	III–VII.	342 30 6.3	1.1	4.0	1.1	59.8	7.0	3.22	31.808	. .	30.668
	14	Nadir	. .	.	. .	100 0 5.9	2.9	2.3	4.1	1.2	11.9	4.72	31.274	. .	. .
24	15	Lacaille 3923.	. .	3	IV–VI.	343 0 5.1	59.9	2.2	59.4	58.0	5.0	1.60	32.683	− 1.232	31.452
	16	Lacaille 4006.	. .	3	III–VII.	354 5 7.0	3.3	5.0	4.3	0.9	7.6	4.68	29.155	. .	27.930
	17	Anon. $9^h 45^m 11^s$	. .	3	III–VII.	300 50 7.0	2.2	3.3	2.6	2.1	10.1	4.55	37.297	. .	36.062
	18	O. Arg. S. 10241.	. .	3	III–VII.	346 45 7.0	1.6	5.8	2.2	0.0	7.9	4.08	27.771	. .	26.544
	19	Anon. $9^h 56^m 16^s$	9.0	3	II, V, VIII.	305 20 6.2	0.2	2.6	1.0	1.3	9.1	3.40	24.375	. .	23.136
	20	Anon. $9^h 56^m 35^s$	9.0	3	II–VIII.	“ “ “	“	“	“	“	“	“	26.342	. .	25.106
	21	Weisse X, 75	9.0	3	III–VII.	306 5 6.5	1.0	2.1	2.0	1.0	10.0	3.77	29.957	. .	28.723
	22	Lacaille 4242.	. .	3	IV–VI.	355 0 7.0	3.9	5.9	3.9	59.8	7.0	4.58	32.353	. .	32.123
	23	Lacaille 4287.	. .	3	IV–VI.	356 30 6.8	3.9	6.0	5.0	59.3	7.0	4.67	34.295	. .	33.065
	24	Weisse X, 425	7.8	3	III–VII.	308 50 6.6	1.9	3.8	1.1	2.0	9.0	4.07	36.094	. .	34.860
	25	O. Arg. S. 10775.	8.0	3	III–VII.	347 15 6.2	1.0	5.0	2.2	58.7	6.3	3.23	27.844	. .	26.617
	26	Anon. $10^h 37^m 20^s$	8.3	3	III–VII.	“ “ “	“	“	“	“	“	“	32.707	. .	31.480
	27	Anon. $10^h 40^m 58^s$	. .	3	III–VII.	354 15 5.6	2.2	4.7	3.1	59.7	6.0	3.55	31.237	. .	30.012
	28	Lacaille 4506.	. .	3	III–VII.	350 30 4.1	59.0	2.4	1.1	56.8	4.0	1.23	33.025	. .	31.799
	29	B. A. C. 3792	. .	3	IV–VI.	353 55 6.6	2.9	4.9	3.0	0.8	6.8	4.17	28.257	. .	27.027
	30	B. A. C. 3823	. .	3	IV–VI.	347 55 5.1	2.0	5.8	3.9	58.8	7.2	3.80	28.264	. .	27.034
	31	O. Arg. S. 11226.	7.0	3	IV–VI.	“ “ “	“	“	“	“	“	“	29.724	. .	28.494
	32	Nadir	. .	.	. .	100 0 4.8	2.3	2.0	4.0	1.0	10.9	4.17	31.244	. .	. .
May 5	33	21 Sextantis	. .	3	III–VII.	326 15 6.0	2.9	1.7	2.1	1.1	5.9	3.28	34.204	− 1.229	32.976
	34	Anon. $10^h 16^m 12^s$	. .	3	IV–VI.	354 25 6.1	5.2	5.7	6.6	2.0	7.7	5.55	32.524	. .	31.297
	35	Anon. $10^h 21^m 54^s$	. .	3	IV–VI.	352 35 6.0	5.5	5.0	7.3	0.5	6.0	5.05	31.789	. .	30.562
	36	Lacaille 4364.	. .	3	III–VII.	345 50 6.0	4.0	4.2	3.2	0.9	5.8	4.02	30.383	. .	29.159
	37	Anon. $10^h 37^m 20^s$	. .	3	III–VII.	347 15 6.0	3.8	5.0	6.0	0.9	8.0	4.95	32.763	− 1.229	31.539
	38	Anon. $10^h 42^m 53^s$	9.0	3	III–VII.	348 40 6.8	6.4	6.4	7.0	2.0	6.6	5.87	34.174	. .	32.951
	39	54 Leonis, (2d *)	8.5	3	III–VII.	293 30 6.8	4.3	4.8	4.0	4.0	9.7	5.60	37.961	. .	36.727
	40	Anon. $10^h 58^m 10^s$	9.5	1	V.	284 20 7.0	4.3	6.0	6.1	4.9	11.9	6.70	25.051	. .	23.822
	41	Weisse XI, 318	7.0	3	III–VII.	331 55 5.0	2.8	3.2	4.8	1.0	5.9	3.78	32.289	. .	31.062
	42	B. A. C. 3925	6.7	3	III–VII.	326 0 4.2	1.2	1.6	59.8	59.7	5.0	1.92	33.062	. .	31.834
	43	Nadir	. .	.	. .	100 0 5.0	5.7	2.6	7.8	3.1	11.1	5.88	31.296	. .	. .
10	44	26 Sextantis	. .	3	III–VII.	319 10 7.7	1.1	1.0	58.9	1.0	11.0	3.45	26.705	− 1.223	25.482
	45	Lacaille 4360.	. .	3	III–VII.	344 50 8.0	3.0	3.5	1.0	1.8	10.8	4.68	28.256	. .	27.038
	46	Weisse X, 781	. .	3	III–VII.	306 35 8.0	2.0	1.1	0.9	4.0	12.8	4.80	27.851	. .	26.626
	47	Lalande 21014	. .	3	III–VII.	294 55 8.2	0.8	2.4	1.0	5.0	13.6	5.17	28.745	. .	27.518
	48	Weisse (2) X, 1112	. .	3	III–VII.	282 0 8.9	2.1	2.9	2.0	5.0	13.9	5.80	26.199	. .	24.969
	49	Lacaille 4633.	. .	3	III–VII.	350 40 8.0	2.9	4.0	4.2	2.9	10.0	5.33	26.625	. .	25.408
	50	B. A. C. 3911.	. .	3	III–VII.	310 30 8.2	1.8	2.5	59.8	4.0	10.1	4.40	23.992	. .	22.768
	51	Weisse XI, 562	. .	3	III–VII.	319 35 6.7	1.0	1.0	58.9	1.1	10.0	3.12	29.678	. .	28.455
	52	Weisse XI, 646	8.0	3	IV–VI.	325 55 6.4	59.0	0.3	57.2	1.0	8.0	1.98	24.604	. .	23.381
	53	Nadir	. .	.	. .	100 0 1.9	0.0	57.0	0.9	0.0	10.1	1.65	31.156	. .	. .
15	54	O. Arg. S. 11610.	. .	3	III, IV, V.	347 50 2.4	0.3	3.0	7.0	59.1	1.1	2.15	32.090	+ 0.464	32.552
	55	Lacaille 4867.	. .	3	V, VI, VII.	“ “ “	“	“	“	“	“	“	23.946	. .	24.418
	56	B. A. C. 4024	7.0	3	III–VII.	343 50 2.2	0.0	2.3	6.0	1.1	0.3	1.98	27.248	. .	27.716
	57	O. Arg. S. 11848.	9.5	1	V.	344 35 4.0	1.1	5.0	8.3	3.8	2.9	4.18	30.730	. .	31.194
	58	Lacaille 5042.	. .	3	IV–VI.	351 35 4.0	4.3	5.1	9.3	4.0	1.3	4.67	26.579	. .	27.049
	59	Anon. $12^h 11^m 47^s$	9.0	3	III–VII.	344 40 4.0	0.9	4.0	7.1	2.4	1.0	3.23	24.482	. .	24.951
	60	O. Arg. S. 12124.	8.0	3	III–VII.	“ “ “	“	“	“	“	“	“	36.229	. .	36.698
	61	O. Arg. S. 12161.	8.0	3	III–VII.	345 20 4.9	2 0	5.6	7.0	3.7	0.9	4.02	31.171	. .	31.640
	62	Lacaille 5189.	7.8	3	IV–VI.	359 10 5.3	4.8	7.8	13.4	5.0	2.2	6.42	31.644	. .	32.111
	63	Weisse XII, 626.	8.0	3	III–VII.	304 50 4.9	1.7	4.0	9.1	5.9	5.0	5.10	31.244	. .	31.706
	64	Anon. $12^h 43^m 27^s$	8.0	3	IV–VI.	356 5 4.9	5.0	7.0	11.2	3.8	2.4	5.72	32.611	. .	33.077
	65	Weisse XII, 820.	7.0	3	III–VII.	321 40 4.3	2.9	5.0	9.4	4.3	3.7	4.93	23.279	. .	23.743

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 43.1	S. 71 35 48.0	2 47.8	− 32 44 56.6	+ 2.3	D.	
2	. .	. .	. .	+ 1 25.8	71 36 30.8	2 48.0	− 32 45 39.5	+ 1.4	D.	
3	. .	. .	. .	+ 0 1.8	25 45 5.0	27.2	+ 13 8 7.0	− 11.2	D.	
4	. .	. .	. .	− 1 46.7	77 28 17.3	4 2.7	− 38 38 40.8	+ 1.5	D.	
5	29.844	66.3	62.3	− 1 13.3	68 28 49.7	2 22.3	− 29 37 32.7	− 0.7	D.	
6	. .	. .	. .	+ 0 8.5	63 25 9.8	1 52.5	− 24 33 23.1	− 2.3	D.	
7	. .	. .	62.2	+ 2 17.7	69 2 20.8	2 26.5	− 30 11 8.0	− 2.1	D.	
8	. .	. .	. .	− 1 27.5	77 18 35.8	4 5.8	− 38 29 2.3	− 1.3	D.	Corr. −0″.26 applied to mean of A, B, C, D.
9	. .	. .	. .	− 0 8.4	64 54 53.8	2 0.3	− 26 3 14.8	− 3.7	D.	
10	29.865	66.0	62.0	− 1 22.9	74 38 41.4	3 23.0	− 35 48 25.1	− 2.5	D.	
11	. .	. .	. .	+ 0 24.4	67 50 28.4	2 18.1	− 28 59 7.2	− 4.1	D.	
12	. .	. .	. .	− 5 0.4	67 45 3.5	2 17.5	− 28 53 41.8	− 4.2	D.	Smaller, and preceding of a double star.
13	. .	. .	. .	− 0 20.9	62 29 42.3	1 48.4	− 23 37 51.4	− 5.8	D.	
14	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
15	29.936	66.5	62.8	− 0 45.5	62 59 16.1	1 50.6	− 24 7 27.5	+ 2.1	D.	
16	. .	. .	. .	+ 1 4.8	74 6 9.5	3 16.1	− 35 15 46.3	+ 3.9	D.	
17	. .	. .	. .	− 3 10.1	20 46 54.5	21.5	+ 18 6 23.3	− 12.2	D.	
18	. .	. .	62.0	+ 1 48.2	66 46 52.2	2 11.3	− 27 55 24.3	+ 1.4	D.	
19	. .	. .	. .	+ 3 34.6	25 23 38.0	26.9	+ 13 29 34.3	− 11.3	D.	
20	. .	. .	. .	+ 2 33.1	25 22 36.5	26.9	+ 13 30 35.9	− 11.4	D.	Star preceding 18 or 20 sec., about 1′ south.
21	. .	. .	. .	+ 0 40.0	26 5 43.8	27.9	+ 12 47 27.6	− 11.7	D.	
22	29.938	66.0	62.2	− 0 35.2	74 59 29.4	3 28.2	− 36 9 18.3	+ 1.4	D.	Barometer recorded 29.838.
23	. .	. .	. .	− 1 36.1	76 28 28.6	3 51.2	− 37 38 40.6	+ 1.2	D.	
24	. .	. .	. .	− 2 32.4	28 47 31.7	31.2	+ 10 5 36.4	− 11.8	D.	
25	. .	. .	. .	+ 1 45.9	67 16 49.1	2 14.7	− 28 25 24.6	− 1.5	D.	
26	. .	. .	61.6	− 0 46.4	67 14 16.9	2 14.5	− 28 22 52.1	− 1.9	D.	
27	. .	. .	. .	− 0 0.4	74 15 3.2	3 19.6	− 35 24 43.5	− 0.9	D.	
28	29.940	65.2	61.2	− 0 56.4	70 29 4.9	2 38.9	− 31 38 4.5	− 2.1	D.	
29	. .	. .	. .	+ 1 33.0	73 56 37.2	3 14.9	− 35 6 12.9	− 2.2	D.	
30	. .	. .	. .	+ 1 32.8	67 56 36.6	2 19.5	− 29 5 16.9	− 3.7	D.	
31	29.942	65.2	61.2	+ 0 47.2	67 55 51.0	2 19.4	− 29 4 31.1	− 3.8	D.	
32	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
33	29.870	58.3	55.3	− 1 33.2	46 13 30.0	59.9	− 7 20 50.6	− 5.6	D.	
34	. .	. .	54.7	− 0 40.6	74 24 24.9	3 22.8	− 35 34 8.5	+ 1.4	D.	
35	. .	. .	. .	− 0 17.6	72 34 47.5	3 1.2	− 33 44 9.4	− 0.6	D.	
36	29.860	58.0	54.0	+ 0 26.3	65 50 30.3	2 7.5	− 26 58 58.6	− 1.5	D.	
37	. .	. .	. .	− 0 48.2	67 14 16.7	2 16.2	− 28 22 53.7	− 1.7	D.	
38	. .	. .	. .	− 1 32.5	68 38 33.4	2 26.0	− 29 47 20.2	− 1.7	D.	
39	. .	. .	. .	− 3 31.0	13 26 34.6	13.8	+ 25 26 50.9	− 18.5	D.	
40	. .	. .	. .	+ 3 13.2	4 23 19.9	4.4	+ 34 30 14.9	− 21.7	D.	Cloudy, uncertain.
41	29.000	57.2	54.0	− 0 33.3	51 54 30.5	1 14.2	− 13 2 5.4	− 8.0	D.	
42	. .	. .	. .	− 0 57.5	45 59 4.4	59.6	− 7 6 24.8	− 10.0	D.	
43	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
44	. .	. .	. .	+ 2 21.3	39 12 24.8	44.8	− 0 19 30.3	− 8.9	D.	
45	29.941	67.2	66.7	+ 1 32.7	64 51 37.4	1 59.1	− 25 59 57.3	− 1.7	D.	
46	. .	. .	. .	+ 1 45.6	26 36 50.4	28.2	+ 12 16 20.7	− 14.5	D.	
47	. .	. .	66.1	+ 1 17.7	14 56 22.9	15.0	+ 23 57 1.4	− 18.7	D.	
48	. .	. .	. .	+ 2 37.4	2 2 43.2	2.0	+ 36 50 54.1	− 23.1	D.	No other star near.
49	29.952	67.0	66.0	+ 2 23.7	70 42 29.0	2 39.4	− 31 51 29.1	− 2.6	D.	
50	. .	. .	. .	+ 3 46.1	30 33 50.5	33.3	+ 8 19 15.5	− 14.8	D.	
51	. .	. .	64.6	+ 0 48.4	39 35 51.5	46.7	− 0 42 59.0	− 9.6	D.	
52	. .	. .	. .	+ 3 27.0	45 58 29.0	58.4	− 7 5 48.1	− 8.0	D.	
53	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	Adjusted microscopes to read alike
54	. .	. .	. .	− 1 20.0	67 48 42.2	2 16.4	− 28 57 19.3	− 4.8	D.	
55	29.620	67.0	62.9	+ 2 54.6	67 52 56.7	2 16.8	− 29 1 34.3	− 4.8	D.	
56	. .	. .	. .	+ 1 11.5	63 51 13.5	1 53.7	− 24 59 27.9	− 6.3	D.	
57	. .	. .	. .	− 0 37.4	64 34 26.8	1 57.4	− 25 42 44.9	− 6.5	D.	
58	. .	. .	62.0	+ 1 32.3	71 36 37.0	2 47.1	− 32 45 44.8	− 5.4	D.	
59	29.629	66.3	61.7	+ 2 37.9	64 42 41.2	1 58.3	− 25 51 0.2	− 7.4	D.	
60	. .	. .	. .	− 3 30.1	64 36 33.1	1 57.8	− 25 44 51.7	− 7.6	D.	
61	. .	. .	. .	− 0 51.4	65 19 12.6	2 1.7	− 26 27 35.1	− 7.6	D.	
62	29.630	66.0	61.3	− 1 6.1	79 9 0.3	4 44.5	− 40 20 5.6	− 5.3	D.	
63	. .	. .	. .	− 0 53.4	24 49 11.7	26.0	+ 14 4 1.6	− 18.2	D.	
64	. .	. .	60.7	− 1 36.4	76 3 29.3	3 42.6	− 37 13 32.6	− 6.7	D.	
65	. .	. .	. .	+ 3 15.7	S. 41 43 20.6	50.2	− 2 50 31.6	− 13.9	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
May 15	1	Lacaille 5368.	. .	3	III–VII.	347 25 4.3	3.1	7.0	9.7	2.7	2.0	4.80	29.344	+ 0.464	29.813
	2	Anon. 13h 4m 27s	8.2	3	III–VII.	330 5 3.7	1.1	3.8	7.2	1.9	1.9	3.27	27.019	. .	27.485
	3	Weisse XIII, 145	9.0	3	III–VII.	316 0 4.0	59.0	2.0	6.0	3.0	3.7	2.95	29.196	. .	29.659
	4	Weisse XIII, 223	. .	3	IV–VI.	329 55 4.0	1.3	4.8	8.2	2.2	1.0	3.58	27.391	. .	27.856
	5	Anon. 13h 19m 35s	9.0	3	IV–VI.	353 50 4.7	4.8	7.0	11.8	5.0	2.0	5.88	35.770	. .	36.236
	6	Anon. 13h 27m 32s	8.0	3	III–VII.	355 45 4.0	5.1	6.0	10.9	2.8	1.1	4.98	33.152	. .	33.623
	7	Lacaille 5636.	. .	3	IV–VI.	352 35 4.8	5.0	6.2	11.7	3.2	2.0	5.48	34.682	. .	35.148
	8	Lacaille 5639.	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	23.136	. .	23.609
	9	Nadir	. .	.	. . .	100 0 4.2	6.0	5.2	14.0	7.0	8.9	7.55	29.657	. .	. .
17	10	Weisse (2) XI, 53	. .	2	V, VI.	283 10 5.8	4.0	6.8	14.2	7.0	7.0	7.47	28.934	+ 0.469	29.403
	11	Lacaille 4703.	. .	3	IV–VI.	358 35 6.4	8.0	9.7	16.9	5.4	2.7	8.18	27.103	. .	27.574
	12	O. Arg. S. 11394.	8.0	3	IV–VI.	342 0 6.0	5.0	8.0	13.8	4.2	1.8	6.47	33.825	. .	34.285
	13	O. Arg. S. 11410.	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	32.818	. .	33.288
	14	Lacaille 4805.	. .	3	IV–VI.	352 45 6.0	8.9	9.0	14.3	4.1	3.8	7.68	26.964	. .	27.435
	15	Rumker 3727.	7.0	3	III–VII.	303 55 5.4	5.0	7.4	12.3	8.0	6.7	7.47	32.044	. .	32.510
	16	Lacaille 4909.	7.5	3	III–VII.	345 15 5.4	5.0	7.8	11.2	4.0	2.1	5.92	33.666	. .	34.140
	17	Lacaille 4979.	. .	3	IV–VI.	352 45 5.9	8.0	9.0	13.9	4.0	3.0	7.30	27.529	. .	28.000
	18	B. A. C. 4095	. .	3	IV–VI.	" " "	"	"	"	"	"	"	21.312	. .	21.783
	19	Weisse XII, 49	7.7	3	IV–VI.	310 45 6.7	7.2	7.8	12.9	6.2	5.7	7.75	25.556	. .	26.025
	20	Anon. 12h 12m 1s	8.0	3	IV–VI.	295 0 6.0	4.9	5.6	13.0	6.9	6.4	7.13	25.036	. .	25.506
	21	Lacaille 5131.	. .	3	III–VII.	348 30 7.5	9.2	11.7	16.4	6.1	5.9	9.47	33.703	. .	34.177
	22	Lacaille 5189.	. .	3	IV–VI.	359 10 3.3	7.0	8.0	16.4	3.1	0.4	6.37	31.801	. .	32.273
	23	Lacaille 5226.	7.0	3	IV–VI.	356 55 3.0	5.4	7.9	14.0	2.4	oblit.	5.65	30.829	. .	31.300
	24	Anon. 12h 36m 10s	8.5	3	IV–VI.	354 10 3.0	6.1	7.2	12.7	2.9	0.2	5.35	33.335	. .	33.806
	25	Lacaille 5281.	. .	3	IV–VI.	2 45 2.8	5.1	6.2	14.0	2.9	0.9	5.32	26.004	. .	26.477
	26	O. Arg. S. 12538.	7.0	3	IV–VI.	340 20 0.0	2.1	2.0	9.0	59.1	6.6	3.13	29.888	. .	30.359
	27	O. Arg. S. 12564.	7.7	3	III–VII.	" " "	"	"	"	"	"	"	34.701	. .	35.175
	28	Anon. 12h 57m 16s	9.0	3	III–VII.	355 55 4.0	8.0	8.0	16.0	3.0	1.0	6.67	28.895	. .	29.372
	29	B. A. C. 4405	6.0	3	IV–VI.	0 20 4.0	6.8	7.2	16.0	3.2	1.1	6.38	28.692	. .	29.165
	30	Weisse XII, 145.	8.5	3	III–VII.	316 0 4.0	2.1	4.0	9.9	3.1	2.4	4.25	29.246	. .	29.715
	31	Lacaille 5510.	7.0	3	III–VII.	344 0 4.0	5.9	8.0	13.0	3.9	2.0	6.13	27.552	. .	28.027
	32	Anon. 13h 21m 12s	. .	3	IV–VI.	351 40 3.0	5.8	6.9	12.8	2.8	0.9	5.37	36.542	. .	37.014
	33	Nadir	. .	.	. . .	100 0 3.1	8.0	6.8	15.8	6.8	6.3	7.80	29.660	. .	. .
June 7	34	12 Comæ	. .	3	IV–VI.	292 15 1.8	2.0	2.8	6.0	5.2	5.2	3.83	22.063	+ 0.485	22.547
	35	γ Virginis, (2d *)	. .	4	I, II, VIII, IX.	319 35 2.3	2.9	3.7	5.6	3.1	4.0	3.60	26.220	. .	26.707
	36	γ Virginis, (1st *)	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.378	. .	26.865
	37	Weisse XII, 835	. .	3	III–VII.	319 10 3.0	2.0	3.3	6.0	3.0	4.0	3.55	34.575	. .	35.062
	38	Lacaille 5371.	. .	3	IV–VI.	352 25 3.0	4.9	5.9	11.2	2.9	1.9	4.97	27.566	. .	28.054
	39	B. A. C. 4369.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	32.294	. .	32.782
	40	Anon. 13h 5m 8s	9.0	1	V.	305 55 3.5	1.6	1.8	7.2	3.7	5.1	3.82	37.577	. .	38.063
	41	Weisse XIII, 304	8.7	3	III–VII.	324 30 2.3	2.2	3.0	5.1	3.0	3.0	3.10	29.673	. .	30.160
	42	Lacaille 5621.	7.7	3	IV–VI.	351 15 1.3	2.9	5.0	10.2	2.7	1.8	3.98	24.612	. .	25.100
	43	B. A. C. 4581	7.0	3	III–VII.	344 20 4.0	4.3	6.0	9.8	3.9	3.6	5.27	31.166	. .	31.657
	44	Lacaille 5729.	7.0	3	IV–VI.	353 30 4.6	8.1	9.0	13.5	5.8	5.3	7.72	28.756	. .	29.244
	45	Lacaille 5779.	. .	1	V.	2 20 5.0	6.5	8.2	14.1	5.7	5.3	7.47	28.512	. .	28.998
	46	O. Arg. S. 13394.	9.0	3	III–VII.	345 35 3.8	3.9	5.8	9.8	3.0	2.3	4.77	29.918	. .	30.409
	47	Lacaille 5877.	. .	3	IV–VI.	353 15 2.7	4.9	6.0	12.0	3.2	3.8	5.43	30.630	. .	31.118
	48	Weisse XIV, 236	7.5	3	III–VII.	323 30 2.7	2.2	3.9	8.4	3.8	4.0	4.17	30.500	. .	30.987
	49	Lacaille 5959.	7.0	3	III–VII.	343 50 2.0	4.0	5.0	10.0	3.3	2.6	4.48	31.367	. .	31.857
	50	Anon. 14h 29m 5s	9.0	3	III–VII.	355 50 2.6	5.0	5.9	12.0	1.1	2.0	4.77	34.270	. .	34.763
	51	Lamont 4482	9.0	3	III–VII.	318 40 2.2	2.2	3.0	6.8	1.4	3.9	3.25	26.801	. .	27.287
	52	B. A. C. 4923, (1st *)	9.0	4	I, II, VIII, IX.	339 40 2.4	4.2	6.7	10.9	2.7	2.0	4.82	27.084	. .	27.584
	53	B. A. C. 4923, (2d *)	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.951	. .	27.438
	54	Nadir	. .	.	. . .	100 0 2.8	6.2	5.0	12.0	6.9	7.2	6.68	29.608	. .	. .
11	55	Sun N.	. .	2	III, IV.	295 30 1.8	4.3	1.9	9.8	9.0	7.3	5.68	33.015	+ 0.466	33.472
	56	Sun S.	. .	2	VI, VIII.	296 0 1.1	2.1	0.0	7.0	5.9	3.0	3.18	26.963	. .	27.429
	57	Nadir	.	.	. . .	100 0 1.0	1.2	1.0	7.0	4.0	6.0	3.37	29.522	. .	. .
	58	κ Virginis	. .	3	III–VII.	322 0 1.0	1.9	2.0	5.4	3.0	3.0	2.72	31.248	+ 0.492	31.741
	59	B. A. C. 4431	. .	3	III–VII.	316 45 2.0	1.0	1.0	4.8	4.0	4.7	2.92	31.951	. .	32.443
	60	B. A. C. 4455	. .	3	III–VII.	329 50 2.2	2.2	3.0	6.0	3.1	3.1	3.27	26.559	. .	27.053
	61	Weisse XIII, 318	. .	3	III–VII.	318 35 2.3	1.2	1.8	4.0	3.0	4.0	2.72	30.289	. .	30.781
	62	Anon. 13h 32m 33s	. .	3	III–VII.	345 20 2.9	2.2	4.0	6.2	3.5	2.0	3.47	28.000	. .	28.497
	63	O. Arg. S. 13149	. .	3	III–VII.	349 0 2.1	4.0	4.1	9.0	3.8	1.8	4.13	35.363	. .	35.861
	64	Lacaille 5724.	. .	3	IV–VI.	356 30 1.4	4.0	3.4	9.9	2.0	0.0	3.45	35.325	. .	35.819
	65	Lacaille 5779.	. .	3	IV–VI.	2 20 1.9	2.3	4.0	9.7	3.0	1.3	3.70	28.098	. .	28.593
	66	Anon. 13h 59m 26s	. .	1	VI.	333 45 1.0	0.9	1.0	4.1	1.0	59.9	1.32	28.798	. .	29.296

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.640	65.5	60.1	+ 0 5.8	S. 67 25 10.6	2 14.7	− 28 33 46.1	− 8.6	D.	
2	. .	. .	. .	+ 1 18.7	50 6 22.0	1 7.4	− 11 13 50.1	− 12.2	D.	
3	. .	. .	. .	+ 0 10.7	36 0 13.6	44.0	+ 2 52 41.7	− 15.3	D.	
4	. .	. .	. .	+ 1 7.1	49 56 10.7	1 7.0	− 11 3 38.4	− 12.4	D.	
5	29.636	65.0	60.0	− 3 15.6	73 46 50.3	3 11.2	− 34 56 22.3	− 8.6	D.	
6	. .	. .	. .	− 1 53.6	75 43 11.4	3 37.7	− 36 53 9.8	− 8.6	D.	
7	. .	. .	. .	− 2 41.4	72 32 24.1	2 57.3	− 33 41 42.1	− 9.2	D.	
8	29.635	64.7	59.7	+ 3 19.8	72 38 25.3	2 58.4	− 33 47 44.4	− 9.2	D.	
9	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
10	. .	. .	. .	+ 0 18.7	3 10 26.2	3.2	+ 35 43 9.9	− 23.6	D.	
11	29.864	62.5	57.7	+ 1 15.9	78 36 24.1	4 35.6	− 39 47 20.5	− 0.9	D.	
12	. .	. .	. .	− 2 14.3	61 57 52.1	1 46.7	− 23 5 59.6	− 5.3	D.	
13	. .	. .	. .	− 1 43.1	61 58 23.4	1 46.9	− 23 6 31.1	− 5.4	D.	
14	. .	. .	57.1	+ 1 20.3	72 46 28.0	3 2.2	− 33 55 50.9	− 3.2	D.	
15	. .	. .	. .	− 1 18.7	23 53 48.8	25.3	+ 14 59 25.1	− 17.8	D.	
16	29.866	61.5	56.9	− 2 9.8	65 12 56.2	2 3.2	− 26 21 20.1	− 5.7	D.	
17	. .	. .	. .	+ 1 2.6	72 46 9.9	3 2.3	− 33 55 33.0	− 4.5	D.	
18	. .	. .	. .	+ 4 16.8	72 49 24.1	3 3.0	− 33 58 47.9	− 5.0	D.	
19	. .	. .	. .	+ 2 4.4	30 47 12.1	34.2	+ 8 5 52.9	− 16.2	D.	
20	. .	. .	. .	+ 2 20.6	15 2 27.7	15.4	+ 23 50 56.1	− 21.0	D.	
21	. .	. .	56.3	− 2 11.0	68 27 58.5	2 24.1	− 29 36 43.3	− 6.6	D.	
22	29.871	60.5	56.1	− 1 11.2	79 8 55.2	4 49.9	− 40 20 5.8	− 4.9	D.	
23	. .	. .	. .	− 0 40.7	76 54 24.9	4 1.3	− 38 4 47.0	− 5.6	D.	Corr. −1″.93 applied to mean of A, B, C, D.
24	. .	. .	. .	− 2 2.1	74 8 3.2	3 18.7	− 35 17 42.7	− 6.3	D.	
25	29.870	60.3	56.1	+ 1 50.2	82 46 55.6	7 4.1	− 44 0 20.4	− 5.2	D.	Blurred.
26	. .	. .	. .	− 0 11.2	60 19 51.9	1 40.2	− 21 27 52.8	− 9.6	D.	
27	. .	. .	. .	− 2 42.2	60 17 20.9	1 40.1	− 21 27 21.7	− 9.6	D.	
28	. .	. .	56.1	+ 0 19.7	75 55 26.3	3 44.4	− 37 5 31.4	− 7.0	D.	
29	29.069	60.0	56.0	+ 0 26.1	80 20 32.5	5 24.1	− 41 32 17.4	− 6.1	D.	
30	. .	. .	. .	+ 0 8.9	36 0 13.2	41.6	+ 2 52 44.5	− 15.4	D.	
31	. .	. .	. .	+ 1 1.8	64 1 7.9	1 57.0	− 25 9 24.6	− 9.6	D.	
32	29.865	60.0	56.3	− 3 40.0	71 36 25.4	2 50.4	− 32 45 36.5	− 8.9	D.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
34	. .	. .	. .	+ 3 53.0	12 18 56.8	12.4	+ 26 34 31.0	− 24.5	D.	
35	. .	. .	. .	+ 1 43.0	39 36 46.6	47.1	− 0 43 54.5	− 15.7	D.	
36	30.202	68.3	64.9	+ 1 38.1	39 36 41.7	47.1	− 0 43 49.5	− 15.7	D.	
37	. .	. .	. .	− 2 38.7	39 7 24.9	46.4	− 0 14 32.0	− 16.0	D.	
38	. .	. .	. .	+ 1 0.9	72 26 5.9	2 58.3	− 33 35 24.9	− 6.3	D.	
39	. .	. .	63.2	− 1 27.2	72 23 37.8	2 57.9	− 33 32 56.4	− 6.4	D.	
40	. .	. .	. .	− 4 13.0	25 50 50.8	27.7	+ 13 2 20.7	− 20.4	D.	
41	30.206	67.0	62.0	− 0 5.0	44 29 58.1	56.2	− 5 37 15.0	− 14.6	D.	
42	. .	. .	61.3	+ 2 33.3	71 17 37.3	2 47.6	− 32 26 45.6	− 7.6	D.	
43	. .	. .	. .	− 0 51.9	64 19 13.4	1 58.7	− 25 27 32.8	− 9.4	D.	
44	30.197	66.3	60.7	+ 0 23.7	73 30 31.4	3 11.3	− 34 40 3.4	− 6.9	D.	
45	. .	. .	. .	+ 0 31.4	82 20 38.8	6 42.8	− 43 33 42.4	− 5.9	D.	Very faint.
46	. .	. .	. .	− 0 12.8	65 34 52.0	2 5.8	− 26 43 18.5	− 9.5	D.	
47	. .	. .	60.0	− 0 35.0	73 14 30.4	3 8.6	− 34 23 59.8	− 8.0	D.	
48	. .	. .	. .	− 0 30.9	43 29 33.3	55.5	− 4 36 49.5	− 14.7	D.	
49	. .	. .	. .	− 0 58.2	63 49 6.3	1 56.5	− 24 57 23.6	− 10.1	D.	Whole revolution not recorded.
50	30.214	65.0	59.0	− 2 29.3	75 47 35.5	3 43.5	− 36 57 39.7	− 7.9	D.	
51	. .	. .	. .	+ 1 24.9	38 41 28.2	46.1	+ 0 11 25.0	− 15.3	D.	
52	30.216	64.0	58.5	+ 1 15.6	59 41 20.4	1 38.3	− 20 49 19.5	− 10.9	D.	
53	. .	. .	. .	+ 1 20.2	59 41 25.0	1 38.3	− 20 49 24.1	− 10.9	D.	
54	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
55	. .	. .	. .	− 1 48.8	15 28 16.8	13.1	+ 23 25 9.3	. .	D.	
56	29.946	68.0	72.0	+ 1 20.5	16 1 23.6	13.6	+ 22 52 2.0	. .	D.	
57	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
58	29.932	69.0	66.3	− 0 54.5	41 59 8.2	50.6	− 3 6 19.5	− 15.4	D.	
59	. .	. .	. .	− 1 16.6	36 43 45.4	42.1	+ 2 9 11.8	− 14.0	D.	Very steady.
60	. .	. .	64.5	+ 1 32.2	49 51 35.5	1 6.8	− 10 59 3.1	− 13.1	D.	
61	. .	. .	. .	− 0 24.5	38 34 38.2	45.1	+ 0 18 15.9	− 16.6	D.	
62	29.950	68.0	63.0	+ 0 47.1	65 20 50.5	2 2.8	− 26 29 14.0	− 8.9	D.	
63	. .	. .	. .	− 3 3.8	68 57 0.3	2 26.2	− 30 5 47.2	− 8.2	D.	
64	. .	. .	. .	− 3 2.5	76 27 1.0	3 50.7	− 37 37 12.4	− 6.5	D.	
65	29.955	67.0	62.0	+ 0 44.1	82 20 47.8	6 38.3	− 43 33 46.8	− 5.5	D.	
66	. .	. .	. .	+ 0 22.0	S. 33 45 23.4	1 17.5	− 14 53 1.6	− 12.3	D.	Small star following south.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. June 11	1	Weisse XIV, 199 .	. .	3	III–VII.	332 0 1.9	2.0	3.8	6.2	3.1	3.0	3.33	32.024	+ 0.492	32.518
	2	Anon. 13h 18m 13s .	7.3	3	III–VII.	345 0 1.1	1.7	3.0	5.0	1.1	0.9	2.13	29.378	. .	29.875
	3	Lacaille 6015. . .	. .	3	III–VII.	357 5 3.5	6.8	7.0	13.2	5.0	oblit.	6.55	33.347	. .	33.847
	4	Lacaille 6086. . .	. .	3	III–VII.	356 35 3.8	7.1	7.0	13.3	5.0	3.3	6.58	31.672	. .	32.171
	5	Groombridge 2210 .	. .	3	III–VII.	232 25 3.0	2.0	7.8	14.7	5.1	8.6	6.87	29.541	. .	30.031
	6	Weisse XIV, 1110 .	9.0	3	III–VII.	320 40 3.0	4.3	4.6	8.0	5.0	4.0	4.82	25.063	. .	25.555
	7	Lalande 27907 . .	. .	3	III–VII.	340 40 2.8	5.2	5.0	11.0	4.3	2.8	5.18	31.731	. .	32.227
	8	O. Arg. S. 14533 .	. .	3	III–VII.	346 30 3.3	5.0	6.9	9.1	4.0	3.0	5.22	30.882	. .	31.379
	9	Nadir	. .	.	. .	100 0 4.0	7.0	4.9	13.1	7.0	9.0	7.50	29.628	. .	. .
16	10	Moon N.	. .	5	I–IX.	313 20 1.0	57.9	59.0	4.9	3.0	2.8	1.43	31.004	− 0.480	31.481
	11	Lacaille 5886. . .	. .	3	III–VII.	355 15 1.2	3.0	5.0	9.9	1.3	1.0	3.57	31.483	. .	31.970
	12	Anon. 14h 23m 13s .	9.0	3	IV–VI.	322 5 3.4	3.0	3.9	8.0	4.0	4.0	4.38	37.543	. .	38.023
	13	Lacaille 6162. . .	. .	3	III–VII.	347 30 3.7	4.0	6.0	10.8	3.0	4.0	5.25	31.543	. .	38.028
	14	Lacaille 6204, (1st *).	. .	4	I, II, VIII, IX.	346 10 3.1	1.8	4.5	7.1	2.0	1.6	3.35	28.033	. .	28.534
	15	Lacaille 6204, (2d *) .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	28.201	. .	28.683
	16	B. A. C. 4984 . .	. .	3	III–VII.	342 20 1.3	2.8	4.0	8.9	2.1	1.1	3.37	27.953	. .	28.437
	17	Lacaille 6318. . .	. .	3	III–VII.	353 20 2.0	4.2	5.9	12.0	4.6	3.8	5.42	34.698	. .	35.185
	18	O. Arg. S. 14544. .	. .	3	III–VII.	339 50 2.6	4.1	4.5	11.0	3.9	2.5	4.77	35.202	. .	35.686
	19	Lacaille 6409. . .	. .	3	III–VII.	351 20 3.0	5.0	6.9	11.1	4.9	3.1	5.67	35.873	. .	36.359
	20	B. A. C. 5163. . .	. .	3	III–VII.	346 5 3.0	3.3	5.1	9.0	3.0	3.3	4.45	30.858	. .	31.343
	21	Lacaille 6522. . .	. .	3	III–VII.	356 5 3.8	6.0	7.0	12.3	3.7	3.6	6.07	28.031	. .	28.518
	22	18 Ursæ Minoris . .	. .	3	III–VII.	238 30 4.0	2.0	8.9	15.3	7.0	10.2	7.90	28.287	. .	28.766
	23	Nadir	. .	.	. .	100 0 4.5	6.2	5.0	14.1	7.9	9.8	7.92	29.653	. .	. .
17	24	Moon N.	. .	5	I–IX.	318 29 60.5	58.0	58.0	59.2	60.4	61.7	59.63	21.820	+ 0.601	22.421
	25	Nadir	. .	.	. .	99 59 58.1	56.8	55.1	60.8	60.1	62.8	58.95	29.365	. .	. .
	26	B. A. C. 4691 . .	. .	3	III, V, IX.	334 25 5.1	4.2	3.8	4.4	5.2	4.3	4.50	26.926	. .	27.534
	27	B. A. C. 4800 . .	. .	3	III–VII.	343 35 4.7	3.4	4.5	5.7	3.8	5.0	4.52	28.251	. .	28.856
	28	Anon. 14h 49m 22s .	. .	3	III–VII.	345 5 5.0	4.9	6.2	6.7	6.3	5.1	5.70	23.916	. .	24.522
	29	Lacaille 6229. . .	. .	3	III–VII.	351 15 3.2	4.2	6.0	7.2	6.0	4.6	5.20	29.412	. .	30.019
	30	Lacaille 6293. . .	. .	3	III–VII.	356 50 3.2	3.4	5.9	8.1	3.3	oblit.	4.70	34.314	. .	34.922
	31	Anon. 15h 25m 21s .	. .	3	III–VII.	351 35 3.2	5.5	5.1	8.7	5.0	4.6	5.35	28.394	. .	29.001
	32	Anon. 15h 46m 45s .	. .	3	III–VII.	337 25 4.2	1.9	5.4	5.0	3.8	5.7	4.33	28.088	. .	28.692
	33	O. Arg. S. 15147. .	. .	3	III–VII.	342 40 4.4	4.2	5.7	7.1	5.7	5.9	5.50	29.188	. .	29.793
	34	O. Arg. N. 15952 .	. .	3	V, VI, VIII.	253 50 7.5	7.3	11.4	15.2	11.5	15.0	11.32	26.342	. .	26.924
	35	Anon. 16h 23m 41s .	. .	3	III–VII.	352 5 1.2	1.8	3.0	4.1	2.7	1.4	2.70	35.183	. .	35.790
	36	O. Arg. S. 15790. .	. .	3	III–VII.	347 30 0.0	58.1	1.7	3.1	59.5	0.1	0.42	29.988	. .	30.594
	37	Lacaille 6976. . .	. .	4	III, V, VII, IX.	351 34 56.7	58.2	60.0	61.2	59.0	63.0	59.68	32.845	. .	33.456
	38	B. A. C. 5665 . .	. .	3	III–VII.	349 24 54.7	53.9	58.0	59.8	55.0	53.0	55.73	32.858	. .	33.465
	39	Lacaille 7174. . .	. .	3	III–VII.	356 55 5.0	6.4	7.5	10.8	5.5	oblit.	7.00	33.234	. .	33.843
	40	B. A. C. 5897 . .	7.5	3	IV, V, VII.	350 15 0.9	58.9	2.1	5.5	59.3	0.0	1.12	26.787	. .	27.398
	41	Lacaille 7395. . .	. .	3	III–VII.	352 20 2.1	0.9	2.6	6.1	1.4	0.3	2.23	35.897	. .	36.504
	42	Anon. 17h 39m 6s .	. .	4	III, V, VII, IX	353 10 4.8	4.8	3.5	9.0	6.0	6.3	5.73	27.328	. .	27.950
	43	O. Arg. S. 17379. .	. .	3	III–VII.	345 59 59.0	58.0	62.7	61.9	60.0	59.2	60.13	32.831	. .	33.437
	44	Anon. 18h 23m 50s .	. .	3	III–VII.	352 0 3.6	4.0	4.5	8.8	8.8	3.2	4.65	34.268	. .	34.875
18	45	Moon N.	. .	5	I–IX.	323 40 3.1	0.1	2.0	3.2	5.0	7.8	3.53	21.102	+ 0.479	21.584
	46	B. A. C. 4631 . .	. .	3	IV–VI.	353 50 3.0	0.0	3.8	6.1	3.9	6.0	3.80	26.429	. .	26.910
	47	Lacaille 5790. . .	. .	3	III–VII.	345 5 3.8	59.2	2.1	3.0	2.2	5.0	2.55	30.249	. .	30.733
	48	O. Arg. S. 13438 .	. .	3	III–VII.	344 35 3.8	59.0	2.2	4.1	4.0	5.6	3.12	29.012	. .	29.492
	49	Lacaille 5878. . .	. .	3	IV–VI.	0 50 4.0	1.1	4.0	9.1	3.2	6.0	4.57	34.756	. .	35.238
	50	Anon. 14h 16m 17s .	. .	3	III–VII.	346 25 4.0	0.0	4.0	4.8	2.0	5.7	3.42	29.871	. .	30.355
	51	Lacaille 5963. . .	. .	3	III–VII.	357 10 4.8	2.0	4.8	9.3	4.8	oblit.	5.43	35.339	. .	35.826
	52	Lacaille 6020. . .	. .	3	III–VII.	353 30 5.0	3.9	6.0	9.2	5.7	7.7	6.25	23.968	. .	24.454
	53	B. A. C. 4858 . .	. .	3	III–VII.	" " "	"	"	"	"	"	"	32.024	. .	32.510
	54	Lacaille 6100. . .	. .	3	IV–VI.	354 10 5.0	2.6	5.8	7.3	4.9	7.4	5.50	33.347	. .	33.828
	55	Lacaille 6178. . .	. .	3	IV–VI.	356 10 4.1	3.0	6.2	8.8	4.1	6.1	5.38	27.235	. .	27.715
	56	Lacaille 6199. . .	. .	3	IV–VI.	354 15 4.0	1.9	4.5	7.1	4.0	6.0	4.58	27.516	. .	27.996
	57	O. Arg. S. 14349. .	. .	3	III–VII.	344 5 3.9	1.7	4.0	5.8	4.9	6.6	4.48	33.150	. .	33.633
	58	Lacaille 6343. . .	. .	3	IV–VI.	353 5 3.3	0.9	3.0	7.0	3.0	5.7	3.82	29.969	. .	30.449
	59	Lacaille 6354. . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	25.792	. .	26.272
	60	Lacaille 6388. . .	. .	3	IV–VI.	357 0 5.0	3.4	6.6	10.0	4.9	oblit.	6.48	28.982	. .	29.462
	61	O. Arg. S. 14648. .	. .	3	III–VII.	343 30 4.0	0.3	3.3	5.4	4.0	5.9	3.82	26.195	. .	26.677
	62	Weisse XVI, 619 .	7.3	3	III–VII.	324 40 4.8	1.9	3.0	5.1	5.8	8.0	4.77	26.320	. .	26.799
	63	Weisse XVI, 758 .	. .	3	IV–VI.	324 50 3.9	1.0	2.0	4.4	5.1	7.0	3.90	26.077	. .	26.555
	64	Saturn's ring, S. L. .	. .	4	II, IV, VI, VIII.	339 30 4.0	1.8	5.0	7.9	4.0	5.9	4.77	27.200	. .	27.684

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 1 18.9	S. 51 58 44.4	1 12.7	− 13 6 17.8	− 12.8	D.	Close double; pr. * a little to the north, but no trustworthy difference of dec. can be measured.
2	29.965	66.2	61.3	+ 0 3.9	65 0 6.0	2 1.3	− 26 8 28.1	− 9.6	D.	
3	. .	. .	61.0	− 2 0.6	77 3 6.0	4 2.2	− 38 13 28.9	− 7.3	D.	Corr. −1″.08 applied to mean of A, B, C, D.
4	. .	. .	. .	− 1 8.0	S. 76 33 58.6	3 53.5	− 37 44 11.8	− 7.6	D.	
5	. .	. .	. .	− 0 1.0	N. 47 34 54.1	1 2.3	+ 86 29 35.6	− 22.9	D.	
6	29.965	65.0	60.2	+ 2 19.1	S. 40 42 23.9	49.0	− 1 49 33.6	− 14.7	D.	
7	. .	. .	59.9	− 1 9.8	60 38 55.4	1 41.1	− 21 46 57.2	− 10.6	D.	
8	. .	. .	. .	− 0 43.2	66 29 22.0	2 10.3	− 27 37 53.1	− 9.6	D.	Micrometer mean diminished by one revolution, *vide* 1867.
9	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
10	30.080	71.0	71.0	− 0 46.4	33 24 15.0	−15 39.0	+ 5 45 3.2	. .	D.	
11	30.114	68.0	64.0	− 1 1.7	75 14 1.8	3 32.0	− 36 23 54.6	− 7.2	D.	
12	. .	. .	. .	− 4 11.7	42 1 52.7	51.2	− 3 8 4.6	− 15.4	D.	Sky hazy.
13	30.180	67.5	63.7	− 1 3.5	67 29 1.7	2 16.6	− 28 37 39.0	− 9.0	D.	
14	. .	. .	. .	+ 0 45.9	66 10 49.3	2 8.4	− 27 19 18.4	− 9.2	D.	
15	. .	. .	. .	+ 0 41.2	66 10 44.6	2 8.4	− 27 19 13.7	− 9.3	D.	
16	. .	. .	. .	+ 0 48.9	62 20 52.3	1 48.4	− 23 29 1.5	− 10.0	D.	
17	30.184	67.0	63.0	− 2 42.6	73 17 22.9	3 7.7	− 34 26 51.3	− 7.9	D.	
18	. .	. .	. .	− 2 58.3	59 47 6.4	1 37.6	− 20 55 4.8	− 12.2	D.	
19	. .	. .	. .	− 3 19.4	71 16 46.2	2 46.4	− 32 25 53.4	− 8.4	D.	
20	30.086	66.8	62.7	− 0 42.1	66 4 22.7	2 7.6	− 27 12 51.0	− 9.2	D.	
21	. .	. .	. .	+ 0 46.4	S. 76 5 52.5	3 45.5	− 37 15 58.7	− 7.6	D.	
22	. .	. .	. .	+ 0 38.6	N. 41 29 13.5	50.2	+ 80 23 42.9	− 24.0	D.	
23	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
24	30.178	73.4	75.4	+ 3 56.9	38 33 56.6	−19 49.4	+ 0 39 32.1	. .	B.	
25	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
26	30.168	73.1	71.8	+ 1 17.2	54 26 21.7	1 18.3	− 15 34 0.7	− 12.1	B.	
27	. .	. .	. .	+ 0 35.8	63 35 40.3	1 52.5	− 24 43 53.6	− 9.8	B.	
28	30.170	72.8	71.0	+ 2 51.3	65 7 57.0	2 0.5	− 26 16 18.3	− 9.4	B.	
29	. .	. .	. .	− 0 0.6	71 15 4.6	2 43.9	− 32 24 9.2	− 8.2	B.	
30	. .	. .	. .	− 2 34.3	76 47 30.4	3 54.5	− 37 57 45.7	− 7.2	B.	Corr. −0″.45 applied to mean of A, B, C, D.
31	30.166	72.0	69.7	+ 0 31.3	71 35 36.6	2 47.4	− 32 44 44.7	− 8.2	B.	
32	. .	. .	. .	+ 0 41.0	N. 57 25 45.3	1 27.9	− 18 33 34.0	− 10.5	B.	
33	. .	. .	. .	+ 0 6.5	S. 62 40 12.0	1 48.6	− 23 48 21.3	− 9.5	B.	
34	. .	. .	. .	+ 1 36.2	N. 26 8 12.4	27.7	+ 65 2 19.3	− 21.2	B.	
35	30.164	71.8	68.7	− 3 1.6	S. 72 2 1.1	2 52.0	− 33 11 13.8	− 8.0	B.	
36	. .	. .	. .	− 0 18.6	67 29 41.8	2 15.2	− 28 38 17.8	− 8.4	B.	
37	. .	. .	. .	− 1 48.3	71 33 11.3	2 47.3	− 32 42 19.4	− 7.9	B.	
38	. .	. .	. .	− 1 48.6	69 23 7.1	2 29.0	− 30 31 56.9	− 8.0	B.	2d star, larger, followed 10 seconds.
39	30.160	71.1	68.3	− 2 0.5	76 53 6.5	3 57.0	− 38 3 24.3	− 7.3	B.	Corr. −0″.45 applied to mean of A, B, C, D.
40	. .	. .	. .	+ 1 21.4	70 16 22.6	2 36.0	− 31 25 19.3	− 7.3	B.	
41	. .	. .	. .	− 3 24.0	72 16 38.2	2 54.6	− 33 25 53.6	− 7.1	B.	
42	. .	. .	. .	+ 1 4.2	73 11 9.9	3 4.4	− 34 20 35.0	− 7.0	B.	
43	30.152	71.0	67.9	− 1 47.8	65 58 12.4	2 5.9	− 27 6 39.0	− 6.7	B.	
44	30.140	70.5	65.5	− 2 32.8	71 57 31.8	2 51.5	− 33 6 44.1	− 6.0	B.	
45	30.070	77.0	77.2	+ 4 23.0	43 44 26.6	−23 38.2	− 4 27 9.1	. .	D.	
46	. .	. .	76.9	+ 1 36.7	73 51 40.5	3 8.7	− 35 1 9.9	− 6.8	D.	
47	. .	. .	. .	− 0 23.0	65 4 39.6	1 58.6	− 26 12 59.0	− 9.2	D.	
48	. .	. .	. .	+ 0 15.9	64 35 19.0	1 56.1	− 25 43 35.9	− 9.4	D.	
49	30.079	77.0	76.0	− 2 44.2	80 47 20.4	5 27.8	− 41 59 8.9	− 5.6	D.	
50	. .	. .	. .	− 0 11.1	66 24 52.3	2 6.3	− 27 33 19.4	− 9.0	D.	
51	. .	. .	75.8	− 3 2.7	77 7 2.7	3 55.7	− 38 57 19.2	− 6.4	D.	Corr. +0″.21 applied to mean of A, B, C, D.
52	. .	. .	. .	+ 2 53.5	73 32 59.7	3 5.4	− 34 42 25.9	− 7.5	D.	
53	. .	. .	. .	− 1 18.7	73 28 47.6	3 4.6	− 34 38 13.0	− 7.6	D.	
54	. .	. .	. .	− 2 0.0	74 8 5.5	3 12.5	− 35 17 38.7	− 7.2	D.	
55	. .	. .	75.4	+ 1 11.5	76 11 16.9	3 41.5	− 37 21 19.2	− 7.2	D.	
56	30.081	76.5	. .	+ 1 2.7	74 16 7.3	3 14.2	− 35 25 42.3	− 7.6	D.	
57	. .	. .	. .	− 1 53.9	64 3 10.6	1 53.6	− 25 11 24.9	− 9.7	D.	
58	. .	. .	. .	− 0 14.1	73 4 49.8	3 0.3	− 34 14 10.8	− 7.9	D.	
59	. .	. .	. .	+ 1 56.7	73 7 0.5	3 0.7	− 34 16 21.9	− 7.9	D.	
60	. .	. .	. .	+ 0 16.8	77 0 23.3	3 55.6	− 38 10 39.6	− 7.4	D.	Corr. +0″.23 applied to mean of A, B, C, D.
61	. .	. .	74.9	+ 1 44.0	63 31 47.8	1 51.1	− 24 39 59.7	− 9.7	D.	
62	. .	. .	74.7	+ 1 40.2	44 41 44.9	55.0	− 5 49 0.7	− 11.0	D.	
63	. .	. .	. .	+ 1 47.8	44 51 51.7	55.4	− 5 59 7.8	− 10.6	D.	
64	. .	. .	. .	+ 1 12.5	S. 59 31 17.3	1 33.5	− 20 39 1.4	. .	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. June 18	1	Saturn's ring, N. L.	. .	3	III–VII.	329 30 4.0	1.8	5.0	7.9	4.0	5.9	4.77	27.850	+ 0.478	28.332
	2	Nadir	. .	.	. .	100 0 3.0	1.9	2.1	8.0	5.9	11.0	5.32	29.571	. .	. .
19	3	Nadir	. .	.	. .	100 0 0.1	56.0	57.0	0.9	2.0	5.9	0.45	29.416	+ 0.598	. .
	4	Moon N.	. .	5	I–IX.	328 35 4.1	57.0	1.8	0.1	1.2	3.2	1.23	24.967	. .	25.571
	5	Lacaille 6186.	. .	3	III–VII.	356 25 5.0	1.8	5.4	6.4	4.5	6.1	4.87	35.107	. .	35.712
	6	Lacaille 6351.	. .	3	III–VII.	347 45 1.7	57.7	1.6	0.9	59.8	2.1	0.63	32.115	. .	32.718
	7	Anon. $15^h 23^m 26^s$	. .	3	III–VII.	342 5 5.2	0.0	4.0	2.7	4.0	4.0	3.32	31.108	. .	31.710
	8	Anon. $15^h 34^m 9^s$	. .	3	III–VII.	354 10 6.0	2.8	5.0	6.9	4.1	5.8	5.10	28.349	. .	28.953
	9	O. Arg. S. 14909.	. .	3	III, V, VIII.	338 15 6.9	1.8	6.0	5.0	3.1	5.0	4.63	25.855	. .	26.463
	10	48 Libræ	. .	3	III–VII.	332 45 2.1	58.6	2.5	1.2	1.9	3.3	1.60	26.857	. .	27.457
	11	O. Arg. S. 15292.	. .	3	III–VII.	345 0 2.7	58.1	2.5	1.1	1.8	3.4	1.60	34.969	. .	35.572
	12	Lacaille 6871.	. .	3	III–VII.	352 5 5.1	2.3	5.5	6.8	3.4	4.5	4.60	28.192	. .	28.796
	13	Lacaille 6930.	. .	3	III–VII.	351 45 6.3	4.3	7.7	9.1	6.2	6.6	6.70	31.432	. .	32.036
	14	Anon. $17^h 5^m 23^s$	. .	3	III–VII.	358 30 3.9	1.8	6.3	7.3	2.8	2.5	4.10	37.695	. .	38.301
July 3	15	Nadir	. .	.	. .	99 59 57.1	54.1	55.3	60.3	59.8	64.4	58.50	29.358	+ 0.594	. .
	16	B. A. C. 5001.	. .	3	III–VII.	289 5 4.3	59.2	1.7	2.2	4.4	7.9	3.28	20.556	. .	21.144
	17	Lacaille 6372.	. .	3	IV, V, VII.	354 55 8.0	4.2	8.5	7.0	6.2	8.0	6.98	37.255	. .	37.855
	18	Lacaille 6473.	. .	3	II, IV, VIII.	349 40 6.2	1.0	7.1	9.1	4.7	7.5	5.93	32.758	. .	33.361
	19	χ Lupi	. .	4	III, V, VII, IX.	352 5 2.2	57.1	2.1	3.9	1.4	1.5	1.37	30.428	. .	31.028
	20	O. Arg. S. 15147.	. .	3	III–VII.	342 40 2.3	56.7	1.4	0.8	0.5	2.3	0.67	28.892	. .	29.490
6	21	Saturn's ring, S.	. .	3	I–IX.	339 25 3.5	3.0	8.8	10.7	2.9	1.3	5.03	29.674	+ 0.597	30.283
	22	Saturn's ring, N.	. .	2	III–VII.	" " "	"	"	"	"	"	"	30.443	. .	31.045
	23	B. A. C. 5748	. .	3	III–VII.	329 45 5.2	4.7	7.6	9.2	4.6	3.6	5.82	26.603	. .	27.202
	24	Lacaille 7174.	. .	3	III–VII.	357 0 6.3	9.6	11.0	17.2	6.6	oblit.	9.96	42.949	. .	43.554
	25	O. Arg. S. 16710.	. .	3	III–VII.	349 15 3.0	4.9	7.1	8.9	2.3	0.2	4.40	29.063	. .	29.666
	26	O. Arg. S. 16908.	. .	3	III–VII.	334 55 2.4	3.4	4.5	8.4	3.5	1.1	3.88	35.577	. .	36.177
	27	O. Arg. S. 17466.	. .	3	III–VII.	343 10 3.1	5.8	6.9	10.3	4.3	2.8	5.53	41.812	. .	42.414
	28	B. A. C. 6145	. .	3	III–VII.	349 40 2.6	4.9	7.1	12.4	2.9	1.4	5.22	37.635	. .	38.238
	29	Lacaille 7646.	. .	3	III–VII.	353 0 1.7	4.9	4.5	11.7	2.2	1.2	4.37	30.658	. .	31.261
	30	Nadir	. .	.	. .	100 0 4.5	8.5	6.0	16.0	7.7	9.2	8.65	29.679	. .	. .
	31	B. A. C. 6604	. .	3	III–VII.	343 20 5.0	5.2	7.9	12.0	4.8	3.6	6.42	32.837	. .	33.438
	32	B. A. C. 6700	. .	3	III–VII.	340 0 2.9	4.2	7.5	10.4	1.9	1.9	4.80	38.296	. .	38.897
9	33	δ Libræ	. .	3	III–VII.	326 50 3.9	1.7	3.0	6.0	4.0	3.9	3.75	24.915	+ 0.496	25.412
	34	23 Libræ	. .	3	III–VII.	343 40 4.0	2.0	4.2	9.0	2.2	4.0	4.23	28.434	. .	28.934
	35	B. A. C. 5064	. .	3	IV–VI.	268 10 4.8	1.8	4.9	11.9	7.0	9.8	6.70	25.486	. .	25.978
	36	B. A. C. 5105	. .	3	V, VII, IX.	342 15 3.7	1.0	4.0	8.8	2.1	2.0	3.60	24.155	. .	24.673
	37	O. Arg. S. 14736.	9.0	3	III–VII.	" " "	"	"	"	"	"	"	31.222	. .	31.722
	38	Lacaille 6495.	. .	3	III–VII.	349 0 3.2	1.2	5.0	9.1	1.4	1.0	3.48	33.106	. .	33.608
	39	B. A. C. 5266	. .	3	III–VII.	345 15 3.1	0.3	3.3	7.0	1.1	1.6	2.73	33.265	. .	33.766
	40	Anon. $15^h 52^m 37^s$	9.0	3	IV, V, VIII.	" " "	"	"	"	"	"	"	42.393	. .	42.404
	41	Weisse XV, 1086	. .	3	III–VII.	312 30 3.1	59.2	2.0	5.2	2.4	3.0	2.48	28.673	. .	29.168
	42	Lacaille 6796.	. .	3	III, IV, V.	351 50 2.1	3.0	4.0	10.2	2.0	2.0	3.88	29.731	. .	30.224
	43	Lacaille 6796.	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	37.346	. .	37.853
	44	Weisse (2) XV, 703	. .	3	III–VII.	277 10 2.5	59.0	3.0	9.0	4.5	6.8	4.13	32.583	. .	33.070
	45	B. A. C. 5556	. .	3	III–VII.	348 30 1.2	1.0	4.0	8.3	0.1	1.1	2.62	27.826	. .	28.327
	46	Saturn, S. L.	. .	5	I–IX.	339 25 3.8	2.2	6.1	10.0	2.7	2.3	4.52	31.280	. .	31.786
	47	Saturn, N. L.	. .	4	II–VIII.	" " "	"	"	"	"	"	"	31.928	. .	32.430
	48	Nadir	. .	.	. .	100 0 4.1	5.0	4.0	13.9	6.0	10.0	7.17	29.612	. .	. .
10	49	Nadir	. .	.	. .	100 0 1.1	58.5	57.9	2.8	3.3	7.0	1.77	29.480	+ 0.577	. .
	50	Lacaille 6439.	. .	3	III–VII.	351 30 1.8	58.7	2.0	2.7	0.1	0.3	0.93	29.016	. .	29.599
	51	ξ Lupi, (2d *)	. .	3	III–VII.	352 25 1.8	59.5	1.3	3.7	1.0	2.3	1.60	28.347	. .	28.930
	52	Lacaille 6686.	. .	3	III–VII.	355 15 1.1	58.5	1.8	2.8	0.9	0.4	0.92	31.075	. .	31.659
	53	O. Arg. S. 15713.	. .	3	III–VII.	338 20 2.1	58.9	3.1	3.5	1.8	2.6	2.00	29.070	. .	29.651
	54	Weisse (2) XVI, 1735	. .	3	III–VII.	293 10 4.0	58.0	1.6	2.0	4.2	7.3	2.85	26.290	. .	26.862
	55	38 Ophiuchi	. .	3	IV–VI.	345 15 3.4	58.0	1.8	0.9	1.0	0.6	0.95	18.830	. .	19.408
	56	B. A. C. 5914	. .	3	III–VII.	351 50 0.7	2.9	6.4	8.0	5.9	4.8	4.78	32.765	. .	33.348
	57	Anon. $17^h 35^m 7^s$	. .	3	III–VII.	353 15 6.1	4.1	7.0	8.0	5.0	4.9	5.85	32.129	. .	32.713
	58	Anon. $17^h 44^m 12^s$	. .	3	III–VII.	353 15 7.0	3.0	8.0	8.6	6.0	6.2	6.47	30.829	. .	31.413
	59	Anon. $17^h 54^m 49^s$	. .	3	IV, V, VII.	340 25 8.2	4.9	7.1	9.5	7.0	8.4	7.52	35.055	. .	35.636
	60	Lalande 33147	. .	3	III–VII.	" " "	"	"	"	"	"	"	33.953	. .	34.534
	61	Anon. $18^h 24^m 37^s$	. .	3	III–VII.	352 0 2.0	0.0	2.0	5.2	1.0	1.0	1.87	38.916	. .	39.499
	62	O. Arg. S. 18584.	. .	3	III–VII.	338 14 60.9	57.3	59.8	61.7	58.4	59.5	59.60	33.111	. .	33.691
	63	6 Aquilæ	. .	3	III–VII.	323 45 0.5	6.8	0.6	0.3	1.0	1.1	1.72	28.052	. .	28.630
	64	Lacaille 7919.	. .	4	III, V, VII, IX.	358 0 0.1	57.9	2.2	5.7	59.8	0.6	1.05	40.717	. .	41.308
	65	Anon. $19^h 5^m 2^s$	. .	3	III, V, IX.	327 5 0.0	59.0	0.4	0.0	0.3	1.0	0.12	32.773	. .	33.357

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.080	75.5	73.6	+ 0 52.2	S. 59 30 57.0	1 33.5	− 20 39 1.4	. .	D.	
2	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
3	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
4	30.064	78.8	75.0	+ 2 18.6	48 37 19.8	−26 50.2	− 9 16 50.3	. .	B.	
5	. .	. .	. .	− 2 59.2	76 22 5.7	3 44.5	− 37 32 11.0	− 7.0	B.	
6	. .	. .	. .	− 1 25.2	67 43 35.4	2 14.8	− 28 52 11.0	− 8.9	B.	
7	. .	. .	. .	− 0 53.6	62 4 9.8	1 44.4	− 23 12 14.9	− 10.0	B.	
8	30.052	77.0	74.2	+ 0 32.8	74 10 37.9	3 13.3	− 35 20 11.9	− 7.7	B.	
9	. .	. .	. .	+ 1 50.7	58 16 55.3	1 29.7	− 19 24 45.8	− 10.5	B.	
10	. .	. .	. .	+ 1 19.6	52 46 21.2	1 13.1	− 13 53 55.0	− 11.3	B.	
11	. .	. .	. .	− 2 54.7	64 57 6.9	1 58.4	− 26 5 26.1	− 9.1	B.	
12	30.054	77.0	73.4	+ 0 37.7	72 5 42.3	2 50.4	− 33 14 53.4	− 7.9	B.	
13	. .	. .	. .	− 1 3.8	71 44 2.9	2 46.9	− 32 53 10.6	− 6.8	B.	
14	. .	. .	. .	− 4 20.5	78 25 43.6	4 24.8	− 39 36 29.2	− 7.0	B.	
15	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
16	29.838	81.6	82.3	+ 4 36.8	9 9 40.1	8.8	+ 29 43 50.4	− 23.7	B.	
17	. .	. .	. .	− 4 6.4	74 51 0.5	3 17.7	− 36 0 39.0	− 5.4	B.	
18	. .	. .	. .	− 1 45.4	69 38 20.6	2 25.4	− 30 47 6.7	− 6.6	B.	
19	29.856	81.5	81.2	− 0 32.2	72 4 29.2	2 46.6	− 33 13 36.5	− 5.9	B.	
20	. .	. .	. .	+ 0 16.0	62 40 16.6	1 45.1	− 23 48 22.5	− 7.8	B.	
21	30.265	69.9	64.8	− 0 8.9	59 24 56.2	} 1 35.4	− 20 32 40.8	. .	B.	
22	. .	. .	. .	− 0 32.8	59 24 32.3					
23	. .	. .	. .	+ 1 27.6	49 46 33.4	1 7.4	− 10 54 1.5	− 10.1	B.	
24	. .	. .	. .	− 7 4.6	76 53 5.3	4 1.1	− 38 3 45.4	− 5.4	B.	Corr. −1″.06 applied to mean of A, B, C, D.
25	. .	. .	. .	+ 0 10.4	69 15 54.0	2 29.6	− 30 24 5.2	− 6.4	B.	
26	30.260	69.0	63.6	− 3 13.7	54 51 50.2	1 21.0	− 15 59 32.0	− 8.2	B.	
27	. .	. .	. .	− 6 28.9	63 3 36.6	1 52.1	− 24 11 49.4	− 6.2	B.	
28	. .	. .	. .	− 4 18.5	69 35 46.7	2 32.5	− 30 44 40.0	− 5.4	B.	Faint star 3s or 4s later and south.
29	30.269	68.2	62.8	− 0 39.5	72 59 24.9	3 4.9	− 34 8 50.5	− 5.1	B.	
30	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
31	30.262	68.0	65.0	− 1 47.8	63 18 18.7	1 52.8	− 24 26 32.2	− 3.7	B.	
32	30.266	68.2	64.8	− 4 39.2	59 55 25.6	1 38.2	− 21 3 24.5	− 3.1	B.	
33	29.941	75.5	72.4	+ 2 23.5	46 52 27.3	59.3	− 7 59 47.3	− 14.9	D.	
34	. .	. .	. .	+ 0 33.4	S. 63 40 37.6	1 51.9	− 24 48 50.3	− 9.5	D.	
35	. .	. .	. .	+ 2 5.8	N. 11 47 47.5	11.6	+ 50 41 38.3	− 29.2	D.	
36	29.956	75.0	71.5	+ 2 46.6	S. 62 17 50.2	1 45.6	− 23 25 56.6	− 9.7	D.	
37	. .	. .	. .	− 0 53.9	62 14 9.7	1 45.4	− 23 22 15.8	− 9.6	D.	
38	. .	. .	. .	− 1 53.1	68 58 10.4	2 23.8	− 30 6 54.9	− 7.8	D.	
39	. .	. .	. .	− 1 58.1	65 13 4.7	2 0.2	− 26 21 25.6	− 8.1	D.	
40	29.962	75.0	70.7	− 6 44.1	65 8 18.7	1 59.7	− 26 16 39.2	− 8.6	D.	
41	. .	. .	. .	+ 0 26.0	32 30 28.5	35.6	+ 6 22 35.2	− 16.9	D.	
42	. .	. .	. .	− 0 7.0	71 49 56.9	2 48.2	− 32 59 5.8	− 6.7	D.	
43	29.962	74.7	70.5	− 4 6.4	S. 71 45 57.5	2 47.6	− 32 55 5.8	− 6.7	D.	
44	. .	. .	. .	− 1 36.2	N. 2 51 32.1	2.8	+ 41 45 14.1	− 22.2	D.	
45	. .	. .	. .	+ 0 52.4	S. 68 30 55.0	2 20.8	− 29 39 36.6	− 7.2	D.	
46	. .	. .	. .	− 0 56.0	59 24 8.6	} 1 33.4	− 20 31 52.5	. .	D.	
47	29.968	74.2	70.1	− 1 16.2	59 23 48.4					
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
49	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
50	30.002	79.8	78.7	+ 0 12.6	71 30 13.5	2 42.8	− 32 39 17.0	− 7.2	B.	
51	. .	. .	. .	+ 0 33.5	72 25 35.1	2 51.9	− 33 34 47.7	− 6.7	B.	
52	. .	. .	. .	− 0 52.0	75 14 9.0	3 25.5	− 36 23 55.2	− 6.0	B.	
53	30.006	79.0	77.7	+ 0 10.9	59 20 12.9	1 32.7	− 20 28 6.4	− 9.4	B.	
54	. .	. .	. .	+ 1 38.2	13 11 41.0	13.0	+ 25 41 45.2	− 17.1	B.	
55	. .	. .	. .	+ 5 30.9	65 20 31.9	1 59.8	− 26 28 52.4	− 7.0	B.	
56	30.005	78.2	76.1	− 1 45.0	71 48 19.8	2 46.4	− 32 57 27.0	− 5.7	B.	
57	. .	. .	. .	− 1 25.0	73 13 40.8	3 1.2	− 34 23 2.8	− 5.3	B.	
58	. .	. .	. .	− 0 44.3	73 49 22.2	3 8.1	− 34 58 51.0	− 5.1	B.	Small star following 30s; same declination.
59	. .	. .	. .	− 2 56.8	60 22 10.8	1 37.0	− 21 30 8.6	+ 6.5	B.	
60	. .	. .	. .	− 2 22.1	60 22 45.4	1 37.0	− 21 30 43.2	− 6.4	B.	
61	29.997	77.8	75.0	− 4 58.1	71 55 3.8	2 47.8	− 33 4 12.3	− 4.5	B.	
62	. .	. .	. .	− 1 55.7	58 13 3.9	1 29.2	− 19 20 53.8	− 5.3	B.	
63	. .	. .	. .	+ 0 42.9	43 45 44.6	53.0	− 4 52 58.4	− 5.8	B.	
64	30.001	77.5	74.8	− 5 55.1	77 54 6.0	4 12.2	− 39 4 38.9	− 3.8	B.	
65	. .	. .	. .	− 1 45.2	S. 47 3 14.9	59.5	− 8 10 35.1	− 4.3	B.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. July 13	1	Nadir	. .	.	. .	100 0 0.6	56.4	59.0	0.8	1.3	3.2	0.22	29.360	+ 0.647	. .
	2	B. A. C. 5564. . .	. .	3	IV–VI.	344 40 3.6	58.6	4.7	2.1	2.8	0.6	2.07	30.135	. .	30.783
	3	Saturn's ring, N. L. .	. .	5	I–IX.	339 25 4.6	0.8	7.9	5.4	4.1	2.9	4.28	33.549	. .	34.206
	4	Saturn's ring, S. L. .	. .	4	II–VIII.	" " "	"	"	"	"	"	"	32.888	. .	33.541
	5	31 Ophiuchi	. .	3	III–VII.	344 20 5.6	2.3	5.9	4.7	5.2	3.2	4.48	31.429	. .	32.081
	6	Anon. 17h 10m 3s .	. .	3	III–VII.	353 40 2.2	0.8	4.2	4.0	2.8	0.4	2.40	27.804	. .	28.468
	7	O. Arg. S. 16816 .	. .	3	III–VII.	339 45 4.0	1.0	7.6	6.3	3.3	3.0	4.20	33.240	. .	33.891
	8	Anon. 17h 27m 56s .	. .	4	III, V, VII, IX.	356 15 5.2	2.2	7.0	6.0	2.1	1.3	3.97	37.105	. .	37.772
	9	Anon. 17h 43m 16s .	. .	3	III–VII.	347 30 6.9	3.8	8.0	8.2	6.1	4.8	6.30	32.848	. .	33.500
	10	Anon. 18h 3m 4s . .	. .	3	III–VII.	358 15 4.0	3.2	8.0	8.2	4.0	0.0	4.57	36.575	. .	37.230
	11	Lacaille 7598. . .	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	36.629	. .	37.721
	12	Anon. 18h 12m 44s .	. .	3	III, V, IX.	347 15 5.3	2.2	8.7	6.5	4.1	4.2	5.17	28.792	. .	29.454
16	13	Moon, N. L. . . .	. .	5	I–IX.	327 4 62.8	54.8	58.6	57.0	61.1	63.1	59.57	28.526	+ 0.437	28.967
	14	Nadir	. .	.	. .	100 0 4.1	56.0	59.9	1.2	3.8	9.0	2.33	29.518	. .	. .
	15	26 Libræ	. .	3	III–VII.	336 10 6.0	57.0	3.8	58.3	2.8	4.3	2.03	31.572	. .	32.012
	16	o^2 Libræ, (2d *) . .	. .	3	IV–VI.	333 35 5.8	56.9	3.8	59.4	3.4	4.0	2.22	34.772	. .	35.210
	17	O. Arg. S. 14554. .	. .	3	III–VII.	340 55 6.9	59.1	5.0	4.0	4.2	5.9	4.18	30.370	. .	30.811
	18	Weisse (2) XV, 518 .	. .	3	III–VII.	279 45 7.0	57.7	3.0	2.3	6.0	8.8	4.13	34.049	. .	34.478
	19	τ^6 Serpentis	. .	3	III–VII.	302 25 7.4	57.2	3.2	1.3	6.2	8.4	3.95	27.447	. .	27.881
	20	δ Coronæ Borealis .	. .	3	III–VII.	292 25 8.1	0.2	4.1	3.8	8.2	11.3	5.95	29.808	. .	30.240
	21	B. A. C. 5296 . .	. .	3	III–VII.	348 35 8.0	1.0	7.0	4.7	5.2	6.2	5.35	32.144	. .	32.586
	22	51 Libræ, (2d * N.) . .	9.0	3	III–VII.	329 55 9.0	59.2	6.0	3.3	6.0	7.2	5.12	33.437	. .	33.876
	23	B. A. C. 5374 . .	6.0	3	III–VII.	347 55 9.0	2.0	8.2	7.0	5.5	9.0	6.78	28.727	. .	29.169
	24	Anon. 16h 26m 29s .	8.5	3	III–VII.	352 50 9.3	2.0	7.2	8.0	6.0	7.9	6.73	34.689	. .	35.132
	25	O. Arg. S. 15850. .	9.0	3	III–VII.	335 0 9.0	59.0	5.0	2.3	6.0	6.8	4.68	32.013	. .	32.453
	26	Saturn's ring, N. L. .	. .	5	I–IX.	339 25 9.0	1.2	9.0	5.9	6.0	7.3	6.40	34.740	. .	35.187
	27	Saturn's ring, S. L. .	. .	4	II–VIII.	" " "	"	"	"	"	"	"	34.083	. .	34.526
	28	B. A. C. 5672. . .	. .	3	III–VII.	349 40 7.2	59.4	6.0	5.0	3.8	5.1	4.42	35.675	. .	36.118
	29	Lacaille 7087. . .	. .	3	III–VII.	352 0 6.6	59.2	5.1	4.8	4.0	5.0	4.12	27.565	. .	28.008
	30	Lacaille 7133. . .	. .	3	IV–VI.	359 40 6.9	59.8	6.0	7.1	4.9	5.9	5.10	30.362	. .	30.802
	31	O. Arg. S. 16574 .	. .	3	III–VII.	348 40 6.0	58.9	5.7	3.2	3.0	4.0	3.47	28.558	. .	29.001
	32	Weisse (2) XVII, 486	. .	3	II, III, IV.	301 50 6.1	57.1	3.0	1.3	3.0	7.6	3.02	23.979	. .	24.397
	33	Weisse (2) XVII, 487	. .	3	V, VII, VIII.	" " "	"	"	"	"	"	"	26.953	. .	27.397
	34	Weisse (2) XVII, 523	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.146	. .	30.588
20	35	Nadir	. .	.	. .	100 0 1.0	59.8	2.0	4.7	3.3	5.4	2.70	29.464	+ 0.622	. .
	36	O. Arg. S. 15199 .	. .	3	III–VII.	340 5 2.9	59.6	5.6	4.0	2.3	0.8	2.53	37.617	. .	38.243
	37	O. Arg. S. 15227 .	. .	3	VI, VIII, IX.	" " "	"	"	"	"	"	"	34.256	. .	34.907
	38	Weisse (2) XVI, 788	. .	3	IV, V, VII.	285 5 2.9	58.4	4.5	5.2	5.8	5.9	3.78	28.435	. .	29.055
	39	B. A. C. 5567 . .	. .	4	III, V, VII, IX.	339 0 4.9	0.1	6.8	3.5	2.5	0.2	3.00	27.271	. .	27.907
	40	Saturn's ring, N. L. .	. .	3	III–VII.	339 25 2.5	59.8	6.2	4.8	2.8	0.1	2.70	35.452	. .	36.078
	41	Saturn's ring, S. L. .	. .	2	IV–VI.	" " "	"	"	"	"	"	"	35.006	. .	35.630
	42	Weisse XVI, 1046 .	. .	2	IV, VII.	327 55 1.9	0.1	3.5	2.6	2.0	59.2	1.55	24.792	. .	25.418
	43	Lacaille 7241. . .	. .	3	III–VII.	356 30 2.3	1.5	5.9	6.7	1.5	0.3	3.03	29.089	. .	29.718
	44	O. Arg. S. 16897. .	. .	3	III–VII.	341 45 3.3	1.8	7.0	5.9	4.3	0.5	3.80	28.177	. .	28.803
	45	Anon. 17h 35m 0s .	. .	3	III–VII.	346 50 3.1	0.7	6.3	5.8	2.7	1.1	3.28	25.524	. .	26.151
	46	O. Arg. S. 17281 .	. .	3	III–VII.	344 34 60.0	56.4	61.6	60.7	60.1	57.3	59.35	28.124	. .	28.751
	47	Anon. 17h 50m 46s .	. .	3	III–VII.	350 15 6.0	3.5	7.0	8.2	3.1	3.5	5.23	26.418	. .	27.046
	48	Moon, N. L. . . .	. .	9	I–IX.	339 35 7.0	2.9	9.4	8.9	6.1	3.5	6.30	26.869	. .	27.499
	49	B. A. C. 6199 . .	. .	3	III–VII.	344 30 3.7	0.3	6.0	4.1	2.9	0.3	2.88	28.301	. .	28.928
	50	Anon. 18h 22m 38s .	. .	3	III–VII.	351 15 3.7	1.0	5.9	5.5	3.7	1.0	3.30	32.871	. .	33.499
	51	B. A. C. 6321 . .	. .	3	III–VII.	348 40 5.8	4.8	8.9	8.0	5.0	3.5	6.00	31.177	. .	31.805
	52	Anon. 18h 42m 13s .	. .	3	III–VII.	356 15 5.0	3.3	7.6	8.6	3.5	1.0	4.83	32.308	. .	32.937
	53	O. Arg. S. 18831 .	. .	3	III–VII.	347 10 6.2	3.4	9.0	8.6	4.3	4.2	5.95	31.589	. .	32.216
	54	O. Arg. S. 19083. .	. .	3	III–VII.	335 20 1.3	58.0	3.6	3.0	1.9	59.8	1.27	33.748	. .	34.373
	55	23 Aquilæ	. .	3	III–VII.	318 5 3.5	59.5	2.2	2.0	2.0	1.3	1.75	35.675	. .	36.297
	56	β Cygni, (1st * N.) .	. .	3	III–VII.	291 10 2.5	57.9	1.5	2.0	4.0	2.3	1.70	25.507	. .	26.124
	57	Anon. 19h 36m 23s .	. .	3	III–VII.	310 50 4.9	0.1	4.4	2.6	4.0	3.1	3.18	30.038	. .	30.659
	58	O. Arg. S. 19998. .	. .	3	III–VII.	345 25 2.9	59.5	3.9	3.1	1.5	59.0	1.65	36.640	. .	37.267
	59	Weisse XIX, 1320 .	. .	3	IV, V, VII.	333 10 1.9	0.0	6.0	4.0	3.9	0.0	2.63	27.664	. .	28.290
	60	Lacaille 8365. . .	. .	3	III–VII.	351 34 59.1	58.9	63.4	63.2	59.5	55.6	59.95	33.159	. .	33.787
	61	O. Arg. S. 20533. .	. .	3	III–VII.	340 15 6.9	3.7	7.9	8.7	6.2	3.1	6.08	35.739	. .	36.365
21	62	O. Arg. S. 15834. .	. .	3	III–VII.	343 0 5.3	2.6	8.0	6.5	5.5	1.8	4.95	28.649	+ 0.618	29.271
	63	Saturn N. L. . . .	. .	5	I–IX.	339 20 5.4	3.6	8.8	7.6	5.0	3.6	5.67	26.371	. .	26.998
	64	Saturn S. L. . . .	. .	4	II–VIII.	" " "	"	"	"	"	"	"	25.650	. .	26.274

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
2	. .	. .	. .	− 0 24.5	S. 64 39 37.5	1 55.8	− 25 47 54.9	− 8.1	B.	
3	30.020	79.5	74.5	− 2 11.8	59 22 52.4	1 32.6	− 20 30 56.2	. .	B.	
4	. .	. .	. .	− 1 51.0	59 23 13.2					
5	. .	. .	. .	− 1 5.2	64 18 59.3	1 55.0	− 25 27 15.0	− 7.5	B.	
6	30.025	78.8	73.6	+ 0 48.0	73 40 50.4	3 7.4	− 34 50 18.5	− 5.4	B.	
7	. .	. .	. .	− 2 2.0	59 43 2.2	1 34.9	− 20 50 57.9	− 7.8	B.	
8	. .	. .	. .	− 4 3.8	76 11 0.2	3 41.8	− 37 21 2.7	− 4.8	B.	
9	30.022	78.4	73.6	− 1 49.7	67 28 16.6	2 13.1	− 28 36 50.4	− 5.9	B.	
10	. .	. .	. .	− 3 46.8	78 11 17.8	4 18.9	− 39 21 57.4	− 4.1	B.	
11	. .	. .	. .	− 3 49.7	78 11 14.9	4 18.9	− 39 21 54.6	− 4.1	B.	
12	30.022	77.9	73.4	+ 0 17.1	67 15 22.3	2 11.8	− 28 23 54 8	− 5.2	B.	
13	29.930	89.0	91.2	+ 0 32.3	47 5 31.9	−25 50.8	− 7 46 1.8	. .	D.	
14	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
15	29.934	88.0	88.7	− 1 3.0	56 8 59.0	1 20.2	− 17 16 39.9	− 11.9	D.	
16	. .	. .	. .	− 2 43.3	53 32 18.9	1 12.8	− 14 39 52.5	− 12.6	D.	
17	. .	. .	. .	− 0 25.4	S. 60 54 38.8	1 36.6	− 22 2 36.1	− 10.2	D.	
18	. .	. .	. .	− 2 20.4	N. 0 17 16.2	0.3	+ 39 10 55.8	− 27.5	D.	
19	29.935	88.0	87.5	+ 1 6.3	S. 22 26 10.3	22.3	+ 16 27 6.7	− 21.4	D.	
20	. .	. .	. .	− 0 7.5	12 24 58.4	11.9	+ 26 28 28.9	− 23.5	D.	
21	. .	. .	. .	− 1 21.1	68 33 44.3	2 16.8	− 29 42 21.8	− 7.5	D.	
22	. .	. .	. .	− 2 1.5	49 53 3.6	1 4.2	− 11 0 28.6	− 12.7	D.	
23	. .	. .	. .	+ 0 26.0	67 55 32.8	2 12.7	− 29 4 6.2	− 7.5	D.	
24	29.936	87.0	83.8	− 2 40.9	72 47 25.8	2 53.3	− 33 56 39.9	− 6.0	D.	
25	. .	. .	. .	− 1 16.9	54 58 47.8	1 17.4	− 16 6 26.0	− 10.2	D.	
26	. .	. .	. .	− 2 42.6	59 22 23.8	1 30.8	− 20 30 25.7	. .	D.	
27	. .	. .	. .	− 2 21.9	59 22 44.5					
28	. .	. .	83.3	− 3 11.9	69 36 52.6	2 25.2	− 30 45 38.5	− 6.4	D.	
29	. .	. .	. .	+ 1 2.3	72 1 6.5	2 45.9	− 33 10 13.1	− 5.7	D.	
30	29.950	86.3	82.7	− 0 25.1	79 39 40.0	4 48.4	− 40 50 49.2	− 4.1	D.	
31	. .	. .	. .	+ 0 31.3	68 40 34.8	2 18.7	− 29 49 14.2	− 6.2	D.	Star precedes 30s.
32	. .	. .	. .	+ 2 55.2	21 52 58.3	21.9	+ 17 0 19.0	− 15.1	D.	
33	. .	. .	. .	+ 1 21.5	21 51 24.5	21.9	+ 17 1 52.8	− 15.1	D.	
34	. .	. .	81.9	− 0 18.4	21 49 44.6	21.9	+ 17 3 32.8	− 15.0	D.	
35	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
36	. .	. .	. .	− 4 18.6	60 20 43.9	1 36.5	− 21 28 41.2	− 9.6	B.	
37	29.896	78.0	75.8	− 2 33.8	60 22 28.7	1 36.6	− 21 30 26.1	− 9.6	B.	
38	29.894	78.0	75.4	+ 0 29.6	5 5 33.4	4.9	+ 33 48 1.0	− 22.6	B.	
39	. .	. .	. .	+ 1 5.5	59 1 8.5	1 31.7	− 20 9 0.9	− 9.1	B.	
40	. .	. .	. .	− 3 10.6	59 21 52.1	1 32.5	− 20 20 52.4	. .	B.	
41	29.895	77.8	75.0	− 2 56.6	59 22 6.1					
42	. .	. .	. .	+ 2 23.3	47 57 24.9	1 1.2	− 9 4 46.8	− 1.2	B.	
43	. .	. .	. .	+ 0 8.8	76 30 11.8	3 45.6	− 37 40 18.1	− 4.5	B.	
44	29.890	77.4	74.5	+ 0 37.5	61 45 41.3	1 42.5	− 22 53 44.5	− 7.0	B.	
45	. .	. .	. .	+ 2 0.4	66 52 3.7	2 8.5	+ 28 0 33.0	− 5.7	B.	
46	. .	. .	. .	+ 0 39.1	64 35 38.5	1 55.7	− 25 43 54.9	− 5.9	B.	
47	. .	. .	. .	+ 1 32.4	70 16 37.7	2 32.8	− 31 25 31.2	− 4.7	B.	
48	29.873	77.4	74.5	+ 1 18.3	59 36 24.6	−31 41.7	− 20 11 3.7	. .	B.	
49	. .	. .	. .	+ 0 33.6	64 30 36.4	1 56.4	− 25 38 53.6	− 5.2	B.	
50	29.872	72.0	74.3	− 1 49.7	71 13 13.6	2 40.9	− 32 22 15.2	− 3.9	B.	
51	. .	. .	. .	− 0 56.6	68 39 9.4	2 20.4	− 29 47 50.6	− 4.2	B.	
52	29.870	72.0	74.0	− 1 32.0	76 13 32.8	3 41.2	− 37 23 34.8	− 3.1	B.	
53	. .	. .	. .	− 1 9.4	67 8 56.5	2 10.4	− 28 17 27.7	− 4.1	B.	
54	. .	. .	. .	− 2 17.1	55 17 44.2	1 19.7	− 16 25 24.6	− 4.8	B.	
55	29.864	72.0	73.5	− 3 17.5	38 1 44.2	43.3	+ 0 51 11.7	− 5.3	B.	
56	. .	. .	. .	+ 2 1.3	11 12 3.0	11.0	+ 27 41 25.3	− 4.8	B.	
57	. .	. .	. .	− 0 20.7	30 49 42.4	33.0	+ 8 3 23.8	− 3.7	B.	
58	. .	. .	. .	− 3 48.0	65 21 13.7	2 0.0	− 26 29 34.4	− 2.7	B.	
59	29.850	71.6	73.0	+ 0 53.5	53 10 56.2	1 13.8	− 14 18 30.8	− 2.6	B.	Large star near.
60	. .	. .	. .	− 1 58.7	71 33 1.2	2 44.2	− 32 42 6.2	− 2.1	B.	
61	29.850	71.4	73.0	− 3 19.6	60 11 46.5	1 36.4	− 21 19 43.6	− 1.5	B.	
62	. .	. .	. .	+ 0 22.8	63 0 27.8	1 49.7	− 24 8 38.2	− 8.2	B.	
63	. .	. .	. .	+ 1 33.9	59 21 39.6	1 33.7	− 20 29 45.4	. .	B.	
64	30.052	74.5	68.8	+ 1 56.6	S. 59 22 2.3					

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. July 21	1	O. Arg. S. 16233. .	. .	3	III–VII.	339 15 6.0	4.3	8.8	6.5	4.7	2.5	5.47	27.567	+ 0.618	28.189
	2	Lacaille 7160. .	. .	3	III–VII.	357 35 4.0	4.0	8.2	8.7	4.8	oblit.	5.28	41.288	. .	41.914
	3	Anon. 17ʰ 8ᵐ 9ˢ .	. .	2	III–VII.	354 10 4.7	3.0	7.3	7.2	4.5	1.9	4.77	29.276	. .	29.904
	4	O. Arg. S. 16749. .	. .	3	III–VII.	347 25 5.9	3.9	8.9	8.5	4.4	4.0	5.93	33.092	. .	33.715
	5	O. Arg. S. 16966. .	. .	3	III–VII.	337 0 6.0	2.8	8.1	7.0	5.2	3.5	5.43	26.985	. .	27.606
	6	Anon. 17ʰ 35ᵐ 1ˢ .	. .	3	III–VII.	346 50 6.1	3.3	10.8	8.3	6.0	4.8	6.55	25.786	. .	26.409
	7	O. Arg. S. 17412. .	. .	3	III–VII.	344 0 0.1	59.0	3.5	4.1	1.0	58.5	1.03	31.214	. .	31.837
	8	Lacaille 7598. .	. .	3	III–VII.	358 15 1.0	1.0	5.1	6.2	1.3	57.1	1.95	36.707	. .	37.333
	9	Anon. 18ʰ 13ᵐ 2ˢ .	. .	3	III–VII.	336 40 0.3	57.7	3.6	1.5	1.0	59.2	0.55	29.021	. .	29.642
	10	Nadir	. .	.	. .	100 0 0.6	2.8	4.1	10.0	5.6	5.8	4.72	29.511	. .	. .
	11	Moon, N. L. . .	. .	7	II–VIII.	340 0 6.0	4.9	9.2	10.5	5.9	2.6	6.52	25.117	. .	25.740
	12	Nadir	. .	.	. .	100 0 7.3	9.0	8.2	16.8	10.5	11.1	10.48	29.728	. .	. .
22	13	Nadir	. .	.	. .	100 0 4.1	2.9	2.8	9.4	6.8	6.3	5.38	29.538	+ 0.634	. .
	14	Weisse XVI, 544 .	. .	3	III–VII.	327 30 4.4	1.0	4.1	3.5	4.0	0.3	2.88	30.353	. .	30.988
	15	Saturn, N. L.. .	. .	5	I–IX.	339 25 5.2	3.9	9.3	7.7	5.5	2.1	5.63	36.283	. .	36.862
	16	Saturn, S. L. . .	. .	4	II–VIII.	" " "	"	"	"	"	"	"	35.479	. .	36.119
	17	O. Arg. S. 16213 .	. .	3	III–VII.	339 10 8.7	7.4	8.4	11.1	8.9	6.0	8.42	34.621	. .	35.259
	18	O. Arg. S. 16291 .	. .	3	III, V, IX.	" " "	"	"	"	"	"	"	28.807	. .	29.453
	19	38 Ophiuchi . . .	. .	3	III–VII.	345 20 3.8	0.8	6.0	4.9	3.4	0.0	3.15	28.726	. .	29.365
	20	B. A. C. 5897. .	. .	3	III–VII.	350 15 1.9	59.5	2.7	4.8	0.5	58.7	1.35	26.795	. .	27.435
	21	Lacaille 7395. .	. .	2	V, VII.	352 20 3.1	3.2	6.0	8.2	2.3	58.5	3.55	35.776	. .	36.422
	22	73 Ophiuchi . . .	. .	3	III–VII.	314 50 2.4	59.6	3.0	4.1	4.3	2.3	2.62	30.762	. .	31.395
	23	Moon, N. L. . .	. .	3	I, II, III.	339 20 3.7	4.0	8.8	8.3	5.1	1.0	5.15	31.316	. .	32.013
	24	Moon, S. L. . .	. .	3	VII, VIII, IX.	339 49 59.0	61.1	64.6	65.1	60.1	55.8	60.95	29.999	. .	30.593
27	25	Nadir	. .	.	. . .	99 59 53.1	53.8	54.0	57.3	57.2	58.2	55.60	29.236	+ 0.623	. .
	26	B. A. C. 5968 .	. .	3	III–VII.	351 0 7.1	5.0	8.0	10.0	6.8	4.6	6.92	42.431	. .	43.060
	27	Anon. 17ʰ 42ᵐ 47ˢ	. .	2	IV, V.	347 25 2.1	1.3	5.0	6.0	3.4	2.1	3.32	23.128	. .	23.748
	28	Anon. 17ʰ 43ᵐ 3ˢ	. .	3	V, VI, VIII.	" " "	"	"	"	"	"	"	26.883	. .	27.521
	29	70 Ophiuchi . . .	. .	3	V, VI, VII.	316 20 2.3	57.0	1.6	59.7	3.1	2.0	0.95	27.800	. .	28.430
	30	B. A. C. 6319. .	. .	3	IV–VI.	348 55 2.4	1.1	4.6	4.7	2.3	59.8	2.48	32.568	. .	33.193
	31	B. A. C. 6400. .	. .	3	III–VII.	341 55 3.0	59.1	5.0	4.2	3.7	0.1	2.52	36.397	. .	37.024
	32	β Lyræ, (2d *) .	. .	2	VII, IX.	285 45 1.9	58.2	3.1	4.6	4.2	6.4	3.07	36.717	. .	37.339
	33	B. A. C. 6505. .	. .	3	III–VII.	344 20 4.5	1.3	6.4	4.6	5.6	2.1	3.98	35.554	. .	36.182
	34	ρ^2 Sagittarii . .	. .	3	III–VII.	337 25 4.6	0.0	5.5	4.0	3.3	3.0	3.40	29.673	. .	30.299
	35	O. Arg. S. 19665. .	. .	3	III–VII.	338 30 2.5	59.0	5.1	3.3	2.4	59.5	1.97	26.625	. .	27.251
	36	B. A. C. 6855 .	. .	3	III–VII.	302 45 1.3	58.6	4.2	3.9	3.6	2.8	2.40	30.519	. .	31.139
29	37	Nadir	. .	.	. .	100 0 0.0	58.8	0.8	4.0	4.2	4.2	2.00	29.428	+ 0.636	. .
	38	Saturn, N. L.. .	. .	5	I–IX.	339 19 60.1	56.1	62.9	59.5	59.5	59.4	59.58	27.050	. .	27.695
	39	Saturn, S. L. . .	. .	4	II–VIII.	" " "	"	"	"	"	"	"	26.376	. .	27.018
	40	O. Arg. S. 16240. .	. .	3	III–VII.	345 44 60.9	56.5	62.0	58.7	59.1	57.4	59.10	27.581	. .	28.221
	41	O. Arg. N. 17136 .	. .	3	V, VI, VII.	341 25 5.6	2.3	8.6	12.2	8.8	11.5	8.17	29.808	. .	30.423
	42	B. A. C. 5960 .	. .	3	III–VII.	351 0 3.4	0.1	4.8	6.0	2.6	0.3	2.87	32.633	. .	33.275
	43	Lacaille 7430. .	. .	3	III–VII.	353 5 3.8	1.0	5.1	5.6	3.9	2.2	3.60	27.502	. .	28.144
	44	Anon. 17ʰ 54ᵐ 50ˢ	. .	3	III–VII.	340 20 5.0	4.2	6.1	6.9	5.5	4.6	5.38	25.419	. .	26.059
	45	Anon. 18ʰ 5ᵐ 25ˢ	. .	3	III–VII.	353 30 4.3	3.1	7.4	6.9	3.4	1.8	4.48	33.102	. .	33.745
	46	Anon. 18ʰ 20ᵐ 11ˢ	. .	3	III–VII.	347 45 7.4	3.2	9.2	7.9	5.5	4.8	6.33	34.153	. .	34.799
	47	O. Arg. S. 18489. .	. .	3	III–VII.	337 20 6.8	4.3	8.7	7.3	6.8	6.3	6.70	26.609	. .	27.248
	48	Lacaille 7901. .	. .	2	III–VII.	355 20 3.1	2.8	6.0	5.7	2.7	59.3	3.27	36.039	. .	36.686
	49	B. A. C. 6504. .	. .	3	III–VII.	340 35 2.4	0.9	4.1	5.0	3.5	58.6	2.42	29.441	. .	30.081
	50	Anon. 19ʰ 16ᵐ 47ˢ	. .	3	III–VII.	327 20 1.7	59.4	3.6	2.4	3.1	0.9	1.85	28.592	. .	29.229
	51	α Vulpeculæ . .	. .	3	III–VII.	294 30 3.2	59.0	5.5	4.1	5.0	4.8	3.60	31.342	. .	31.975
	52	Lacaille 8197. .	. .	3	III–VII.	360 49 60.0	61.3	63.0	65.2	59.7	56.9	61.02	42.912	. .	43.557
	53	Lalande 37873 .	7.0	3	III–VII.	338 34 59.4	58.1	62.1	61.5	59.6	56.3	59.40	39.113	. .	39.752
	54	15 Vulpeculæ . .	. .	3	IV–VI.	291 30 2.3	58.0	3.0	3.5	3.4	2.2	2.07	30.209	. .	30.843
	55	τ^1 Capricorni . .	. .	3	III–VII.	334 30 4.3	1.9	5.6	5.9	2.8	1.7	3.70	33.328	. .	33.967
	56	O. Arg. S. 20857. .	. .	3	III, V, IX.	341 25 3.9	3.0	7.8	7.8	7.0	0.2	4.45	29.523	. .	30.172
Aug. 2	57	Lacaille 6924. .	. .	3	IV–VI.	354 20 4.0	0.8	4.2	4.2	3.8	2.0	3.17	37.164	+ 0.495	37.661
	58	Weisse XVI, 780 .	. .	3	IV–VI.	317 35 4.0	58.9	1.0	0.0	3.9	3.2	1.83	32.960	. .	33.455
	59	Lacaille 7245. .	. .	3	III–VII.	355 55 4.6	2.6	6.0	8.2	4.0	3.7	4.85	29.031	. .	29.533
	60	Weisse XVII, 387 .	7.0	3	III–VII.	324 40 4.8	0.9	3.0	3.8	6.0	5.1	3.93	27.311	. .	27.807
	61	B. A. C. 5961. .	. .	3	III, V, VIII.	347 45 4.9	0.9	5.4	6.0	4.0	3.8	4.17	34.951	. .	35.451
	62	Lacaille 7430. .	. .	3	III–VII.	353 10 5.0	2.0	6.0	8.3	6.0	4.5	5.30	37.169	. .	37.671
	63	Weisse XVII, 905 .	. .	3	III–VII.	326 45 4.8	1.0	4.2	3.9	7.0	4.3	4.20	29.392	. .	29.888
	64	O. Arg. S. 17469. .	. .	3	III–VII.	348 25 4.6	1.9	6.0	5.1	4.0	3.1	4.12	27.730	. .	28.230

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 0 56.7	S. 59 16 2.2	1 34.3	− 20 23 57.2	− 8.6	B.	
2	. .	. .	. .	− 6 13.2	77 28 52.0	4 7.6	− 38 39 20.4	− 4.1	B.	Corr. −0″.94 applied to mean of A, B, C, D.
3	. .	. .	. .	+ 0 3.0	74 10 7.8	3 15.6	− 35 19 44.2	− 4.8	B.	
4	30.054	73.6	67.2	− 1 56.5	67 23 9.5	2 14.3	− 28 31 44.5	− 6.1	B.	
5	. .	. .	. .	+ 1 14.9	57 1 20.4	1 26.7	− 18 9 7.8	− 8.1	B.	
6	. .	. .	. .	+ 1 52.4	66 51 58.9	2 10.6	− 28 0 30.3	− 5.8	B.	
7	30.058	72.8	66.0	− 0 57.6	63 59 3.5	1 55.2	− 25 7 19.4	− 6.0	B.	
8	. .	. .	. .	− 3 50.1	78 11 11.9	4 23.1	− 39 21 55.8	− 3.2	B.	Star preceding 20ˢ.
9	. .	. .	. .	+ 0 11.2	56 40 11.7	1 25.7	− 17 47 58.2	− 6.5	B.	
10	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	This nadir was taken in a hurried way; another was taken after the transit of the moon.
11	30.050	71.5	63.5	+ 2 13.3	60 2 19.8	−31 32.2	− 20 37 8.3	. .	B.	
12	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	Giving 1st nadir observation, weight 1; 2d do., 2, nadir corr. =0″.618.
13	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
14	30.127	74.0	69.5	− 0 30.9	47 29 31.9	1 1.3	− 8 36 54.0	− 12.6	B.	
15	. .	. .	. .	− 3 35.2	59 21 30.4	1 33.8	− 20 29 36.7	. .	B.	
16	30.128	74.0	69.5	− 3 11.9	59 21 53.7					
17	. .	. .	. .	− 2 44.9	59 7 23.5	1 33.9	− 20 15 18.2	− 8.6	B.	
18	. .	. .	. .	+ 0 17.1	59 10 25.6	1 34.1	− 20 18 20.4	− 8.5	B.	
19	. .	. .	. .	+ 0 19.9	65 20 23.0	2 2.1	− 26 28 45.8	− 6.7	B.	Did not see first star.
20	30.136	74.0	68.2	+ 1 20.3	70 16 21.6	2 35.8	− 31 25 18.1	− 5.3	B.	
21	. .	. .	. .	− 3 21.1	72 16 42.4	2 54.5	− 33 25 57.7	− 4.7	B.	
22	30.136	72.0	66.5	− 0 43.7	34 54 18.9	39.5	+ 3 58 40.9	− 10.5	B.	
23	30.136	70.0	64.1	− 1 3.1	59 19 2.1	−46 7.4	− 19 54 29.0	. .	B.	
24	. .	. .	. .	− 0 18.6	59 49 42.4	−46 20.6				
25	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
26	30.000	77.0	72.3	− 6 49.2	70 53 17.7	2 39.2	− 32 2 17.6	− 4.5	B.	
27	. .	. .	. .	+ 3 15.5	67 28 18.8	2 13.3	− 28 36 52.9	− 5.1	B.	
28	. .	. .	. .	+ 1 17.6	67 26 20.9	2 13.1	− 28 34 54.8	− 5.1	B.	
29	30.000	76.8	72.5	+ 1 51.7	36 21 52.7	41.0	+ 2 31 5.6	− 10.9	B.	Evidently a double star, but separation not perfectly defined.
30	. .	. .	72.4	− 1 40.1	68 53 22.4	2 23.2	− 30 2 6.4	− 3.7	B.	
31	. .	. .	. .	− 3 40.3	61 51 22.2	1 43.8	− 22 59 26.7	− 4.6	B.	
32	. .	. .	. .	− 3 50.2	5 41 12.8	10.5	+ 33 12 15.9	− 10.8	B.	
33	30.012	76.2	71.8	− 3 13.9	64 16 50.1	1 55.2	− 25 25 6.0	− 3.7	B.	
34	. .	. .	. .	− 0 9.4	57 24 54.0	1 27.0	− 18 32 41.8	− 4.0	B.	
35	. .	. .	. .	+ 1 26.0	58 31 28.0	1 30.9	− 19 39 19.6	− 3.4	B.	
36	30.022	75.9	71.2	− 0 35.7	22 44 26.7	23.4	+ 16 8 49.1	− 3.6	B.	Bad night; frequent obscuration by clouds.
37	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
38	. .	. .	. .	+ 1 12.2	59 21 11.7	1 32.4	− 20 29 15.5	. .	B.	
39	29.982	78.5	74.8	+ 1 33.3	59 21 32.9					
40	. .	. .	. .	+ 0 55.7	S. 65 45 54.8	2 2.5	− 26 54 18.1	− 6.6	B.	
41	. .	. .	. .	− 0 13.2	N. 38 35 5.1	44.3	+ 77 29 28.6	− 22.5	B.	
42	29.994	77.2	73.0	− 1 42.7	S. 70 58 20.2	2 39.7	− 32 7 20.6	− 4.4	B.	
43	. .	. .	. .	+ 0 58.1	73 6 1.7	3 0.9	− 34 15 23.3	− 3.8	B.	
44	. .	. .	. .	+ 2 3.3	60 22 8.7	1 37.6	− 21 30 7.1	− 6.3	B.	
45	30.010	76.2	71.3	− 1 57.4	73 28 7.1	3 5.5	− 34 37 33.3	− 2.9	B.	
46	. .	. .	. .	− 2 30.4	67 42 35.9	2 15.4	− 28 51 12.0	− 4.0	B.	Very faint.
47	. .	. .	. .	+ 1 26.1	57 21 32.8	1 27.1	− 18 29 20.7	− 5.6	B.	
48	30.016	75.5	69.5	− 3 29.8	75 16 33.5	3 29.5	− 36 26 23.8	− 2.2	B.	
49	30.011	74.0	69.0	− 0 2.5	60 34 59.9	1 39.0	− 21 42 59.6	− 4.2	B.	
50	. .	. .	. .	+ 24.1	47 20 26.0	1 0.8	− 8 27 47.5	− 5.0	B.	
51	. .	. .	. .	− 1 1.9	14 29 1.7	14.5	+ 24 24 23.0	− 6.9	B.	
52	30.006	74.0	68.7	− 7 5.8	80 42 5.2	5 29.0	− 41 54 44.9	− 0.9	B.	
53	. .	. .	. .	− 5 6.1	58 29 53.3	1 31.3	− 19 37 45.4	− 2.6	B.	
54	. .	. .	68.0	− 0 26.4	11 29 35.7	11.4	+ 27 23 52.1	− 3.7	B.	
55	30.020	78.0	67.0	− 2 4.3	54 27 59.4	1 18.6	− 15 35 38.8	− 1.2	B.	
56	. .	. .	66.9	− 0 5.4	61 24 59.0	1 42.9	− 22 33 2.7	− 2.8	B.	
57	30.124	77.5	77.4	− 4 0.3	74 16 2.8	3 13.7	− 35 25 37.3	− 4.7	D.	
58	. .	. .	. .	− 1 48.3	37 33 13.5	42.6	+ 1 19 43.2	− 15.6	D.	
59	30.124	77.3	76.4	+ 0 14.6	75 55 19.5	3 37.2	− 37 5 17.4	− 3.4	D.	
60	. .	. .	. .	+ 1 8.7	44 41 12.6	54.9	− 5 48 28.2	− 11.6	D.	
61	. .	. .	76.0	− 2 50.9	67 42 13.3	2 14.5	− 28 50 48.5	− 5.2	D.	
62	. .	. .	. .	− 4 0.7	73 6 4.6	3 0.5	− 34 15 25.9	− 3.6	D.	
63	. .	. .	. .	+ 0 3.5	46 45 7.7	59.0	− 7 52 27.5	− 10.0	D.	
64	. .	. .	75.5	+ 0 55.4	S. 68 25 59.5	2 19.6	− 29 34 39.9	− 4.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Aug. 2	1	Lacaille 7588. . .	. .	3	III–VII.	351 35 4.8	3.1	6.0	8.0	5.9	3.8	5.27	30.065	+ 0.495	30.566
	2	17 Sagittarii	. .	3	III–VII.	339 30 4.0	0.7	5.0	6.0	4.3	3.0	3.83	35.306	. .	35.805
	3	Nadir	. .	.	. .	100 0 3.1	1.8	2.2	8.0	7.0	8.0	5.02	29.548	. .	. .
3	4	Nadir	. .	.	. .	100 0 3.5	0.7	0.7	3.5	5.1	6.0	3.25	29.468	+ 0.636	. .
	5	Anon. $16^h 55^m 59^s$.	. .	3	III–VII.	342 55 4.8	0.5	5.1	1.1	4.7	3.1	3.22	23.593	. .	24.233
	6	B. A. C. 5919. . .	. .	3	III–VII.	316 5 6.8	59.3	2.3	1.0	5.5	7.2	3.68	32.837	. .	33.473
	7	Rumker 6208 . .	. .	2	V, VII.	273 45 4.1	0.0	4.1	4.3	7.5	8.9	4.82	28.010	. .	28.643
6	8	ε Scorpii	. .	3	IV–VI.	352 55 5.8	6.0	10.0	15.0	6.0	2.8	7.60	32.138	+ 0.503	32.613
	9	Weisse XVI, 1001 .	8.5	3	III–VII.	322 55 6.0	5.9	8.5	12.2	6.8	4.0	7.23	31.700	. .	32.174
	10	Lacaille 7160. . .	. .	3	III–VII.	357 30 6.0	7.8	10.8	16.7	6.0	2.0	8.22	32.012	. .	32.493
	11	Anon. $17^h 10^m 3^s$.	7.0	3	III–VII.	353 40 5.4	7.3	10.0	15.0	6.0	2.8	7.75	28.179	. .	28.659
	12	B. A. C. 5888 . .	. .	3	III–VII.	331 15 5.0	5.1	7.9	11.8	5.9	2.8	6.42	27.854	. .	28.329
	13	B. A. C. 5916 . .	. .	3	IV–VI.	348 25 4.8	6.0	9.0	12.8	4.0	0.8	6.23	31.032	. .	31.507
	14	Lacaille 7406. . .	. .	3	III–VII.	357 35 4.0	7.0	10.0	15.1	5.0	oblit.	6.90	32.127	. .	32.608
	15	Lacaille 7443. . .	. .	3	IV–VI.	357 45 3.3	6.0	8.0	14.0	3.7	59.8	5.80	28.800	. .	29.275
	16	O. Arg. S. 17354. .	9.0	3	IV–VI.	345 55 2.7	3.9	6.4	8.0	2.0	58.1	3.52	35.579	. .	36.042
	17	O. Arg. S. 17361. .	9.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	36.606	. .	37.083
	18	O. Arg. S. 17503. .	. .	3	III–VII.	334 30 4.0	5.1	7.0	10.8	4.0	1.0	5.32	28.356	. .	28.832
	19	O. Arg. S. 17648. .	. .	3	III–VII.	340 5 3.0	4.2	7.0	11.0	3.8	59.2	4.70	30.417	. .	30.894
	20	O. Arg. S. 17796. .	. .	3	III–VII.	339 20 3.0	5.0	7.8	11.8	3.3	0.0	5.15	31.902	. .	32.379
	21	Anon. $18^h 13^m 2^s$.	. .	3	III–VII.	336 40 2.5	3.0	5.4	7.8	2.0	59.0	3.28	29.319	. .	29.795
	22	Anon. $18^h 20^m 11^s$.	8.5	3	III–VII.	347 45 4.2	6.0	9.1	13.2	2.6	2.0	6.18	34.289	. .	34.767
	23	O. Arg. N. 18555 .	. .	3	I–5.	246 45 4.4	7.6	2.6	19.7	10.0	8.3	8.77	30.960	. .	31.424
	24	O. Arg. S. 18883. .	. .	3	III–VII.	347 45 3.1	6.0	9.2	13.8	3.0	0.9	6.00	26.729	. .	27.207
	25	Anon. $18^h 55^m 39^s$.	9.0	3	III–VII.	326 30 3.8	5.8	7.1	10.2	5.7	1.1	5.62	29.529	. .	30.003
	26	Lacaille 8041. . .	. .	3	III–VII.	356 0 3.0	7.0	9.0	14.0	3.3	0.0	6.00	29.641	. .	30.121
	27	Dorpat 2497, (1st *).	. .	4	I–IX.	313 35 3.0	3.0	5.0	9.0	5.1	1.0	4.35	35.601	. .	36.071
	28	Dorpat 2497, (2d *) .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	36.536	. .	37.009
	29	Nadir	. .	.	. .	100 0 2.1	6.3	6.0	14.8	6.8	4.7	6.78	29.624	. .	. .
9	30	Nadir	. .	.	. .	100 0 1.7	1.0	1.2	6.1	5.1	5.7	3.47	29.488	+ 0.503	. .
	31	24 Scorpii	. .	3	III–VII.	336 19 61.4	58.8	59.0	60.0	60.0	59.0	59.70	26.902	. .	27.408
	32	Anon. $16^h 47^m 21^s$.	. .	3	IV–VI.	355 50 3.0	4.2	5.2	7.8	4.1	1.0	4.22	32.675	. .	33.180
	33	Anon. $16^h 47^m 30^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	24.528	. .	25.033
	34	O. Arg. N. 16908 .	. .	3	IV–VI.	259 35 3.0	1.0	6.0	9.8	7.2	8.0	5.83	32 440	. .	32.938
	35	Weisse (2) XVII, 552	7.0	3	IV–VI.	301 50 3.1	2.8	4.1	5.0	6.0	5.0	4.33	27.771	. .	28.273
	36	Weisse (2) XVII, 596	8.0	3	III–VII.	" " "	"	"	"	"	"	"	33.509	. .	34.009
	37	Anon. $17^h 25^m 5^s$.	. .	1	IV.	351 20 3.7	3.1	5.8	7.8	5.0	1.6	4.50	26.470	. .	26.968
	38	Anon. $17^h 25^m 51^s$.	. .	1	VI.	" " "	"	"	"	"	"	"	31.903	. .	32.417
	39	Anon. $17^h 25^m 58^s$.	. .	1	IX.	" " "	"	"	"	"	"	"	38.322	. .	38.882
	40	O. Arg. S. 17114. .	9.0	3	III–VII.	338 20 4.0	2.2	4.2	5.8	3.3	0.9	3.40	32.408	. .	32.914
	41	Anon. $17^h 56^m 39^s$.	8.0	3	III–VII.	342 30 3.0	1.4	4.4	6.0	4.0	0.0	3.13	33.950	. .	34.457
	42	Anon. $18^h 3^m 6^s$ . .	9.3	4	I, III, VII, IX.	336 5 2.7	2.0	4.5	4.0	3.1	0.9	2.87	35.588	. .	36.101
	43	Anon. $18^h 3^m 7^s$ . .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	35.322	. .	35.826
	44	Anon. $18^h 13^m 38^s$.	8.0	2	II, IV.	345 20 2.3	2.7	4.8	5.0	4.0	0.1	3.15	29.601	. .	30.098
	45	Anon. $18^h 14^m 30^s$.	9.0	1	VI.	" " "	"	"	"	"	"	"	26.143	. .	26.656
	46	Anon. $18^h 15^m 41^s$.	8.0	2	VI, VIII.	" " "	"	"	"	"	"	"	34.405	. .	34.918
	47	Anon. $18^h 25^m 56^s$.	9.0	3	V, VI, VII.	349 50 2.0	2.9	5.0	7.1	3.0	59.7	3.28	31.867	. .	32.381
	48	O. Arg. S. 18525. .	9.0	3	III–VII.	344 0 2.0	3 0	4.8	6.9	3.7	0.9	3.55	30.911	. .	31.419
	49	Lacaille 7865. . .	. .	3	III–VII.	353 45 1.7	2.8	4.8	7.2	3.0	59.3	3.13	32.304	. .	32.814
	50	B. A. C. 6422 . .	. .	3	IV–VI.	346 50 1.1	1.0	4.0	5.0	1 1	59.7	1.98	37.126	. .	37.631
	51	B. A. C. 6455 . .	. .	3	III–VII.	349 50 3.0	3.3	5.9	8.0	2.0	0.0	3.70	28.394	. .	28.903
	52	Weisse XVIII, 1344.	9.0	3	IV–VI.	333 35 2.7	1.1	3.7	4.9	3.0	59.0	2.40	31.141	. .	31.645
	53	Anon. $19^h 0^m 27^s$.	. .	3	III, IV, V.	337 50 2.8	2.0	4.8	5.1	2.9	59.6	2.87	33.108	. .	33.606
	54	Anon. $19^h 0^m 58^s$.	. .	2	V–VII.	" " "	"	"	"	"	"	"	34.205	. .	34.717
10	55	Nadir	. .	.	. .	100 0 3.6	1.1	1.0	4.9	6.0	6.7	4.03	29.496	+ 0.633	. .
	56	λ Herculis	. .	3	III–VII.	292 40 4.3	0.3	3.3	3.0	6.9	6.7	4.08	28.628	. .	29.256
	57	Lacaille 7420. . .	. .	3	IV, VI, IX.	358 0 4.0	5.1	6.3	7.9	5.9	3.1	5.38	26.082	. .	26.740
	58	Dorpat 2245 . . .	. .	3	V, VII, IX.	300 30 5.5	3.8	4.9	5.3	8.6	8.6	6.12	25.459	. .	26.132
	59	O. Arg. S. 17597. .	. .	3	III–VII.	343 5 7.5	6.4	7.6	7.0	9.0	7.0	7.42	31.867	. .	32.504
	60	Lacaille 7605 . . .	. .	3	IV–VI.	358 0 3.1	4.8	6.0	9.1	5.6	3.2	5.20	28.935	. .	29.570
	61	18 Sagittarii	. .	3	III–VII.	349 49 59.3	59.2	62.0	62.2	61.5	58.4	60.43	27.942	. .	28.581
	62	B. A. C. 6309 . .	. .	3	III–VII.	337 20 1.5	0.1	1.9	0.6	2.7	1.3	1.35	30.035	. .	30.671
	63	Anon. $18^h 35^m 14^s$.	. .	3	III–VII.	330 5 3.8	1.0	4.4	3.0	4.3	3.2	3.28	26.903	. .	27.538
	64	Weisse XVIII, 971 .	. .	2	III–VII.	331 15 3.9	2.1	6.1	3.8	6.4	4.7	4.50	25.162	. .	25.798
	65	Lacaille 7922 . . .	. .	3	III–VII.	358 50 3.1	3.3	7.0	7.7	5.2	1.8	4.68	32.457	. .	33.098

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 17.4	S. 71 34 47.9	2 45.2	− 32 43 53.8	− 3.5	D.	
2	30.114	77.0	75.1	− 3 2.1	59 27 1.8	1 34.0	− 20 34 56.5	− 6.1	D.	
3	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
4	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
5	29.942	80.2	77.8	+ 3 0.4	62 58 3.6	1 47.4	− 24 6 11.7	− 7.5	B.	
6	29.956	79.1	76.0	− 1 48.9	S. 36 3 14.8	40.2	+ 2 49 44.2	− 13.8	B.	
7	. .	. .	76.0	+ 0 42.5	N. 6 14 12.7	6.0	+ 45 7 58.0	− 18.5	B.	
8	30.152	68.0	62.9	− 1 21.9	S. 72 53 45.7	3 3.1	− 34 3 9.5	− 4.7	D.	
9	. .	. .	. .	− 1 8.1	42 53 59.1	0 53.0	− 4 1 12.9	− 13.6	D.	
10	. .	. .	62.0	− 1 18.1	77 28 50.1	4 11.5	− 38 39 22.3	− 2.9	D.	
11	. .	. .	. .	+ 0 42.0	73 40 49.8	3 12.7	− 34 50 23.2	− 4.8	D.	
12	. .	. .	. .	+ 0 52.3	51 15 58.7	1 11.3	− 12 23 30.7	− 10.0	D.	
13	30.169	66.7	61.0	− 0 47.2	68 24 19.0	2 23.7	− 29 33 3.4	− 5.0	D.	
14	. .	. .	60.6	− 1 21.8	77 33 45.2	4 13.9	− 38 44 19.8	− 2.2	D.	Corr. −2″.12 applied to mean of A, B, C, D.
15	. .	. .	60.3	+ 0 22.7	77 45 28.5	4 18.1	− 38 56 7.3	− 2.1	D.	
16	. .	. .	. .	− 3 9.5	65 51 54.0	2 7.4	− 27 0 22.2	− 5.1	D.	
17	. .	. .	. .	− 3 42.2	65 51 21.3	2 7.3	− 26 59 49.4	− 5.0	D.	
18	. .	. .	. .	+ 0 36.6	54 30 41.9	1 20.4	− 15 38 23.0	− 7.8	D.	
19	. .	. .	. .	− 0 28.0	60 4 36.7	1 39.5	− 21 12 36.9	− 6.2	D.	
20	. .	. .	. .	− 1 14.6	59 18 50.6	1 36.5	− 20 26 47.9	− 6.2	D.	
21	30.173	65.0	59.4	+ 0 6.4	56 40 9.7	1 27.2	− 17 47 57.6	− 6.5	D.	
22	. .	. .	. .	− 2 29.4	S. 67 42 36.7	2 19.3	− 28 51 16.8	− 3.7	D.	
23	. .	. .	. .	− 0 44.6	N. 33 15 35.8	37.7	+ 72 9 52.8	− 15.2	D.	
24	. .	. .	. .	+ 1 27.4	S. 67 46 33.4	2 19.8	− 28 55 14.0	− 2.9	D.	
25	. .	. .	. .	− 0 0.1	46 30 5.5	1 5.6	− 7 37 26.8	− 6.7	D.	Star follows about 22^{s}.
26	30.172	64.0	58.8	− 0 3.8	76 0 2.2	3 46.6	− 37 10 9.6	− 1.1	D.	
27	. .	. .	. .	− 3 10.4	33 31 54.0	38.2	+ 5 21 7.1	− 7.6	D.	
28	. .	. .	. .	− 3 39.8	33 31 24.5	38.2	+ 5 21 36.6	− 7.6	D.	Same A. R.
29	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
30	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
31	30.168	72.3	70.0	+ 1 21.1	56 21 20.8	1 24.3	− 17 29 5.9	− 10.1	D	
32	. .	. .	69.0	− 1 39.7	75 48 24.6	3 38.8	− 36 58 24.1	− 3.5	D.	
33	. .	. .	. .	+ 2 35.4	S. 75 52 39.6	3 39.9	− 37 2 40.2	− 3.4	D.	
34	. .	. .	. .	− 1 32.1	N. 20 26 26.2	21.1	+ 59 20 26.6	− 25.5	D.	
35	. .	. .	. .	+ 0 54.1	S. 21 50 58.4	22.7	+ 17 2 18.2	− 18.0	D.	
36	. .	. .	. .	− 2 5.7	21 47 58.7	22.7	+ 17 5 17.9	− 17.9	D.	
37	. .	. .	. .	+ 1 34.9	71 21 39.4	2 46.3	− 32 30 46.4	− 3.9	D.	
38	. .	. .	. .	− 1 15.8	71 18 48.8	2 45.9	− 32 27 55.4	− 3.9	D.	
39	30.189	71.2	66.4	− 4 38.7	71 15 25.8	2 45.4	− 32 24 31.9	− 3.9	D.	
40	. .	. .	. .	− 1 31.3	58 18 32.1	1 31.7	− 19 26 24.5	− 7.4	D.	
41	. .	. .	. .	− 2 19.7	62 27 43.4	1 48.4	− 23 35 52.5	− 5.5	D.	No other star near.
42	. .	. .	. .	− 3 11.3	56 1 51.5	1 24.0	− 17 9 36.2	− 6.9	D.	
43	30.181	70.8	66.2	− 3 2.7	56 2 0.2	1 24.0	− 17 9 44.9	− 6.9	D.	
44	. .	. .	. .	− 0 3.1	65 20 0.1	2 2.9	− 26 28 23.7	− 4.2	D.	
45	. .	. .	. .	+ 1 44.7	65 21 47.8	2 3.0	− 26 30 11.6	− 4.2	D.	
46	. .	. .	. .	− 2 34.2	65 17 29.0	2 2.6	− 26 25 52.4	− 4.1	D.	
47	. .	. .	. .	− 1 14.6	69 48 48.7	2 33.0	− 30 57 42.5	− 2.8	D.	
48	30.181	70.2	65.4	− 0 44.6	63 59 19.0	1 55.8	− 25 7 35.6	− 4.0	D.	
49	. .	. .	. .	− 1 28.2	73 43 34.9	3 12.0	− 34 53 7.7	− 2.9	D.	
50	. .	. .	. .	− 3 59.4	66 46 2.6	2 11.6	− 27 54 34.9	− 3.0	D.	
51	. .	. .	. .	+ 0 34.3	69 50 38.0	2 33.4	− 30 59 32.2	− 2.2	D.	
52	. .	. .	. .	− 0 51.5	53 34 10.9	1 16.9	− 14 41 48.5	− 5.4	D.	
53	. .	. .	. .	− 1 53.1	57 48 9.8	1 30.1	− 18 56 0.7	− 4.3	D.	
54	. .	. .	. .	− 2 27.6	57 47 35.3	1 30.1	− 18 55 26.2	− 4.3	D.	
55	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
56	30.105	74.9	71.5	+ 0 23.3	12 40 27.4	0 12.6	+ 26 12 59.3	− 19.7	B.	
57	. .	. .	. .	+ 1 42.0	78 1 47.4	4 17.4	− 39 12 25.5	− 1.6	B.	
58	. .	. .	. .	+ 2 1.0	20 32 7.2	21.0	+ 18 21 11.1	− 16.2	B.	Double star, taken as one.
59	. .	. .	. .	− 1 18.5	63 3 48.9	1 49.8	− 24 11 59.5	− 5.2	B.	
60	30.107	74.3	70.4	+ 0 13.5	78 0 18.7	4 17.3	− 39 10 56.7	− 1.1	B.	
61	. .	. .	. .	+ 0 44.4	69 50 44.9	2 31.6	− 30 59 37.2	− 3.0	B.	
62	. .	. .	70.0	− 0 21.0	57 19 40.3	1 27.3	− 18 27 28.4	− 5.7	B.	Small star preceded 20^{s}.
63	. .	. .	. .	+ 1 17.1	50 6 20.3	1 7.1	− 11 13 48.2	− 7.0	B.	Star followed 10^{s} or 15^{s}; whole number of mic. revs. not recorded, probably 33.
64	. .	. .	. .	+ 2 11.5	51 17 16.0	1 10.0	− 12 24 46.7	− 6.5	B.	
65	30.110	73.2	69.0	− 1 37.1	S. 78 48 27.6	4 36.0	− 39 59 24.4	− 0.2	B.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Aug. 10	1	O. Arg. S. 19083, (1st *)	. .	2	III, V.	335 20 4.9	2.3	4.3	3.6	6.7	3.6	4.23	33.877	+ 0.633	34.505
	2	O. Arg. S. 19083, (2d *)	9.0	1	VII.	" " "	"	"	"	"	"	"	34.133	. .	34.784
	3	ν Sagittarii	. .	3	III–VII.	335 5 5.9	4.0	6.7	6.0	8.2	6.1	6.15	31.488	. .	32.124
	4	O. Arg. S. 19665. .	. .	3	III–VII.	338 30 8.2	7.7	8.6	8.4	9.0	6.3	8.03	26.767	. .	27.404
	5	Anon. $19^h\ 30^m\ 55^s$.	. .	3	III–VII.	346 15 8.2	6.7	10.1	8.5	8.7	6.4	8.10	33.643	. .	34.281
	6	Anon. $19^h\ 39^m\ 10^s$.	. .	2	III, V.	347 35 5.0	5.8	7.6	9.1	6.8	5.4	6.62	34.961	. .	35.591
	7	O. Arg. S. 20101. .	. .	3	III, V, IX.	344 25 6.0	5.4	6.3	7.0	7.1	4.5	6.05	33.546	. .	34.193
	8	Lacaille 8340. . .	. .	4	III, V, VII, IX.	354 45 4.3	6.0	8.6	8.2	6.7	4.5	6.38	30.915	. .	31.576
	9	B. A. C. 6949 . .	7.0	2	VII, IX.	330 10 0.8	0.6	3.5	4.7	3.5	1.2	2.38	30.582	. .	31.241
	10	Lacaille 8586. . .	. .	3	III–VII.	360 14 58.9	60.1	61.6	65.8	60.5	57.8	60.78	35.698	. .	36.339
	11	Lacaille 8633. . .	. .	3	III–VII.	358 4 58.2	61.5	63.0	66.0	60.2	57.7	61.10	31.838	. .	32.479
	12	Anon. $21^h\ 3^m\ 5^s$ . .	. .	3	III–VII.	342 45 0.5	1.8	3.6	2.5	2.1	1.9	2.07	35.368	. .	36.005
13	13	60 Herculis	. .	3	III–VII.	305 59 61.0	54.8	58.1	57.0	60.0	61.2	58.68	34.063	+ 0.468	34.529
	14	Lacaille 7244. . .	. .	3	IV–VI.	354 40 3.2	1.0	4.3	3.9	3.0	2.7	3.02	34.817	. .	35.287
	15	B. A. C. 5888 . .	. .	3	III–VII.	331 15 3.3	59.1	3.0	1.8	3.0	2.7	2.15	27.581	. .	28.051
	16	52 Ophiuchi	. .	3	III–VII.	340 50 3.9	0.0	3.1	4.2	3.0	2.2	2.73	31.340	. .	31.812
	17	O. Arg. S. 17132. . .	. .	3	III–VII.	347 0 3.7	59.1	4.0	2.2	2.0	2.0	2.17	32.645	. .	33.118
	18	B. A. C. 6026. . .	. .	3	III–VII.	349 25 4.7	1.2	5.2	5.8	3.0	2.0	3.65	35.193	. .	35.667
	19	O. Arg. S. 17376. .	. .	3	III–VII.	342 15 4.0	0.0	4.0	3.0	3.3	1.4	2.62	31.932	. .	32.404
	20	Anon. $17^h\ 53^m\ 14^s$.	. .	3	IV–VI.	342 25 3.3	59.8	4.0	2.7	2.3	1.1	2.20	30.521	. .	30.990
	21	B. A. C. 6120 . .	. .	3	IV–VI.	347 15 3.7	59.8	4.1	3.0	2.1	2.7	2.57	32.114	. .	32.580
	22	Lacaille 7595. . .	. .	3	IV–VI.	353 55 3.8	1.1	5.0	4.1	3.8	3.0	3.47	32.742	. .	33.212
	23	B. A. C. 6187 . .	. .	3	III–VII.	346 40 4.2	0.3	5.7	3.1	2.7	3.8	3.30	36.145	. .	36.618
	24	η Serpentis	. .	3	III–VII.	321 50 5.0	0.3	3.7	3.2	4.6	5.0	3.63	32.556	. .	33.025
	25	62 Serpentis	. .	3	III–VII.	312 25 3.7	57.8	3.3	0.2	3.8	3.0	1.97	28.426	. .	28.893
	26	O. Arg. S. 18953. .	. .	3	IV–VI.	338 25 2.6	56.2	3.0	0.1	0.4	59.4	0.28	32.049	. .	32.518
	27	B. A. C. 6525 . .	. .	3	III–VII.	347 40 3.2	0.2	5.8	3.8	2.2	2.2	2.90	26.897	. .	27.370
	28	Lalande 36229, (1st *)	. .	4	II, III, VII, VIII.	280 5 4.2	0.0	3.9	4.7	6.3	7.7	4.47	30.726	. .	31.177
	29	Lalande 36229, (2d *)	. .	3	IV–VI.	" " "	"	"	"	"	"	"	30.374	. .	30.840
	30	Lacaille 8092. . .	. .	2	III–VII.	352 40 4.0	2.0	5.0	5.6	2.8	3.0	3.73	33.538	. .	34.015
	31	Nadir	. .	.	. . .	100 0 4.0	2.4	4.0	7.7	6.9	8.9	5.65	29.592	. .	. .
14	32	Moon, N. L. . . .	. .	5	I–IX.	334 15 3.0	57.2	0.6	59.2	2.6	2.3	0.82	30.101	+ 0.581	30.689
	33	Nadir	. .	.	. . .	100 0 4.2	1.0	3.1	5.0	6.1	8.5	4.65	29.567	. .	. .
	34	Weisse (2) XVI, 1735	. .	3	III, V, IX.	293 10 5.6	1.9	6.0	4.0	7.9	8.3	5.62	26.461	. .	27.036
	35	Anon. $17^h\ 13^m\ 52^s$.	. .	2	IV–VI.	354 10 5.0	1.6	6.1	4.3	4.5	4.2	4.28	38.525	. .	39.109
	36	52 Ophiuchi	. .	3	III–VII.	340 50 5.9	3.2	7.0	6.0	5.5	4.8	5.40	31.343	. .	31.936
Aug. 16	37	B. A. C. 5896 . .	. .	3	V, VI, VII.	344 15 2.1	57.0	2.0	59.8	0.0	0.0	0.15	28.410	+ 0.473	28.887
	38	κ Scorpii	. .	3	IV–VI.	357 50 2.4	59.0	3.8	5.0	0.2	59.7	1.68	35.119	. .	35.594
	39	Moon, N. L. . .	. .	9	I–IX.	339 15 1.4	56.0	2.3	0.8	59.1	59.3	59.82	31.078	. .	31.559
	40	Anon. $17^h\ 52^m\ 59^s$.	. .	3	IV–VI.	355 15 4.0	0.1	4.8	4.8	1.6	1.8	2.85	34.619	. .	35.094
	41	O. Arg. S. 17610. .	. .	3	III–VII.	344 20 3.3	58.9	3.0	2.0	2.0	1.2	1.73	28.298	. .	28.776
	42	O. Arg. S. 17796. .	7.5	3	III–VII.	339 20 4.9	0.3	5.2	4.3	3.1	3.1	3.48	31.621	. .	32.098
	43	Taylor 8458 . . .	. .	2	II, III.	345 20 4.4	59.1	3.8	2.3	2.8	2.0	2.40	29.480	. .	29.953
	44	Anon. $18^h\ 15^m\ 33^s$.	. .	3	IV, V, VII.	" " "	"	"	"	"	"	"	25.952	. .	26.430
	45	Anon. $18^h\ 15^m\ 44^s$.	. .	2	VI, VII.	" " "	"	"	"	"	"	"	34.297	. .	34.786
	46	Anon. $18^h\ 16^m\ 10^s$.	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	25.198	. .	25.712
	47	Nadir	. .	.	. .	100 0 5.0	1.0	3.4	7.8	6.0	9.4	5.43	29.580	. .	. .
	48	Weisse XVIII, 971 .	9.0	2	VI, IX.	331 20 5.0	0.0	4.1	0.0	2.2	2.2	2.25	34.708	. .	35.204
	49	Weisse XVIII, 1285.	7.0	3	III–VII.	331 40 5.0	58.0	3.0	1.9	2.9	2.2	2.17	33.353	. .	33.828
	50	O. Arg. S. 19007. .	9.0	3	III–VII.	339 50 4.9	59.8	4.5	3.4	2.3	1.1	2.67	27.070	. .	27.547
18	51	Nadir	. .	.	. .	100 0 4.0	2.0	3.2	8.3	6.0	7.0	5.08	29.535	+ 0.507	. .
	52	Lacaille 7245. . .	. .	2	V, VI.	355 55 4.6	3.1	6.8	9.8	2.0	3.0	4.88	29.015	. .	29.528
	53	Weisse XVII, 387 .	7.0	3	III–VII.	324 40 4.2	1.0	3.0	4.0	4.0	3.9	3.35	27.319	. .	27.817
	54	Weisse XVII, 620 .	8.0	3	IV–VI.	306 5 4.0	0.0	2.4	4.9	3.1	4.9	3.22	31.425	. .	31.931
	55	ι² Scorpii	7.0	3	IV–VI.	358 55 4.0	3.0	7.0	11.0	4.0	0.7	4.95	35.772	. .	36.282
	56	B. A. C. 6066. . .	. .	3	III–VII.	342 50 4.0	1.0	6.0	5.9	3.7	0.5	3.52	35.676	. .	36.187
	57	O. Arg. S. 17509. .	7.5	3	IV–VI.	341 45 3.0	1.0	5.1	6.1	4.0	59.9	3.18	27.874	. .	28.382
	58	Anon. $17^h\ 55^m\ 27^s$.	8.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.031	. .	30.548
	59	Anon. $17^h\ 56^m\ 4^s$.	7.5	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	35.164	. .	35.704
	60	O. Arg. S. 17809. .	7.5	3	III–VII.	338 20 3.8	1.0	5.0	5.1	2.1	59.1	2.68	30.351	. .	30.861
	61	Weisse XVIII, 793 .	7.0	3	III–VII.	328 10 3.0	1.0	4.2	5.0	2.5	0.1	2.63	33.708	. .	34.217
	62	Weisse XVIII, 1285.	. .	3	III–VII.	331 40 2.0	59.0	3.0	3.9	1.1	58.1	1.18	33.326	. .	33.835
	63	g Aquilæ	. .	3	V, VI, VII.	322 45 2.0	59.1	3.5	3.2	2.1	0.2	1.68	28.106	. .	28.620
	64	α Coronæ Australis .	. .	3	IV–VI.	356 55 1.7	1.0	5.8	8.1	1.1	oblit.	3.90	27.695	. .	28.204
	65	Anon. $19^h\ 17^m\ 29^s$.	. .	3	III–VII.	334 10 1.0	58.0	1.8	2.2	59.5	58.1	0.10	31.705	. .	32.215

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 21.2	S. 55 17 43.0	1 21.1	− 16 25 24.8	− 4.8	B.	
2	. .	. .	. .	− 2 30.0	55 17 34.3	1 21.1	− 16 25 16.1	− 4.8	B.	
3	30.113	73.0	68.2	− 1 6.5	55 3 59.6	1 20.5	− 16 11 40.9	− 4.3	B.	
4	. .	. .	. .	+ 1 21.3	58 31 29.3	1 31.8	− 19 39 21.9	− 3.3	B.	
5	. .	. .	. .	− 2 14.2	66 12 53.9	2 7.2	− 27 21 21.8	− 1.8	B.	No doubt of the right star.
6	. .	. .	. .	− 2 55.7	67 32 11.0	2 15.5	− 28 40 47.2	− 1.4	B.	Microm. revs. not recorded; companion too faint to observe.
7	. .	. .	. .	− 2 11.4	64 22 54.6	1 57.1	− 25 31 12.5	− 1.6	B.	
8	30.113	72.1	67.0	− 0 49.4	74 44 17.0	3 23.8	− 35 54 1.5	+ 0.1	B.	
9	. .	. .	. .	− 0 38.9	50 9 23.5	1 7.6	− 11 16 51.9	− 2.8	B.	
10	31.116	71.3	66.0	− 3 18.8	80 11 42.0	5 15.4	− 41 23 18.1	+ 1.0	B.	
11	. .	. .	. .	− 1 17.7	78 3 43.4	4 41.0	− 39 14 45.1	+ 0.8	B.	
12	30.117	71.0	65.6	− 3 8.3	62 41 53.8	1 49.3	− 23 50 3.8	0.0	B.	
13	30.082	82.5	79.0	− 2 22.0	25 57 36.7	26.8	+ 12 55 35.7	− 18.6	D.	Cloudy.
14	. .	. .	78.7	− 2 45.8	74 37 17.3	3 17.5	− 35 46 55.5	− 3.1	D.	
15	. .	. .	. .	+ 1 1.0	51 16 3.2	1 8.7	− 12 23 32.6	− 10.2	D.	
16	30.095	81.7	78.2	− 0 56.8	60 49 6.0	1 38.6	− 21 57 5.3	− 7.0	D.	
17	. .	. .	. .	− 1 37.7	66 58 24.4	2 9.2	− 28 6 54.4	− 4.8	D.	
18	. .	. .	. .	− 2 57.8	69 22 5.9	2 25.5	− 30 30 52.2	− 3.9	D.	
19	. .	. .	. .	− 1 15.3	62 13 47.3	1 44.6	− 23 21 52.6	− 5.8	D.	
20	. .	. .	. .	− 0 31.0	62 24 31.2	1 45.4	− 23 32 37.3	− 5.6	D.	
21	. .	. .	. .	− 1 20.9	67 13 41.7	2 10.9	− 28 22 13.3	− 4.1	D.	
22	. .	. .	77.5	− 1 40.7	73 53 22.8	3 8.8	− 35 2 52.3	− 2.1	D.	
23	. .	. .	. .	− 3 27.6	66 36 35.7	2 7.1	− 27 45 3.6	− 4.2	D.	
24	30.100	80.5	77.3	− 1 34.8	41 48 28.8	49.5	− 2 55 39.1	− 10.2	D.	
25	. .	. .	. .	+ 0 34.7	32 25 36.6	35.2	+ 6 27 27.4	− 10.1	D.	
26	. .	. .	76.7	− 1 18.9	58 23 41.3	1 29.8	− 19 31 31.9	− 4.5	D.	
27	. .	. .	. .	+ 1 22.3	67 41 25.2	2 14.1	− 28 50 0.1	− 2.2	D.	
28	. .	. .	. .	− 0 36.9	0 4 27.6	0.1	+ 38 49 11.6	− 12.7	D.	
29	. .	. .	. .	− 0 26.3	0 4 38.2	0.1	+ 38 49 1.0	− 12.7	D.	Micrometer reading diminished one rev.
30	30.106	80.0	76.0	− 2 5.8	72 37 57.9	2 55.3	− 33 47 14.0	− 0.8	D.	Faint.
31	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
32	30.077	83.2	83.3	− 0 21.6	54 14 39.2	−29 50.2	− 14 51 9.8	. .	D.	
33	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
34	. .	. .	. .	+ 1 32.8	13 11 38.4	12.9	+ 25 41 48.0	− 22.1	B.	
35	30.081	82.0	79.5	− 4 45.9	74 5 18.4	3 10.4	− 35 14 49.6	− 3.3	B.	
36	. .	. .	. .	− 1 0.7	60 49 4.7	1 38.3	− 21 57 3.8	− 7.0	B.	
37	30.012	85.2	83.7	+ 0 34.8	64 15 35.0	1 52.5	− 25 23 48.3	− 6.1	D.	
38	. .	. .	83.0	− 2 55.4	77 47 6.2	4 5.6	− 38 57 32.6	− 1.6	D.	
39	. .	. .	. .	− 0 48.8	59 14 11.0	−31 33.7	− 19 48 58.0	. .	D.	
40	. .	. .	. .	− 2 39.7	75 12 23.2	3 23.6	− 36 22 7.5	− 1.9	D.	
41	. .	. .	82.9	+ 0 38.3	64 20 40.0	1 53.1	− 25 28 53.9	− 4.7	D.	
42	30.010	84.5	82.7	− 1 5.7	59 18 57.8	1 31.8	− 20 26 50.3	− 6.1	D.	
43	. .	. .	. .	+ 0 1.5	65 20 3.9	1 58.3	− 26 28 23.0	− 4.1	D.	
44	. .	. .	. .	+ 1 51.7	65 21 54.1	1 58.5	− 26 30 13.4	− 4.0	D.	
45	. .	. .	. .	− 2 30.0	65 17 32.4	1 58.1	− 26 25 51.2	− 4.0	D.	
46	. .	. .	. .	+ 2 14.2	68 22 16.6	2 16.8	− 29 30 54.1	− 3.2	D.	
47	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
48	. .	. .	. .	− 2 43.2	51 17 19.1	1 8.2	− 12 24 48.0	− 6.8	D.	
49	. .	. .	. .	− 2 0.0	51 38 2.2	1 9.1	− 12 45 32.0	− 6.2	D.	
50	30.020	84.0	81.0	+ 1 16.8	59 51 19.4	1 34.1	− 20 59 14.3	− 4.1	D.	
51	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
52	30.133	80.0	77.4	+ 0 14.8	75 55 19.7	3 36.8	− 37 5 17.2	− 2.5	D.	
53	. .	. .	. .	+ 1 8.3	44 41 11.7	54.8	− 5 48 27.2	− 12.2	D.	
54	. .	. .	. .	− 1 0.5	26 4 2.7	27.1	+ 12 49 9.4	− 17.1	D.	
55	30.144	79.5	77.0	− 3 17.0	78 51 47.9	4 33.4	− 40 2 42.1	− 0.9	D.	
56	. .	. .	. .	− 3 14.0	62 46 49.5	1 47.4	− 23 54 57.7	− 5.6	D.	
57	. .	. .	. .	+ 0 50.7	61 45 53.8	1 43.0	− 22 53 57.6	− 5.6	D.	
58	. .	. .	. .	− 0 17.2	61 44 46.0	1 42.9	− 22 52 49.7	− 5.6	D.	
59	. .	. .	. .	− 2 58.9	61 42 4.3	1 42.7	− 22 50 7.8	− 5.6	D.	Micrometer revolutions about 35.
60	. .	. .	76.4	− 0 27.0	58 19 35.7	1 29.8	− 19 27 26.3	− 6.3	D.	
61	30.160	79.0	75.8	− 2 12.2	48 7 50.4	1 2.0	− 9 15 13.2	− 7.9	D.	
62	. .	. .	. .	− 2 0.2	51 38 1.0	1 10.2	− 12 45 31.9	− 6.2	D.	
63	. .	. .	. .	+ 0 43.2	42 45 44.9	51.5	− 3 52 57.1	− 8.1	D.	
64	30.160	78.5	75.2	+ 0 56.2	76 56 0.1	3 54.7	− 38 6 15.6	− 0.3	D.	Corr. −1″.25 applied to mean of A, B, C, D.
65	. .	. .	. .	− 1 9.4	S. 54 8 50.7	1 17.0	− 15 16 28.4	− 4.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Aug. 18	1	Moon, S. L.	. .	4	I, II, III, IV.	340 10 3.1	1.0	5.0	7.0	2.1	59.8	3.00	26.801	+ 0.507	27.323
	2	Moon, N. L.	. .	4	VI, VII, VIII, IX.	339 40 2.7	1.4	6.0	7.0	3.0	0.0	3.35	27.892	. .	28.402
26	3	Lacaille 7420. . .	. .	3	III–VII.	358 0 4.9	3.5	7.0	8.8	3.6	1.8	4.93	25.958	+ 0.620	26.586
	4	O. Arg. S. 17379. .	. .	3	III–VII.	346 0 4.5	1.8	5.0	3.8	2.2	1.5	3.13	32.762	. .	33.387
	5	Anon. $17^h\ 56^m\ 16^s$.	. .	3	III–VII.	343 5 6.6	3.5	6.0	5.0	5.4	4.1	5.10	33.765	. .	34.389
	6	B. A. C. 6153 . .	. .	3	III–VII.	344 40 7.0	3.5	8.1	6.5	5.4	5.1	5.93	32.000	. .	32.625
	7	Anon. $18^h\ 14^m\ 30^s$.	. .	2	IV–VI.	345 25 3.9	0.3	3.7	2.8	0.3	0.8	1.97	35.429	. .	36.051
	8	O. Arg. S. 18525 .	. .	3	III–VII.	344 0 3.7	0.2	4.2	5.0	2.3	1.2	2.77	30.685	. .	31.310
	9	Weisse XVIII, 971 .	. .	2	II, IV.	331 20 6.8	3.3	6.9	6.4	5.1	3.9	5.40	34.686	. .	35.296
	10	Weisse XVIII, 972 .	. .	2	VI, VIII.	" " "	"	"	"	"	"	"	22.621	. .	23.259
	11	Weisse XVIII, 1294.	. .	3	III–VII.	328 0 3.7	1.2	3.7	4.9	3.4	1.2	3.02	27.418	. .	28.040
	12	γ Coronæ Australis .	. .	3	III–VII.	356 10 2.3	0.9	5.2	5.5	1.2	0.0	2.52	39.423	. .	40.050
	13	Anon. $19^h\ 6^m\ 49^s$.	. .	1	IX.	327 25 3.0	0.5	3.0	3.8	2.9	1.0	2.37	28.975	. .	29.629
	14	O. Arg. S. 20113 .	. .	3	III–VII.	337 50 5.1	2.7	7.2	5.5	4.0	2.8	4.55	29.523	. .	30.146
	15	B. A. C. 6922 . .	. .	3	III–VII.	355 15 4.0	3.1	7.4	6.7	1.9	0.5	3.93	28.167	. .	28.794
	16	O. Arg. S. 20533 .	. .	3	III–VII.	340 15 3.6	2.5	4.8	6.8	2.0	1.1	3.47	35.604	. .	36.228
	17	Anon. $20^h\ 26^m\ 37^s$.	. .	3	III–VII.	318 55 4.3	0.8	4.0	3.3	1.3	2.0	2.62	18.929	. .	19.549
	18	B. A. C. 7175. . .	. .	3	III–VII.	318 30 3.1	4.1	7.7	9.1	3.3	0.4	4.62	30.680	. .	31.308
	19	7 Aquarii	. .	2	III, VII.	329 5 1.1	0.3	3.0	4.0	1.5	0.3	1.70	31.041	. .	31.664
	20	Lacaille 8657. . .	. .	3	IV–VI.	362 30 10.5	10.7	15.0	17.8	9.4	8.8	12.03	43.170	. .	43.793
	21	Lacaille 8737. . .	. .	3	III–VII.	359 55 5.0	5.0	7.9	11.0	3.8	1.8	5.75	27.210	. .	27.838
	22	Lalande 41870 . .	. .	3	III–VII.	331 45 6.0	5.0	8.8	8.8	5.8	5.0	6.57	33.787	. .	34.409
	23	κ Capricorni . . .	. .	3	III–VII.	338 19 58.8	57.0	60.7	62.0	57.5	54.1	58.35	30.143	. .	30.766
	24	Nadir	. .	.	. .	100 0 2.0	2.2	2.1	9.2	5.0	4.7	4.20	29.514	. .	. .
27	25	Nadir	. .	.	. .	100 0 1.6	0.9	1.3	7.1	4.1	5.0	3.33	29.405	+ 0.581	. .
	26	Dorpat 2204, (1st *).	. .	4	I, II, VIII, IX.	332 5 1.1	58.1	2.5	1.0	1.7	59.2	0.60	24.668	. .	25.258
	27	Dorpat 2204, (2d *).	. .	3	IV–VI.	" " "	"	"	"	"	"	"	25.131	. .	25.713
	28	O. Arg. S. 17376. .	. .	3	V, VI, VII.	342 15 1.0	57.2	2.2	1.6	0.0	6.4	1.40	31.796	. .	32.387
	29	O. Arg. S. 17553. .	. .	3	III–VII.	343 14 60.7	56.8	61.0	60.2	59.8	57.0	59.25	29.534	. .	30.119
	30	Anon. $18^h\ 3^m\ 5^s$ . .	9.0	3	III–VII.	358 10 4.0	3.0	6.5	9.1	3.0	0.1	4.28	26.841	. .	27.430
	31	Anon. $18^h\ 14^m\ 32^s$.	. .	3	III–VII.	345 25 3.5	59.5	4.0	3.0	1.0	59.0	1.67	35.343	. .	35.929
	32	O. Arg. S. 18151. .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	34.815	. .	35.398
	33	O. Arg. S. 18160. .	. .	4	VI, VII, VIII, IX.	" " "	"	"	"	"	"	"	29.421	. .	30.031
	34	B. A. C. 6363. . .	. .	4	I, II, VIII, IX.	358 40 3.0	1.8	6.9	9.0	3.6	0.0	4.05	33.435	. .	34.048
	35	Lacaille 7831. . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.827	. .	27.410
	36	Dorpat 2391, (1st *).	10.0	2	III, VI.	325 0 2.4	59.1	1.1	2.0	2.0	0.6	1.20	27.914	. .	28.497
	37	Dorpat 2391, (2d *).	7.0	2	VIII, IX.	" " "	"	"	"	"	"	"	26.746	. .	27.353
	38	Anon. $18^h\ 51^m\ 54^s$.	. .	3	III–VII.	327 15 3.7	1.0	2.8	4.1	3.0	0.9	2.58	31.593	. .	32.175
	39	Weisse XVIII, 1301	. .	1	IX.	" " "	"	"	"	"	"	"	34.322	. .	34.936
	40	Weisse XVIII, 1443	9.0	3	III–VII.	327 50 2.2	59.4	2.3	3.2	2.0	59.6	1.45	36.372	. .	36.955
	41	Lacaille 8023. . .	. .	3	III–VII.	352 25 4.0	2.5	6.0	8.1	2.6	1.0	4.03	29.522	. .	30.109
	42	Lalande 36252 . .	. .	3	III–VII.	341 15 4.0	3.6	6.0	9.1	4.8	1.0	4.75	35.176	. .	35.761
	43	O. Arg. S. 19674. .	. .	3	IV–VI.	341 55 3.0	0.7	5.0	5.2	3.8	59.9	2.93	33.988	. .	34.570
	44	Lacaille 8170. . .	. .	3	III–VII.	0 40 1.9	0.2	5.1	8.0	1.0	59.1	2.55	32.526	. .	33.116
	45	O. Arg. S. 19924. .	. .	2	III–VII.	345 55 4.9	3.0	6.5	6.4	3.0	1.2	4.17	33.896	. .	34.484
30	46	O. Arg. S. 17426. .	. .	3	IV–VI.	344 5 4.7	6.3	10.0	13.0	3.0	1.4	6.40	35.309	+ 0.546	35.856
	47	B. A. C. 6108 . .	. .	3	III–VII.	344 30 3.7	5.0	8.0	12.0	1.9	0.1	5.12	33.271	. .	33.822
	48	Anon. $18^h\ 6^m\ 47^s$	. .	1	V.	337 50 4.0	5.7	8.2	11.7	1.1	0.0	5.12	29.961	. .	30.507
	49	O. Arg. S. 17905. .	. .	1	V.	" " "	"	"	"	"	"	"	22.399	. .	22.945
	50	Anon. $18^h\ 7^m\ 49^s$.	. .	1	VIII.	" " "	"	"	"	"	"	"	30.137	. .	30.712
	51	Anon. $18^h\ 8^m\ 9^s$ . .	. .	1	IX.	" " "	"	"	"	"	"	"	31.524	. .	32.113
	52	O. Arg. S. 18587. .	. .	3	IV–VI.	339 55 4.5	6.4	10.0	14.0	3.7	0.9	6.58	30.534	. .	31.081
	53	Dorpat 2391, (1st *).	. .	2	IV, VI.	325 0 4.8	6.0	6.2	10.2	4.0	2.0	5.53	28.104	. .	28.652
	54	B. A. C. 6479. . .	. .	3	III–VII.	344 0 4.9	5.8	8.9	13.8	3.0	0.2	6.10	31.829	. .	32.380
	55	Anon. $18^h\ 55^m\ 49^s$.	9.0	2	V, VIII.	326 25 4.3	6.0	7.2	12.0	5.0	1.6	6.02	36.241	. .	36.802
	56	Anon. $19^h\ 7^m\ 20^s$.	. .	3	III–VII.	352 40 4.7	7.1	10.0	14.3	2.3	0.8	6.53	31.975	. .	32.527
	57	O. Arg. S. 19451. .	9.0	2	III–VII.	345 20 5.0	6.7	9.9	12.7	3.8	1.0	6.52	29.640	. .	30.193
	58	O. Arg. S. 19689. .	8.0	3	III–VII.	341 10 4.3	7.0	9.7	15.8	3.0	0.9	6.78	32.832	. .	33.382
	59	Weisse XIX, 722 .	6.7	3	III–VII.	329 20 3.8	5.7	7.0	12.2	2.0	0.0	5.12	31.465	. .	32.013
	60	O. Arg. S. 19960. .	. .	3	V, VII.	345 50 3.5	4.9	8.0	10.9	1.3	8.3	6.15	28.376	. .	29.933
	61	Nadir	. .	.	. .	100 0 2.7	7.2	7.2	16.3	6.0	5.1	7.42	29.571	. .	. .
31	62	Nadir	. .	.	. .	100 0 1.5	4.0	5.6	12.1	5.4	4.2	5.47	29.492	+ 0.683	. .
	63	B. A. C. 6525 . .	. .	3	IV–VI.	347 45 1.6	4.9	7.0	10.8	0.4	58.7	3.90	36.405	. .	37.090
	64	Lacaille 8061. . .	. .	3	V, VII, IX.	355 54 58.1	62.2	63.3	68.4	59.4	54.8	61.03	24.484	. .	25.199
	65	Anon. $19^h\ 21^m\ 53^s$.	9.5	1	VIII.	344 55 2.1	3.7	6.9	8.0	2.5	59.9	3.85	33.961	. .	34.677

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 1 23.8	S. 60 11 26.8	−46 27.0	— 20 16 10.2	. .	D.	
2	30.170	78.0	75.0	+ 0 50.0	59 40 53.4	−46 14.2				
3	. .	. .	77.0	+ 1 46.8	78 1 51.8	4 14.5	— 39 12 27.0	— 0.7	B.	
4	. .	. .	. .	— 1 46.2	65 58 16.9	2 3.6	— 27 6 41.3	— 4.4	B.	
5	30.100	81.0	76.0	— 2 17.6	63 2 47.5	1 48.6	— 24 10 56.9	— 6.9	B.	
6	. .	. .	. .	— 1 22.3	64 38 43.6	1 56.5	— 25 47 0.9	— 4.2	B.	
7	. .	. .	. .	— 3 9.8	65 21 52.2	2 0.4	— 26 30 13.3	— 3.5	B.	Another star 5^s later and south.
8	30.104	80.0	75.1	— 0 41.0	63 59 21.7	1 53.4	— 25 7 35.9	— 3.3	B.	Star preceded this about 20^s north.
9	. .	. .	. .	— 2 46.0	51 17 19.4	1 9.3	— 12 24 49.4	— 6.7	B.	
10	. .	. .	. .	+ 3 30.8	51 23 36.2	1 9.6	— 12 31 6.5	— 6.7	B.	
11	. .	. .	. .	+ 1 1.3	48 1 4.4	1 1.8	— 9 8 26.9	— 7.1	B.	
12	30.114	79.0	74.3	— 5 15.4	76 4 47.1	3 40.4	— 37 14 48.2	+ 0.9	B.	
13	. .	. .	. .	+ 0 11.6	47 25 14.0	1 0.6	— 8 32 35.3	— 6.5	B.	Faint; another star north and preceding this
14	. .	. .	. .	— 0 4.6	57 50 0.0	1 28.6	— 18 57 49.3	— 2.2	B.	5^s or 10^s, about same magnitude.
15	30.108	77.5	72.0	+ 0 37.8	75 15 41.7	3 28.9	— 36 25 31.4	+ 1.9	B.	
16	. .	. .	. .	— 3 15.3	60 11 48.1	1 37.3	— 21 19 46.2	— 0.7	B.	
17	. .	. .	. .	+ 5 26.5	39 0 29.1	45.3	— 0 7 35.2	— 4.0	B.	
18	30.108	76.5	71.3	— 0 41.0	78 29 23.6	4 27.4	— 39 40 11.8	+ 3.0	B.	
19	. .	. .	. .	— 0 52.1	49 4 9.6	1 4.5	— 10 11 34.8	— 1.5	B.	
20	30.113	76.2	71.0	— 7 12.1	82 22 59.9	39.4	— 43 30 0.1	+ 3.7	B.	
21	. .	. .	. .	+ 1 7.7	79 51 13.4	5 2.3	— 41 2 36.5	+ 3.3	B.	
22	. .	. .	. .	— 2 18.2	51 42 48.4	1 10.9	— 12 50 20.0	+ 0.1	B.	
23	. .	. .	70.3	— 0 24.0	58 19 34.4	1 32.8	— 19 27 27.9	+ 1.0	B.	
24	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
25	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
26	. .	. .	. .	+ 2 28.3	52 7 28.9	1 10.9	— 13 15 0.6	— 9.2	D.	
27	30.098	80.3	78.4	+ 2 14.1	52 7 14.7	1 10.9	— 13 14 46.4	— 9.2	D.	
28	. .	. .	. .	— 1 14.8	62 13 46.6	1 44.6	— 23 21 51.9	— 5.5	D.	
29	. .	. .	. .	— 0 3.7	63 14 55.5	1 49.3	— 24 23 5.6	— 4.8	D.	Field crowded with stars.
30	. .	. .	77.3	+ 1 20.4	78 11 24.7	4 17.8	— 39 22 3.2	— 0.1	D.	
31	. .	. .	. .	— 3 5.9	65 21 55.7	2 0.2	— 26 30 16.7	— 3.5	D.	
32	. .	. .	. .	— 2 49.2	65 22 12.4	2 0.2	— 26 30 33.3	— 3.5	D.	
33	30.106	79.8	76.9	— 0 1.0	65 25 0.7	2 0.7	— 26 33 22.2	— 3.4	D.	
34	. .	. .	. .	— 2 6.9	78 37 57.2	4 28.0	— 39 48 46.0	+ 1.2	D.	
35	. .	. .	76.3	+ 1 21.1	78 41 25.1	4 29.4	— 39 52 15.2	+ 1.2	D.	
36	. .	. .	. .	+ 0 47.0	45 0 48.2	55.5	— 6 8 4.4	— 8.4	D.	
37	. .	. .	. .	+ 1 22.8	45 1 24.0	55.5	— 6 8 40.3	— 8.4	D.	
38	. .	. .	. .	— 1 8.2	47 13 54.4	1 0.0	— 8 21 15.1	— 7.3	D.	
39	. .	. .	. .	— 2 34.8	47 12 27.8	59.9	— 8 19 48.5	— 7.3	D.	
40	. .	. .	. .	— 3 38.2	47 46 23.3	1 1.1	— 8 53 45.2	— 6.8	D.	
41	30.097	78.8	75.6	— 0 3.4	72 25 0.6	2 53.2	— 33 34 14.5	+ 0.1	D.	
42	. .	. .	. .	— 3 0.7	61 12 4.1	1 40.7	— 22 20 5.5	— 2.7	D.	Star following 8^s; about 30 revolutions.
43	. .	. .	. .	— 2 23.2	61 52 39.7	1 43.5	— 23 0 44.0	— 2.1	D.	
44	30.100	78.3	75.0	— 1 37.7	80 38 24.9	5 23.5	— 41 50 9.2	+ 2.8	D.	
45	. .	. .	. .	— 2 20.6	65 52 43.6	2 3.7	— 27 1 8.0	— 1.6	D.	
46	. .	. .	. .	— 3 3.7	64 2 2.7	1 55.6	— 25 10 19.1	— 4.8	D.	
47	30.060	71.3	65.0	— 1 59.8	64 28 5.3	1 57.9	— 25 36 24.0	— 4.5	D.	
48	. .	. .	. .	— 0 15.9	57 49 49.2	1 29.8	— 18 57 39.8	— 6.3	D.	
49	. .	. .	. .	+ 3 40.6	57 53 45.7	1 30.1	— 19 1 36.5	— 6.2	D.	
50	. .	. .	. .	— 0 22.3	57 49 42.8	1 29.9	— 18 57 33.4	— 6.2	D.	
51	. .	. .	. .	— 1 6.2	57 48 58.9	1 29.8	— 18 56 49.5	— 6.2	D.	
52	. .	. .	. .	— 0 33.9	59 54 32.7	1 37.7	— 21 2 31.2	— 4.4	D.	
53	30.072	70.5	63.3	+ 0 42.2	45 0 47.8	56.8	— 6 8 5.3	— 8.7	D.	
54	. .	. .	. .	— 1 14.6	63 58 51.5	1 55.9	— 25 7 8.2	— 2.6	D.	
55	. .	. .	. .	— 3 33.4	46 21 32.6	59.6	— 7 28 53.0	— 7.5	D.	Star preceding 11^s, at 18 revolutions. Star
56	. .	. .	62.8	— 1 19.2	72 38 47.3	2 59.9	— 33 48 7.9	+ 0.4	D.	following 11^s, at about 30 revolutions.
57	. .	. .	. .	— 0 6.1	65 20 0.5	2 3.2	— 26 28 24.4	— 1.4	D.	
58	. .	. .	. .	— 1 46.0	61 8 20.8	1 42.9	— 22 16 24.4	— 2.2	D.	Faint.
59	30.064	69.5	62.2	— 1 3.1	49 19 2.1	1 6.2	— 10 26 29.0	— 5.1	D.	
60	. .	. .	. .	+ 0 2.1	65 50 8.2	2 6.2	— 26 58 35.2	— 0.5	D.	
61	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
62	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
63	. .	. .	63.5	— 3 42.4	67 41 21.5	2 17.6	— 28 49 59.8	— 1.2	B.	
64	30.092	70.3	63.2	+ 2 30.2	75 57 31.2	3 43.2	— 37 7 35.2	+ 1.5	B.	
65	. .	. .	. .	— 2 26.6	S. 64 52 37.2	2 0.7	— 26 0 58.7	— 1.3	B.	Star preceding 14^s, south.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Aug. 31	1	Anon. 19h 34m 9s .	9.5	2	V, VII.	343 35 3.9	6.6	7.0	11.7	4.6	2.2	6.00	32.721	+ 0.683	33.414
	2	Lacaille 8326. . .	. .	4	III, V, VII, IX.	355 30 5.5	8.5	8.1	12.0	2.7	0.5	6.22	30.322	. .	31.025
	3	Anon. 20h 26m 40s .	. .	3	III–VII.	319 0 3.5	6.1	6.1	10.0	3.3	2.1	5.18	38.259	. .	38.942
	4	Lacaille 8559. . .	. .	3	V, VII, IX.	2 19 59.3	64.1	65.5	72.1	60.8	57.1	63.15	37.104	. .	37.820
	5	Lacaille 8628. . .	. .	3	III–VII.	“ “ “	“	“	“	“	“	“	32.983	. .	33.675
	6	Anon. 20h 57m 18s .	7.0	3	IV, VII, IX.	351 45 1.0	7.1	8.1	12.5	4.5	58.1	5.22	34.436	. .	35.149
	7	Lacaille 8737. . .	. .	3	III–VII.	359 55 3.0	7.2	7.9	14.0	2.4	59.0	5.58	36.934	. .	37.625
	8	74 Cygni	. .	3	III–VII.	279 5 3.9	5.0	7.7	13.1	6.5	4.5	6.78	31.862	. .	32.537
Sept. 1	9	Dorpat 2204, (1st *).	. .	4	I, II, VIII, IX.	332 4 54.0	57.0	59.0	62.0	55.0	50.1	56.18	24.618	+ 0.558	25.185
	10	Dorpat 2204, (2d *).	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	25.075	. .	25.634
	11	63 Ophiuchi	. .	3	IV–VI.	343 45 3.7	7.1	7.5	13.3	4.0	58.9	5.75	33.285	. .	33.844
	12	Lacaille 7534. . .	. .	3	IV–VI.	359 25 4.0	7.2	9.8	17.0	3.6	59.0	6.77	26.102	. .	26.663
	13	Anon. 18h 1m 54s .	8.0	3	IV–VI.	350 0 4.2	6.0	8.7	13.8	3.8	58.7	5.87	32.298	. .	32.858
	14	Anon. 18h 5m 55s .	9.5	1	V.	340 0 2.1	6.0	7.0	12.2	2.5	57.1	4.48	35.930	. .	36.488
	15	Anon. 18h 6m 1s . .	9.4	2	VII, IX.	“ “ “	“	“	“	“	“	“	34.327	. .	34.707
	16	Nadir	. .	.	. .	100 0 5.0	9.8	8.8	18.0	8.9	6.1	9.43	29.623	. .	. .
	17	Lacaille 7896. . .	. .	3	IV–VI.	356 20 5.7	10.9	12.9	18.4	6.7	2.0	9.43	38.539	. .	39.099
	18	Anon. 18h 49m 23s .	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	31.927	. .	32.487
	19	Weisse XVIII, 1344	. .	3	IV–VI.	333 35 4.8	8.0	9.4	13.8	5.9	59.8	6.95	31.270	. .	31.829
	20	O. Arg. S. 19083 .	9.5	3	III–VII.	335 20 4.3	7.0	8.0	13.3	5.0	0.0	6.27	34.312	. .	34.873
	21	Anon. 19h 7m 5s .	8.7	2	IV–VI.	341 5 3.4	9.1	9.0	16.8	5.3	0.0	7.27	25.157	. .	25.711
	22	O. Arg. S. 19451 .	9.5	1	V.	345 20 4.0	7.0	7.1	12.2	3.0	59.0	5.38	29.652	. .	30.210
	23	O. Arg. S. 19748 .	9.0	2	III, V.	338 45 4.2	7.4	9.9	14.0	3.2	59.0	6.28	30.348	. .	30.902
	24	Anon. 19h 34m 6s .	9.0	3	III–VII.	343 35 3.8	7.5	8.6	14.0	4.1	0.3	6.38	33.058	. .	33.620
	25	Lacaille 8237 . .	. .	3	IV–VI.	1 15 4.4	9.9	10.0	18.5	5.0	1.0	8.13	33.971	. .	34.532
	26	O. Arg. S. 20123 .	. .	2	III–VII.	346 30 4.7	8.5	10.0	14.9	4.0	0.0	7.02	35.351	. .	35.917
2	27	Lacaille 7490 . .	. .	2	VI, VIII.	359 5 6.7	9.9	12.3	16.8	8.1	3.2	9.50	28.258	+ 0.673	28.959
	28	Nadir	. .	.	. .	100 0 2.1	7.5	3.5	13.3	7.4	5.1	6.48	29.534	. .	. .
	29	Lacaille 8064 . .	. .	2	VIII, IX.	355 45 3.0	9.0	6.1	11.6	4.0	59.6	5.55	32.757	. .	33.481
	30	Anon. 19h 28m 42s .	9.5	2	III–VII.	346 15 3.8	6.3	7.8	10.3	4.3	0.4	5.48	30.833	. .	31.513
	31	Anon. 19h 34m 14s .	. .	3	III–VII.	351 25 5.0	9.0	9.7	15.0	6.1	2.7	7.92	32.955	. .	33.634
	32	B. A. C. 6786 . .	. .	3	III–VII.	345 55 6.0	8.9	9.7	12.7	7.4	2.9	7.94	31.687	. .	32.365
	33	B. A. C. 6844 . .	. .	4	V, VII, IX.	302 15 5.9	10.2	12.1	15.8	10.1	5.2	9.88	37.835	. .	38.541
	34	Anon. 20h 26m 39s .	. .	3	III–VII.	318 55 4.3	6.6	7.8	10.6	7.0	3.9	6.70	28.643	. .	29.316
	35	Anon. 20h 33m 55s .	. .	4	III, V, VII, IX.	328 0 5.9	8.7	11.0	12.5	8.8	4.3	8.53	32.734	. .	33.416
	36	Lacaille 8559 . .	. .	2	VII, IX.	362 20 6.2	10.0	11.0	17.0	7.5	3.1	9.13	37.350	. .	38.073
	37	Anon. 20h 51m 1s .	. .	2	V, VII.	“ “ “	“	“	“	“	“	“	33.251	. .	33.938
	38	Lacaille 8699. . .	. .	1	IX.	356 5 4.9	11.0	11.4	15.5	7.1	3.0	8.82	32.645	. .	33.366
	39	Lacaille 8737. . .	. .	3	V, VII, IX.	359 55 5.4	11.2	10.3	16.9	7.9	3.0	9.12	37.203	. .	37.907
	40	Lacaille 8804. . .	. .	3	III–VII.	354 20 7.1	12.8	13.1	16.7	9.7	5.4	11.13	39.242	. .	39.922
	41	O. Arg. S. 21492. .	. .	4	III, V, VII, IX.	345 5 8.2	14.2	14.1	17.5	12.0	6.5	12.08	27.144	. .	27.833
	42	Lacaille 8896. . .	. .	3	IV–VI.	358 0 2.4	10.5	9.2	16.5	6.4	0.3	7.55	34.002	. .	34.677
	43	O. Arg. S. 21687. .	. .	3	III–VII.	346 55 3.0	7.8	8.5	12.8	5.7	0.3	6.35	35.793	. .	36.471
	44	Anon. 22h 3m 13s .	. .	3	III–VII.	359 5 7.0	12.7	12.9	19.9	7.8	4.0	10.72	39.639	. .	40.320
	45	Anon. 22h 26m 42s .	. .	2	III–VII.	356 10 2.4	10.1	9.0	14.4	5.4	1.0	7.05	30.135	. .	30.819
3	46	Lacaille 7459. . .	. .	3	III–VII.	352 30 2.9	5.0	4.0	8.9	3.9	0.0	4.12	28.642	+ 0.582	29.230
	47	Lacaille 7499. . .	. .	4	I, II, VIII, IX.	357 55 4.3	7.1	7.1	12.9	7.0	2.0	6.73	31.304	. .	31.917
	48	Lacaille 7504. . .	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	27.253	. .	27.837
	49	O. Arg. S. 17558. .	. .	3	III–VII.	346 45 4.5	5.6	6.8	8.3	5.0	3.0	5.53	32.688	. .	33.275
	50	Lamont 5993. . .	. .	3	V, VI, VIII.	316 20 4.6	2.7	2.1	5.1	5.7	3.1	3.88	34.430	. .	35.021
	51	O. Arg. S. 17927. .	8.0	3	III–VII.	347 50 4.1	5.9	7.0	9.2	4.0	2.7	5.48	30.527	. .	31.114
	52	Nadir	. .	.	. .	100 0 3.0	5.1	3.0	10.3	8.0	6.0	5.90	29.486	. .	. .
	53	Weisse XVIII, 972 .	9.0	3	III–VII.	331 25 2.4	3.8	5.1	6.0	4.4	1.0	3.78	32.335	. .	32.919
	54	Anon. 18h 51m 54s .	9.0	3	III–VII.	327 15 4.0	4.4	3.4	6.0	6.2	0.9	4.15	31.638	. .	32.221
	55	Anon. 18h 55m 50s .	9.5	3	III–VII.	326 20 4.5	6.0	5.7	7.0	8.0	3.1	5.72	26.475	. .	27.058
	56	Weisse XVIII, 1525	. .	2	V, VI.	305 15 4.0	4.0	4.0	7.4	6.7	4.0	5.02	32.955	. .	33.540
	57	Weisse XVIII, 1539	. .	2	VII, IX.	“ “ “	“	“	“	“	“	“	30.851	. .	31.460
	58	Lalande 36229, (1st *)	. .	4	I, II, VIII, IX.	280 5 3.1	4.0	5.1	8.2	8.8	5.7	5.82	30.816	. .	31.367
	59	Lalande 36229, (2d *)	. .	3	IV–VI.	“ “ “	“	“	“	“	“	“	30.498	. .	31.078
	60	Anon. 19h 17m 16s .	8.0	3	III–VII.	342 10 3.0	4.0	5.7	8.0	5.0	0.0	4.28	30.800	. .	31.386
	61	Anon. 19h 28m 31s .	. .	2	V, IX.	0 35 3.0	5.1	7.0	11.2	4.7	1.8	5.47	28.105	. .	28.722
	62	O. Arg. S. 19924. .	9.0	3	III–VII.	345 55 3.7	5.2	5.0	7.0	4.1	59.7	4.12	33.952	. .	34.539
	63	Anon. 19h 46m 39s .	. .	3	III–VII.	338 35 3.4	4.3	5.0	8.0	5.0	59.0	4.12	37.042	. .	37.627
	64	O. Arg. S. 20145. .	8.0	2	III–VII.	341 50 3.3	6.0	6.5	10.1	7.0	1.0	5.65	27.225	. .	27.811
	65	Anon. 20h 29m 42s .	. .	3	III–VII.	352 45 2.8	7.4	6.5	11.3	4.7	0.6	5.55	31.140	. .	31.728
	66	Anon. 20h 37m 47s .	9.5	2	IV–VI.	346 15 1.3	4.0	5.1	7.9	3.1	59.0	3.40	27.552	. .	28.136

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.094	69.8	62.5	− 1 47.0	S. 63 33 19.0	1 54.0	− 24 41 33.7	− 1.4	B.	
2	. .	. .	61.5	− 0 32.1	75 29 34.1	3 36.9	− 36 39 31.7	+ 2.3	B.	
3	30.102	67.8	60.3	− 4 40.6	38 55 24.6	46.2	− 0 2 31.5	− 4.4	B.	
4	. .	. .	. .	− 4 5.3	82 15 57.8	6 37.0	− 43 28 55.6	+ 4.3	B.	
5	. .	. .	60.8	− 1 55.2	82 18 7.9	6 39.7	− 43 31 8.4	+ 4.3	B.	
6	. .	. .	. .	− 2 41.4	71 42 23.8	2 51.4	− 32 51 35.9	+ 2.4	B.	
7	30.106	66.6	60.2	− 3 59.2	S. 79 51 6.4	5 8.9	− 41 2 36.0	+ 3.9	B.	
8	. .	. .	. .	− 1 19.5	N. 0 56 12.8	0.9	+ 39 49 52.9	− 2.2	B.	
9	. .	. .	. .	+ 2 30.6	S. 52 7 26.8	1 13.8	− 13 15 1.4	− 9.3	D.	
10	. .	. .	. .	+ 2 16.6	52 7 12.8	1 13.8	− 13 14 47.4	− 9.4	D.	
11	. .	. .	59.0	− 2 0.5	63 43 5.2	1 56.1	− 24 51 22.1	− 5.1	D.	
12	. .	. .	. .	+ 1 44.4	79 26 51.2	4 59.8	− 40 38 11.8	+ 0.5	D.	
13	. .	. .	. .	− 1 29.6	69 58 36.3	2 36.9	− 31 7 34.0	− 2.4	D.	
14	. .	. .	. .	− 3 23.5	59 56 41.0	1 39.4	− 21 4 41.1	− 5.6	D.	Preceding μ Sagittarii 3ˢ.
15	30.220	65.0	58.0	− 2 27.6	59 57 36.9	1 39.5	− 21 5 37.1	− 5.6	D.	Following μ Sagittarii 4ˢ.
16	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
17	30.226	64.5	56.2	− 4 45.6	76 15 23.9	3 52.4	− 37 25 37.1	+ 1.0	D.	
18	. .	. .	. .	− 1 17.9	76 18 51.5	3 53.5	− 37 29 5.7	+ 1.1	D.	
19	. .	. .	. .	− 0 57.3	53 34 9.6	1 18.4	− 14 41 48.8	− 5.6	D.	
20	. .	. .	. .	− 2 32.8	55 17 33.5	1 23.5	− 16 25 17.8	− 4.8	D.	North star.
21	30.220	64.0	55.7	+ 2 14.2	61 7 21.5	1 44.8	− 22 15 27.0	− 2.8	D.	
22	. .	. .	. .	− 0 6.6	65 19 58.8	2 5.6	− 26 28 25.2	− 1.3	D.	
23	. .	. .	55.1	− 0 28.2	58 44 38.0	1 35.4	− 19 52 34.1	− 2.7	D.	
24	. .	. .	. .	− 1 53.5	63 33 12.9	1 56.2	− 24 41 29.8	− 1.2	D.	
25	30.218	62.5	55.0	− 2 22.1	81 12 46.1	5 59.1	− 42 25 5.9	− 3.6	D.	Faint.
26	. .	. .	. .	− 3 5.6	66 27 1.5	2 12.6	− 27 35 34.8	+ 0.0	D.	Cloudy.
27	30.289	66.2	61.6	+ 0 32.6	79 5 42.1	4 49.3	− 40 16 52.1	+ 0.2	B.	
28	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	B.	
29	. .	. .	. .	− 1 49.1	75 43 16.5	3 43.6	− 36 53 20.8	+ 1 6	B.	Circle reading recorded 345° 45′.
30	. .	. .	. .	− 0 47.4	66 14 18.1	2 10.8	− 27 22 49.6	− 0.6	B.	
31	30.295	63.1	57.7	− 1 53.9	71 23 14.0	2 50.2	− 32 32 25.0	+ 1.0	B.	
32	. .	. .	. .	− 1 14.1	65 53 53.8	2 8.9	− 27 2 23.5	− 0.3	B.	
33	. .	. .	57.5	− 4 28.0	82 10 41.8	6 38.9	− 43 23 41.5	+ 4.1	B.	
34	. .	. .	57.2	+ 0 21.4	38 55 28.1	46.8	− 0 2 35.7	− 4.5	B.	
35	. .	. .	. .	− 1 47.1	47 58 21.4	1 6.6	− 9 5 48.8	− 2.4	B.	
36	30.301	62.0	56.2	− 4 13.3	82 15 55.8	6 44.1	− 43 29 0.7	+ 4.6	B.	
37	. .	. .	. .	− 2 3.4	82 18 5.7	6 46.9	− 43 31 13.3	+ 4.6	B.	
38	. .	. .	55.5	− 1 45.5	76 3 23.3	3 49.9	− 37 13 33.9	+ 3.4	B.	Cloudy until last wire; good observation.
39	. .	. .	. .	− 4 8.1	79 51 1.1	5 13.9	− 41 2 35.7	+ 4.2	B.	
40	30.300	61.1	55.5	− 5 11.4	74 14 59.7	3 23.3	− 35 24 43.8	+ 3.2	B.	
41	. .	. .	. .	+ 1 7.8	65 6 19.9	2 4.8	− 26 14 45.5	+ 1.7	B.	
42	. .	. .	54.7	− 2 26.6	77 57 40.9	4 26.5	− 39 8 28.2	+ 3.8	B.	
43	. .	. .	. .	− 3 23.0	66 51 43.4	2 15.6	− 28 0 19.7	+ 2.3	B.	
44	30.297	60.5	54.1	− 5 23.9	78 59 46.8	4 51.3	− 40 10 58.8	+ 3.8	B.	
45	30.290	60.0	53.0	− 0 25.7	76 9 41.4	3 52.7	− 37 19 54.9	+ 3.3	B.	
46	. .	. .	66.9	+ 0 24.1	72 30 28.2	2 58.3	− 33 39 47.3	− 2.2	D.	
47	. .	. .	. .	− 1 0.0	77 54 6.7	4 18.7	− 39 4 46.2	− 0.1	D.	
48	. .	. .	. .	+ 1 7.7	77 56 14.4	4 19.7	− 39 6 54.7	− 0.1	D.	
49	. .	. .	. .	− 1 42.7	66 43 22.9	2 11.5	− 27 51 55.1	− 3.6	D.	
50	. .	. .	. .	− 2 37.4	36 17 26.5	41.8	+ 2 35 31.0	− 13.4	D.	
51	30.300	69.7	65.5	− 0 34.9	67 49 30.6	2 18.9	− 28 58 10.2	− 2.8	D.	
52	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
53	30.308	69.3	64.7	− 1 31.5	51 23 32.3	1 11.2	− 12 31 4.2	− 6.8	D.	
54	. .	. .	. .	− 1 9.6	47 13 54.6	1 1.6	− 8 21 16.9	− 7.5	D.	
55	. .	. .	. .	+ 1 32.0	46 21 37.8	59.8	− 7 28 58.3	− 7.5	D.	
56	. .	. .	. .	− 1 51.0	25 13 14.0	27.0	+ 13 39 58.3	− 12.9	D.	
57	30.312	69.0	63.6	− 0 45.8	25 14 19.3	27.0	+ 13 38 53.0	− 12.8	D.	
58	. .	. .	. .	− 0 42.8	0 4 23.0	0.1	+ 38 49 16.2	− 16.6	D.	
59	. .	. .	. .	− 0 33.8	0 4 32.0	0.1	+ 38 49 7.1	− 16.6	D.	
60	. .	. .	62.7	− 0 43.4	62 9 20.8	1 48.2	− 23 17 29.7	− 2.0	D.	
61	30.312	68.0	61.9	+ 0 40.0	80 35 45.5	5 33.2	− 41 47 39.4	+ 3.5	D.	
62	. .	. .	. .	− 2 22.3	65 52 41.8	2 7.7	− 27 1 10.2	− 0.3	D.	
63	. .	. .	. .	− 3 59.3	58 31 4.8	1 33.7	− 19 38 59.3	− 2.0	D.	
64	. .	. .	. .	+ 1 8.5	61 51 14.2	1 47.2	− 22 59 22.2	− 0.9	D.	
65	30.308	65.7	59.3	− 0 54.1	72 44 11.4	3 3.6	− 33 53 35.8	+ 2.6	D.	Star preceding 5ˢ or 6ˢ, north 2′ or 3′.
66	. .	. .	. .	+ 0 58.3	S. 66 16 1.7	2 10.6	− 27 24 33.1	+ 1.3	D.	Faint; star very faint 2′ or 3′ north.

Date.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Sept. 4	1	B. A. C. 6045	. .	2	V, VII.	353 40 1.6	3.0	2.1	4.7	2.8	59.5	2.28	26.915	+ 0.716	27.636
	2	O. Arg. S. 17512.	. .	2	IV, VII.	343 5 1.9	0.0	0.6	0.2	2.8	0.9	1.07	26.815	. .	27.538
	3	B. A. C. 6153	. .	2	III–VII.	344 40 3.5	1.9	3.1	2.5	4.2	1.6	2.80	31.762	. .	32.515
	4	Nadir	. .	.	. .	100 0 2.6	3.7	0.5	6.0	6.9	6.9	4.43	29.426	. .	. .
	5	Lacaille 7960.	. .	2	IV–VI.	355 5 2.5	3.6	4.0	3.6	1.9	1.3	2.82	25.640	. .	26.359
	6	12 Aquilæ	. .	2	VII, IX.	324 50 4.0	2.1	2.2	1.2	6.2	3.9	3.27	33.651	. .	34.390
	7	Lacaille 8064.	. .	3	III–VII.	355 45 0.9	2.7	2.5	2.8	1.3	2.6	2.13	32.489	. .	33.212
	8	O. Arg. S. 19758.	. .	3	III–VII.	346 40 1.0	1.0	2.6	2.3	1.0	59.4	1.22	32.052	. .	32.773
	9	Anon. $19^h 34^m 56^s$	. .	3	III, V, VIII.	352 50 0.2	1.2	1.8	3.0	0.8	2.6	1.60	33.836	. .	34.558
	10	Lacaille 8302.	. .	3	III–VII.	351 25 0.5	1.1	4.9	3.8	1.8	1.9	2.33	34.048	. .	34.770
	11	Lacaille 8307.	. .	2	VI, VIII.	2 5 1.2	3.0	4.0	6.1	3.8	1.0	3.18	30 908	. .	31.654
	12	Anon. $20^h 8^m 29^s$	. .	4	III, V, VII, IX.	358 15 1.0	4.5	6.4	9.0	5.8	59.5	4.37	32.999	. .	33.737
	13	Lacaille 8529.	. .	4	III, V, VII, IX.	350 50 1.1	3.0	3.0	6.2	1.5	0.9	2.62	21.131	. .	21.865
	14	Lacaille 8574.	. .	2	VI, VIII.	349 35 2.2	4.3	5.8	7.3	4.5	0.2	4.05	36.458	. .	37.198
	15	Lacaille 8633.	. .	3	III–VII.	358 5 2.5	4.8	4.0	9.0	4.9	59.9	4.18	31.662	. .	32.386
	16	Anon. $21^h 0^m 55^s$	. .	3	III–VII.	348 55 1.2	3.0	5.0	6.3	3.9	0.0	3.23	30.260	. .	30.982
	17	18 Aquarii	. .	3	V, VII, IX.	332 20 3.1	3.4	6.1	6.1	5.5	2.1	4.35	32.333	. .	33.067
	18	O. Arg. S. 21442.	. .	3	III–VII.	338 45 4.8	5.9	8.0	7.8	5.5	1.6	5.60	38.072	. .	38.792
	19	O. Arg. N. 23362	. .	2	IV, VII.	266 5 0.3	1.5	6.3	8.9	5.2	6.8	4.83	36.855	. .	37.569
7	20	B. A. C. 6038	. .	3	III–VII.	353 40 1.5	1.3	2.8	1.8	3.0	1.5	1.98	25.183	+ 0.685	25.875
	21	O. Arg. S. 17466	. .	3	III–VII.	343 5 1.2	57.1	0.8	0.0	1.7	1.2	0.33	31.719	. .	32.408
	22	Anon. $18^h 3^m 11^s$,(1st*)	. .	1	IX.	336 4 0.9	56.5	0.8	57.3	59.8	0.6	59.32	35.171	. .	35.648
	23	Anon. $18^h 3^m 11^s$,(2d *)	. .	2	IV–VII.	" " "	"	"	"	"	"	"	34.962	. .	35.897
	24	Nadir	. .	.	. .	100 0 0.5	0.0	0.0	3.0	4.0	5.1	2.10	29.382	. .	. .
	25	Anon. $18^h 39^m 29^s$	. .	2	V, VII.	356 0 2.0	0.0	2.2	3.1	59.5	59.8	1.10	30.910	. .	31.607
	26	τ Sagittarii	. .	2	IV, VI.	346 45 3.6	0.3	3.9	1.5	2.0	3.5	2.47	33.276	. .	33.969
	27	Anon. $19^h 6^m 53^s$	. .	2	IV, IX.	327 25 4.3	1.2	2.6	2.3	4.5	2.1	2.83	28.983	. .	29.689
	28	Anon. $19^h 39^m 8^s$	. .	1	VII.	347 35 3.9	2.7	5.5	5.3	4.3	3.4	4.18	34.989	. .	35.696
	29	τ^1 Capricorni	. .	3	III–VII.	334 30 1.9	59.3	1.8	0.8	2.1	0.3	1.03	33.063	. .	33.751
	30	Lacaille 8642.	. .	1	IX.	352 15 0.6	0.0	2.0	4.4	1.1	59.5	1.27	29.405	. .	30.148
	31	Anon. $21^h 10^m 8^s$	. .	3	IV, VI, IX.	340 54 59.7	57.8	59.0	61.0	59.1	55.4	58.67	18.612	. .	19.303
9	32	B. A. C. 6038	. .	3	III–VII.	353 40 1.4	3.1	4.8	7.9	1.5	58.8	2.92	25.421	+ 0.681	26.109
	33	Anon. $18^h 5^m 12^s$	. .	2	IV, VI.	339 55 2.8	5.5	9.0	9.1	5.1	0.6	5.35	28.576	. .	29.263
	34	Nadir	. .	.	. .	100 0 0.5	3.7	2.9	9.1	3.2	2.3	3.62	29.435	. .	. .
	35	Lacaille 7960.	. .	3	III–VII.	355 10 4.2	8.5	10.0	12.3	5.5	0.0	6.75	35.524	. .	36.212
	36	Lacaille 8008.	. .	3	III–VII.	" " "	"	"	"	"	"	"	25.317	. .	26.005
	37	Dorpat 2501, (2d *)	. .	3	III–VII.	323 50 4.0	3.6	6.1	8.7	4.5	2.3	4.87	27.405	. .	28.087
	38	Anon. $19^h 29^m 15^s$	. .	3	IV, VI, IX.	358 55 3.6	7.1	8.9	13.1	3.5	58.6	5.80	37.359	. .	38.065
	39	Anon. $19^h 39^m 53^s$	9.5	3	III–VII.	347 35 4.0	6.3	10.0	12.0	4.5	1.0	6.30	32.819	. .	33.505
	40	O. Arg. S. 20078.	6.5	3	III–VII.	346 50 3.0	5.0	7.0	9.6	3.9	59.9	4.73	30.984	. .	31.670
	41	B. A. C. 6877	. .	3	III–VII.	351 20 2.1	5.3	6.0	10.0	4.0	58.1	4.25	37.119	. .	37.806
	42	Weisse XX, 743.	. .	3	III–VII.	316 50 4.1	4.3	5.1	7.1	4.3	1.0	4.32	29.415	. .	30.096
	43	B. A. C. 7148	. .	2	VI, IX.	347 20 3.4	6.8	8.9	10.5	2.8	0.9	5.55	32.066	. .	32.778
	44	B. A. C. 7212	6.0	3	III–VII.	357 15 3.3	8.0	10.1	13.7	4.4	oblit.	6.80	32.861	. .	33.550
	45	Lacaille 8642.	. .	3	III–VII.	352 15 3.3	7.3	8.0	13.3	4.8	58.5	5.87	29.806	. .	30.493
	46	Anon. $21^h 0^m 54^s$	. .	3	III–VII.	348 55 4.5	8.0	10.1	14.7	5.0	0.1	7.07	30.403	. .	31.090
	47	Anon. $21^h 10^m 9^s$	8.0	3	III–VII.	341 0 3.0	7.7	8.0	13.8	5.0	0.3	6.30	28.605	. .	29.290
	48	Anon. $21^h 17^m 52^s$	. .	2	VI, VIII.	342 45 1.5	5.1	6.0	8.9	2.8	56.8	3.52	36.660	. .	37.362
	49	Anon. $21^h 40^m 43^s$	. .	2	VII, IX.	320 0 2.0	4.3	7.1	8.1	4.4	0.8	4.45	28.015	. .	28.716
	50	O. Arg. S. 21909.	. .	3	III–VII.	342 10 2.6	6.3	9.5	11.3	5.0	58.7	5.57	35.725	. .	36.410
	51	Weisse XXII, 303	9.0	3	III, V, VIII.	316 30 3.9	4.7	5.7	9.1	4.5	0.4	4.72	27.728	. .	28.411
10	52	63 Ophiuchi	. .	2	VI, IX.	343 45 4.0	4.8	5.9	10.3	4.0	0.1	4.85	33.077	+ 0.567	33.673
	53	B. A. C. 6145	. .	3	III–VII.	349 35 3.7	6.1	9.0	12.8	4.7	0.0	6.05	27.989	. .	28.562
	54	O. Arg. S. 17871.	7.0	3	III–VII.	340 40 4.0	6.5	7.1	11.9	5.0	0.5	5.83	36.183	. .	36.754
	55	Nadir	. .	.	. .	100 0 4.5	8.3	6.3	15.1	8.4	7.0	8.27	29.577	. .	. .
	56	Anon. $18^h 34^m 27^s$	9.5	1	V.	356 50 4.9	8.0	10.1	14.0	5.9	oblit.	7.55	29.860	. .	30.427
	57	B. A. C. 6488	. .	3	III–VII.	334 20 5.0	6.3	7.1	9.8	5.8	0.6	5.77	29.565	. .	30.135
	58	Lacaille 7990.	. .	3	IV–VI.	356 50 5.1	8.0	10.9	15.0	5.8	oblit.	8.05	31.164	. .	31.733
	59	Lamont 6587.	. .	3	IV–VI.	320 10 5.0	5.1	8.5	8.0	6.0	2.0	5.77	26.774	. .	27.341
	60	Weisse XVIII, 1542.	. .	3	III–VII.	" " "	"	"	"	"	"	"	25.535	. .	26.102
	61	Anon. $19^h 34^m 56^s$	7.0	3	III–VII.	352 50 5.0	8.0	9.0	13.8	6.0	0.8	7.10	34.293	. .	34.866
	62	O. Arg. S. 20124.	8.0	3	III–VII.	344 20 5.0	7.0	10.0	11.3	6.8	2.0	7.02	33.273	. .	33.845
	63	Anon. $19^h 56^m 31^s$	6.5	3	IV–VI.	282 10 4.0	4.5	7.1	10.3	7.0	5.0	6.32	31.409	. .	31.974
	64	O. Arg. S. 20339.	. .	3	III–VII.	334 40 4.0	6.0	7.0	10.0	5.4	0.0	5.40	35.505	. .	36.075
	65	Anon. $20^h 10^m 8^s$	9.0	3	III–VII.	343 10 2.0	5.0	7.2	9.2	4.0	59.0	4.40	24.611	. .	25.182

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.216	78.2	71.4	+ 1 14.0	S. 73 41 16.3	3 9.3	− 34 50 46.4	− 1.5	B.	
2	. .	. .	. .	+ 1 17.1	63 6 18.1	1 50.4	− 24 14 29.2	− 4.8	B.	Larger star preceded 2ˢ,
3	. .	. .	. .	− 1 18.8	64 38 44.0	1 58.2	− 25 47 2.9	− 4.0	B.	
4	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
5	30.232	72.1	68.8	+ 1 53.9	75 6 56.8	3 29.1	− 36 16 46.6	+ 1.2	B.	
6	. .	. .	. .	− 2 17.6	44 47 45.6	56.1	− 5 55 2.5	− 8.0	B.	
7	. .	. .	. .	− 1 40.7	75 43 21.4	3 38.3	− 36 53 20.5	+ 1.9	B.	
8	. .	. .	. .	− 1 26.9	66 38 34.3	2 10.3	− 27 47 5.4	− 0.2	B.	
9	. .	. .	. .	− 2 22.9	72 47 38.7	3 0.8	− 33 57 0.2	− 0.3	B.	
10	. .	. .	. .	− 2 29.5	71 22 32.8	2 46.6	− 32 31 40.2	+ 1.7	B.	
11	30.244	71.0	67.0	− 0 51.8	82 4 11.4	6 25.1	− 43 16 57.2	+ 4.5	B.	
12	. .	. .	66.5	− 1 57.2	78 13 7.2	4 25.2	− 39 23 53.2	+ 3.7	B.	
13	30.250	70.3	65.2	+ 4 14.3	70 54 16.9	2 42.9	− 32 3 20.6	+ 2.4	B.	
14	. .	. .	. .	− 3 45.8	69 31 18.2	2 31.3	− 30 40 10.3	+ 2.2	B.	
15	. .	. .	64.3	− 1 15.2	78 3 49.0	4 42.8	− 39 14 52.5	+ 4.1	B.	
16	. .	. .	. .	− 0 30.8	68 54 32.5	2 26.7	− 30 3 19.9	+ 2.4	B.	
17	. .	. .	64.4	− 1 36.1	52 18 28.2	1 13.7	− 13 26 2.7	− 0.2	B.	
18	. .	. .	. .	− 4 35.9	S. 58 40 29.7	1 33.5	− 19 48 24.0	+ 1.0	B.	
19	30.243	68.9	63.5	− 3 57.4	N. 13 58 52.6	14.2	+ 52 52 46.1	+ 0.2	B.	Rev. read carefully on side next to screen.
20	. .	. .	. .	+ 2 9.1	S. 73 42 11.0	3 4.7	− 34 51 36.5	− 1.4	B.	
21	. .	. .	. .	− 1 15.5	63 3 44.9	1 47.3	− 24 11 52.9	− 4.8	B.	
22	29.868	79.4	77.5	− 2 57.1	56 2 2.2	1 21.1	− 17 9 44.1	− 6.8	B.	
23	. .	. .	. .	− 3 4.9	56 1 54.4	1 21.1	− 17 9 36.2	− 6.8	B.	
24	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
25	29.868	79.0	76.8	− 0 50.3	75 59 10.8	3 36.2	− 37 9 7.7	+ 1.3	B.	
26	29.866	78.8	76.4	− 2 4.4	66 42 58.1	2 7.1	− 27 51 25.9	− 1.1	B.	
27	. .	. .	. .	+ 0 9.7	47 25 12.6	59.9	− 8 32 33.2	− 6.6	B.	Small star preceded about 10ˢ, north.
28	. .	. .	. .	− 2 58.7	67 32 5.5	2 12.5	− 28 40 38.7	− 0.5	B.	
29	. .	. .	. .	− 1 57.6	54 28 3.4	1 17.0	− 15 35 41.2	− 1.2	B.	
30	. .	. .	. .	− 0 4.7	72 14 56.6	2 50.5	− 33 24 7.9	+ 3.4	B.	
31	29.843	77.0	73.6	+ 5 34.2	61 0 32.9	1 39.4	− 22 8 33.0	+ 5.8	B.	
32	. .	. .	. .	+ 2 1.8	73 42 4.7	3 10.7	− 34 51 36.2	− 2.3	B.	
33	30.053	71.0	64.5	+ 0 23.1	59 55 28.4	1 37.5	− 21 3 26.7	− 6.1	B.	
34	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
35	30.070	69.6	63.6	− 3 14.8	75 6 51.9	3 30.2	− 36 16 42.8	+ 1.6	B.	
36	. .	. .	. .	+ 2 5.0	75 12 11.8	3 31.5	− 36 22 4.0	+ 1.8	B.	
37	. .	. .	63.1	+ 0 59.9	43 51 4.7	54.6	− 4 58 20.0	− 7.3	B.	
38	. .	. .	62.0	− 4 13.0	78 50 52.8	4 40.7	− 40 1 54.2	+ 4.0	B.	Faint.
39	30.060	68.5	61.7	− 1 49.9	67 33 16.4	2 17.0	− 28 41 54.2	− 0.4	B.	
40	. .	. .	. .	− 0 52.3	66 49 12.4	2 12.4	− 27 57 45.5	+ 0.8	B.	
41	. .	. .	. .	− 4 4.9	71 15 59.4	2 46.5	− 32 25 6.6	+ 2.2	B.	
42	30.072	68.1	61.1	− 0 3.0	36 50 1.3	42.8	+ 2 2 55.2	− 5.0	B.	Barom. and therms. taken at 20ʰ 7ᵐ 10ˢ.
43	. .	. .	. .	− 1 27.1	67 18 38.5	2 15.7	− 28 27 14.9	+ 2.1	B.	Cloudy over first half of field.
44	30.075	67.2	60.6	− 1 51.3	77 13 15.5	4 6.4	− 38 23 42.6	+ 4.6	B.	Corr. −1″.98 applied to mean of A, B, C, D.
45	. .	. .	. .	− 0 15.4	72 14 50.4	2 56.6	− 33 24 7.7	+ 3.6	B.	
46	. .	. .	. .	− 0 34.2	68 54 32.9	2 27.2	− 30 3 20.8	+ 2.9	B.	
47	. .	. .	. .	+ 0 22.2	61 0 28.5	1 42.9	− 22 8 32.1	+ 1.5	B.	
48	30.087	66.8	60.0	− 3 51.0	62 41 12.6	1 50.3	− 23 49 23.6	+ 2.0	B.	Barom. and therms. taken at 21ʰ 25ᵐ 15ˢ.
49	. .	. .	. .	+ 0 40.2	40 0 44.7	0 48.0	− 1 7 53.5	− 0.9	B.	Star 5ᵐ south, preceding 10ˢ. Star, same rev., preceding 8ˢ.
50	. .	. .	. .	− 3 21.2	62 6 44.3	1 47.9	− 23 14 53.0	+ 2.6	B.	
51	30.073	65.0	58.9	+ 0 49.8	36 30 54.5	42.4	+ 2 22 2.3	+ 0.4	B.	
52	. .	. .	65.0	− 1 55.2	63 43 9.7	1 54.4	− 24 51 24.8	− 4.9	D.	
53	. .	. .	. .	+ 0 45.0	69 35 51.1	2 31.4	− 30 44 43.2	− 2.2	D.	
54	30.129	69.0	64.6	− 3 31.9	60 36 34.0	1 40.5	− 21 44 35.2	− 5.1	D.	
55	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
56	30.132	68.7	62.5	− 0 13.4	76 49 54.2	3 58.7	− 38 0 13.6	+ 1.4	D.	Faint. Corr. −1″.70 applied to mean of A, B, C, D.
57	. .	. .	. .	− 0 4.2	54 20 1.5	1 19.6	− 15 27 41.9	− 5.1	D.	
58	. .	. .	. .	− 0 54.3	76 49 13.8	3 59.4	− 37 59 33.9	+ 2.3	D.	Corr. −1″.70 applied to mean of A, B, C, D.
59	. .	. .	. .	+ 1 23.2	40 11 29.0	48.4	− 1 18 38.1	− 9.2	D.	
60	30.134	68.0	60.5	+ 2 2.0	40 12 7.7	48.4	− 1 19 16.9	− 9.2	D.	
61	30.135	66.5	59.0	− 2 32.5	72 47 34.6	3 3.2	− 33 56 58.6	+ 2.2	D.	Star 5ᵐ south.
62	. .	. .	58.3	− 2 0.5	64 18 6.5	1 58.9	− 25 26 26.2	+ 0.2	D.	
63	. .	. .	. .	− 1 1.8	2 9 4.5	2.2	+ 36 44 32.6	− 13.3	D.	
64	. .	. .	. .	− 3 10.5	54 36 54.9	1 20.9	− 15 44 36.5	− 1.9	D.	
65	30.140	65.0	58.1	+ 2 30.7	S. 63 12 35.1	1 53.5	− 24 20 49.4	+ 0.4	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Sept. 10	1	Anon. $20^{h}\ 31^{m}\ 52^{s}$.	. .	2	VI, VIII.	332 0 2.0	3.2	6.5	9.0	3.3	59.0	3.83	37.100	+ 0.567	37.685
	2	Weisse XX, 767 .	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	34.679	. .	35.277
	3	Anon. $20^{h}\ 37^{m}\ 0^{s}$.	7.5	3	IV–VI.	354 30 1.0	5.9	8.0	11.8	3.7	59.0	4.90	32.866	. .	33.435
	4	Anon. $20^{h}\ 39^{m}\ 3^{s}$.	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	33.950	. .	34.519
11	5	Moon N. L. . . .	. .	5	I–IX.	336 30 3.9	5.4	6.8	6.5	6.7	1.4	5.12	29.162	+ 0.689	29.859
	6	95 Herculis, (2d *) .	. .	3	IV–VI.	297 20 0.3	1.5	0.5	oblit.	4.0	0.0	2.05	34.840	. .	35.528
	7	O. Arg. S. 17861. .	. .	3	III–VII.	347 44 59.2	61.1	63.2	65.7	60.8	57.3	61.22	31.997	. .	32.691
	8	Nadir	. .	.	. .	100 0 0.1	3.7	0.3	8.0	4.5	2.7	3.22	29.414	. .	. .
	9	ζ Aquilæ	. .	3	III–VII.	304 5 59.1	1.1	1.5	4.1	4.3	1.1	1.87	29.599	. .	30.285
	10	Anon. $20^{h}\ 31^{m}\ 0^{s}$.	9.5	2	IV, VI.	340 40 1.3	2.8	3.3	8.3	3.4	59.0	3.02	25.811	. .	26.506
	11	B. A. C. 7155 . .	. .	3	III–VII.	358 50 0.2	3.1	5.2	9.1	1.1	57.7	2.73	28.848	. .	29.545
	12	B. A. C. 7195 . .	. .	2	IV, VI.	342 10 5.5	6.8	9.0	12.8	8.0	3.4	7.58	27.314	. .	28.009
	13	B. A. C. 7197 . .	. .	2	VIII, IX.	" " "	"	"	"	"	"	"	40.052	. .	40.786
	14	B. A. C. 7287 . .	6.5	3	III–VII.	346 15 5.9	7.2	9.4	11.3	6.5	3.8	7.35	30.058	. .	30.752
	15	Anon. $21^{h}\ 0^{m}\ 55^{s}$.	. .	3	III–VII.	348 55 0.0	2.3	3.8	8.1	3.0	58.0	2.53	30.281	. .	30.976
	16	Lalande 41550 . .	. .	3	III–VII.	342 44 58.1	60.2	60.3	63.0	59.9	55.0	59.44	33.888	. .	34.581
	17	Anon. $21^{h}\ 23^{m}\ 49^{s}$.	. .	3	III–VII.	248 59 58.3	60.7	67.8	71.4	66.5	63.8	64.75	30.678	. .	31.341
	18	β Cephei, (comp.) .	. .	4	IV, V, VI, VII.	" " "	"	"	"	"	"	"	39.405	. .	40.084
	19	Anon. $21^{h}\ 46^{m}\ 29^{s}$.	10.3	1	V.	315 49 57.5	59.0	60.0	63.0	62.0	59.7	60.20	31.115	. .	31.804
	20	O. Arg. S. 21909. .	. .	3	III–VII.	342 10 2.9	4.8	6.8	9.5	5.3	59.5	4.80	35.740	. .	36.433
	21	Weisse XXII, 167 .	. .	3	I, II, VIII.	331 15 4.0	6.6	8.3	10.5	6.0	3.0	6.40	36.899	. .	37.587
	22	Weisse XXII, 175 .	. .	2	IV–VI.	" " "	"	"	"	"	"	"	38.826	. .	39.516
	23	Anon. $22^{h}\ 30^{m}\ 4^{s}$.	. .	4	I, II, VIII, IX.	315 5 3.8	8.0	6.1	9.8	8.5	5.2	6.90	33.855	. .	34.541
	24	Anon. $22^{h}\ 42^{m}\ 4^{s}$.	. .	3	III–VII.	349 5 1.7	6.0	7.5	11.7	5.5	0.1	5.42	29.639	. .	30.334
13	25	Moon, N. L. . . .	. .	4	I, II, III, IV.	340 0 4.3	4.8	6.0	8.4	5.3	3.0	5.30	26.089	+ 0.587	26.639
	26	Moon, S. L. . . .	. .	4	VI, VII, VIII, IX.	340 30 4.0	4.1	5.1	9.2	5.0	2.7	5.02	24.072	. .	24.715
	27	12 Aquilæ	. .	3	III–VII.	324 50 3.9	3.8	2.5	5.0	5.7	3.2	4.02	33.828	. .	34.416
	28	Anon. $18^{h}\ 59^{m}\ 30^{s}$.	. .	3	III–VII.	337 50 3.8	3.1	5.8	5.3	4.0	1.8	3.97	32.992	. .	33.582
	29	ρ^2 Sagittarii	. .	3	III–VII.	337 25 3.0	3.2	5.0	6.0	4.2	2.9	4.05	29.670	. .	30.260
	30	κ Aquilæ	. .	3	III–VII.	329 45 1.8	2.1	4.5	4.8	3.2	1.0	2.90	33.387	. .	33.976
	31	15 Vulpeculæ . . .	. .	3	IV–VI.	291 30 3.2	2.2	4.1	5.1	6.3	5.9	4.47	30.119	. .	30.704
	32	Anon. $20^{h}\ 7^{m}\ 6^{s}$ . .	. .	2	IV, VI.	298 10 3.0	2.0	2.0	3.0	5.5	3.0	3.08	33.845	. .	34.430
	33	B. A. C. 7114 . .	. .	3	III–VII.	278 15 2.1	3.1	4.0	8.0	7.0	6.5	5.12	30.723	. .	31.302
	34	B. A. C. 7197 . .	. .	3	III–VII.	342 5 3.0	5.0	6.5	8.0	5.2	1.1	4.80	30.462	. .	31.053
	35	Nadir	. .	.	. .	100 0 2.9	5.0	4.0	10.1	7.0	6.9	5.98	29.484	. .	. .
14	36	Nadir	. .	.	. .	100 0 1.0	2.4	1.3	6.9	4.2	5.5	3.55	29.402	+ 0.712	. .
	37	Moon, S. L. . . .	. .	5	I–IX.	340 30 0.5	1.4	2.5	4.1	1.9	59.0	1.57	26.627	. .	27.351
	38	Anon. $19^{h}\ 29^{m}\ 13^{s}$.	. .	2	IV, VI.	299 25 1.0	0.2	0.0	0.5	3.0	1.5	1.03	34.488	. .	35.196
	39	Anon. $19^{h}\ 34^{m}\ 52^{s}$.	. .	2	V, VII.	352 50 1.5	2.9	5.5	6.0	3.2	59.8	3.15	33.851	. .	34.575
	40	Anon. $19^{h}\ 48^{m}\ 53^{s}$.	9.3	1	V.	341 30 1.2	1.0	4.5	5.1	3.0	2.2	2.83	20.411	. .	21.123
	41	Lacaille 8313. . .	. .	2	IV, VI.	355 50 1.9	4.2	5.2	8.1	2.0	59.7	3.52	34.402	. .	35.124
	42	Anon. $20^{h}\ 4^{m}\ 54^{s}$.	9.3	2	IV, VI.	332 55 2.3	3.7	5.3	6.3	5.1	0.5	3.87	25.468	. .	26.183
	43	Anon. $20^{h}\ 6^{m}\ 35^{s}$.	8.5	1	IX.	" " "	"	"	"	"	"	"	26.725	. .	27.475
	44	Weisse XX, 767. .	. .	3	IV–VI.	332 0 2.0	2.1	3.5	5.0	4.3	2.0	3.15	34.506	. .	35.219
	45	Weisse XX, 779. .	. .	2	VI, VIII.	" " "	"	"	"	"	"	"	31.265	. .	31.995
	46	Lacaille 8549. . .	. .	3	III–VII.	355 25 0.0	3.0	3.3	5.2	0.4	2.3	2.37	28.402	. .	29.121
	47	B. A. C. 7287 . .	. .	3	IV–VI.	346 20 1.7	3.0	4.0	5.0	2.6	59.1	2.57	39.411	. .	40.125
	48	Lacaille 8701. . .	. .	3	III–VII.	347 55 2.0	4.9	5.6	7.5	2.1	0.1	3.70	36.779	. .	37.496
	49	Anon. $21^{h}\ 22^{m}\ 23^{s}$.	. .	2	II, IX.	342 40 4.0	5.0	7.0	8.6	5.3	2.1	5.33	28.662	. .	29.395
	50	Anon. $21^{h}\ 22^{m}\ 36^{s}$.	. .	2	IV, VI.	" " "	"	"	"	"	"	"	32.385	. .	33.103
	51	Anon. $21^{h}\ 40^{m}\ 40^{s}$.	. .	1	V.	320 0 4.0	3.3	4.5	5.7	5.0	2.3	4.13	28.010	. .	28.722
	52	O. Arg. N. 23362 .	. .	1	IV.	266 0 0.8	3.1	6.1	9.0	6.7	5.5	5.20	27.305	. .	28.003
	53	30 Pegasi	. .	3	III–VII.	313 50 0.8	2.6	1.0	3.2	2.2	0.4	1.70	39.380	. .	40.091
	54	Anon. $22^{h}\ 19^{m}\ 5^{s}$.	. .	3	III–VII.	347 55 3.1	7.2	7.6	9.5	3.3	1.5	5.37	35.377	. .	36.094
	55	Wash. Zone LIV, 13	. .	1	V.	346 55 1.9	4.2	5.0	9.0	2.5	1.0	3.93	29.075	. .	29.787
	56	Anon. $22^{h}\ 38^{m}\ 42^{s}$.	. .	2	IV, VI.	340 30 1.9	5.6	6.5	10.3	4.8	59.1	4.70	38.592	. .	39.306
	57	Anon. $22^{h}\ 39^{m}\ 3^{s}$.	. .	1	VI.	" " "	"	"	"	"	"	"	41.551	. .	42.257
	58	Lalande 44877 . .	. .	3	III–VII.	339 55 2.0	5.6	7.0	10.0	4.5	59.7	4.80	38.644	. .	39.360
	59	Weisse XXIII, 47 .	. .	3	III–VII.	316 30 1.7	2.1	1.0	5.9	3.0	1.1	2.43	36.902	. .	37.614
16	60	ε Aquilæ	. .	3	III–VII.	304 0 1.2	57.5	1.8	0.8	4.8	3.8	1.65	30.593	+ 0.693	31.283
	61	Weisse (2) XVIII, 1806	. .	3	III–VII.	297 50 1.8	59.8	1.1	oblit.	5.4	4.1	2.26	27.512	. .	28.201
	62	Anon. $19^{h}\ 7^{m}\ 58^{s}$ . .	9.5	1	VIII.	341 5 2.1	1.6	3.7	4.4	3.7	1.0	2.75	24.570	. .	25.294
	63	Anon. $19^{h}\ 29^{m}\ 16^{s}$.	10.0	1	V.	299 25 2.6	1.1	0.0	1.0	4.2	3.5	2.07	34.925	. .	35.618
	64	γ Sagittæ	. .	1	IX.	299 45 3.5	2.4	3.0	3.0	7.0	5.9	4.13	30.010	. .	30.719
	65	Weisse XX, 779. .	. .	3	III–VII.	332 0 3.7	1.7	5.0	3.2	5.0	2.8	3.57	31.272	. .	31.967

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 4 1.1	S. 51 56 2.7	1 13.4	− 13 3 36.9	− 1.6	D.	
2	. .	. .	. .	− 2 45.4	51 57 18.4	1 13.5	− 13 4 52.6	− 1.6	D.	
3	.	. .	. .	− 1 47.7	74 28 17.2	3 24.2	− 35 38 2.1	+ 4.0	D.	Star 3^s later.
4	. .	. .	57.9	− 2 21.7	74 27 43.2	3 24.0	− 35 37 28.0	+ 4.0	D.	
5	30.184	70.0	71.0	+ 0 4.4	56 30 9.5	−31 5.3	− 17 5 25.0	. .	B.	Slightly obscured with clouds.
6	. .	. .	66.8	− 2 53.3	17 17 8.7	17.6	+ 21 36 12.9	− 19.3	B.	Corr. +0″.60 applied to mean of A, B, E,F.
7	30.178	69.5	66.4	− 1 24.3	67 43 36.9	2 17.4	− 28 52 15.1	− 3.4	B.	
8	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
9	30.201	65.9	60.5	− 0 8.9	24 4 52.9	25.7	+ 14 48 20.7	− 9.1	B.	
10	. .	. .	. .	+ 1 49.3	60 41 52.4	1 42.0	− 21 49 55.1	+ 0.4	B.	
11	. .	. .	59.6	+ 0 14.2	78 50 17.0	4 43.8	− 40 1 21.6	+ 5.1	B.	Unsteady.
12	. .	. .	. .	+ 1 2.3	62 11 9.9	1 48.6	− 23 19 19.3	+ 1.1	B.	
13	30.205	64.8	59.4	− 5 38.6	62 4 29.0	1 48.1	− 23 12 37.8	+ 1.1	B.	
14	. .	. .	. .	− 0 23.6	66 14 43.8	2 10.1	− 27 23 14.6	+ 2.4	B.	
15	. .	. .	. .	− 0 30.6	68 54 32.0	2 28.2	− 30 3 20.9	+ 3.1	B.	
16	. .	. .	. .	− 2 23.6	S. 62 42 35.8	1 51.3	− 23 50 47.9	+ 2.1	B.	
17	. .	. .	. .	− 0 42.0	N. 31 0 37.3	34.7	+ 69 54 49.2	− 4.9	B.	
18	30.212	63.8	58.0	− 5 16.5	N. 31 5 11.8	34.8	+ 69 59 25.8	− 4.5	B.	This revolution is right.
19	. .	. .	. .	− 0 56.5	S. 35 49 3.7	41.7	+ 3 3 53.9	− 1.0	B.	
20	. .	. .	. .	− 3 21.5	62 6 43.3	1 48.8	− 23 14 52.9	+ 2.7	B.	
21	. .	. .	. .	− 3 58.0	51 11 8.4	1 11.8	− 12 18 40.9	+ 1.4	B.	
22	30.215	62.8	56.9	− 4 55.8	51 10 10.6	1 11.8	− 12 17 43.1	+ 1.4	B.	
23	. .	. .	. .	− 2 22.3	35 2 44.6	40.6	+ 3 50 14.1	+ 0.7	B.	Star 11^s later; too faint to catch.
24	30.208	62.1	56.2	− 0 10.5	69 4 55.0	2 30.3	− 30 13 46.0	+ 3.8	B.	
25	30.327	72.8	70.0	+ 1 45.2	60 1 50.5	−47 11.1	− 20 36 23.4	. .	D.	
26	30.331	72.7	69.7	+ 2 45.2	60 32 50.3	−47 24.4				
27	30.340	72.2	68.5	− 2 18.4	44 47 45.6	56.3	− 5 55 2.6	− 8.2	D.	
28	. .	. .	. .	− 1 52.3	57 48 11.7	1 29.9	− 18 56 2.3	− 3.8	D.	
29	30.342	72.0	68.0	− 0 8.2	57 24 55.9	1 28.6	− 18 32 45.3	− 3.3	D.	
30	. .	. .	67.7	− 2 4.6	49 42 58.3	1 7.0	− 10 50 26.0	− 5.1	D.	
31	. .	. .	. .	− 0 22.1	11 29 42.4	11.6	+ 27 23 45.3	+ 1.9	D.	
32	. .	. .	. .	− 2 18.9	S. 18 7 44.2	18.6	+ 20 45 36.4	− 10.6	D.	
33	. .	. .	. .	− 0 40.8	N. 1 45 35.7	1.8	+ 40 39 16.7	− 11.3	D.	
34	30.354	70.5	66.7	− 0 33.0	S. 62 4 31.8	1 47.1	− 23 12 39.6	+ 1.1	D.	Evening hazy and cloudy.
35	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
36	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
37	30.310	72.0	67.8	+ 1 22.9	60 31 24.5	−62 0.9	− 20 35 44.3	. .	B.	
38	. .	. .	. .	− 2 42.9	19 22 18.1	20.0	+ 19 31 1.1	− 13.1	B.	Larger star preceded 15^s or 20^s; small star followed about 7^s, little south.
39	30.307	71.1	66.7	− 2 23.4	72 47 39.7	3 1.5	− 33 57 2.0	+ 2.4	B.	
40	. .	. .	. .	+ 4 37.4	61 34 40.3	1 44.8	− 22 42 45.8	− 0.6	B.	
41	. .	. .	66.0	− 2 40.6	75 47 22.9	3 40.9	− 36 57 24.6	+ 3.9	B.	
42	. .	. .	. .	+ 1 59.4	52 57 3.3	1 15.4	− 14 4 39.4	− 2.5	B.	
43	. .	. .	. .	+ 1 19.0	52 56 22.9	1 15.4	− 14 3 59.0	− 2.4	B.	
44	. .	. .	. .	− 2 43.6	51 57 19.5	1 12.9	− 13 4 53.2	− 1.7	B.	
45	. .	. .	. .	− 1 2.5	51 59 0.6	1 13.0	− 13 6 34.4	− 1.7	B.	
46	30.300	65.5	64.3	+ 0 27.5	75 25 29.9	3 36.1	− 36 35 26.8	+ 4.6	B.	
47	. .	. .	. .	− 5 17.8	66 14 44.8	2 9.2	− 27 23 14.8	+ 2.6	B.	
48	. .	. .	. .	− 3 55.2	67 51 8.5	2 19.7	− 28 59 49.0	+ 3.1	B.	
49	. .	. .	. .	+ 0 18.9	62 40 24.3	1 50.6	− 23 48 35.6	+ 2.3	B.	
50	. .	. .	62.2	− 1 37.2	62 38 28.1	1 50.4	− 23 46 39.3	+ 2.3	B.	
51	. .	. .	. .	+ 0 40.0	S. 40 0 44.2	48.3	− 1 7 53.2	− 1.2	B.	Star preceded this 8^s, a little north.
52	. .	. .	. .	+ 1 2.5	N. 13 58 52.3	14.3	+ 52 52 45.9	− 2.8	B.	
53	30.293	66.5	59.5	− 5 16.8	S. 33 44 45.0	38.5	+ 5 8 15.8	− 5.2	B.	
54	. .	. .	. .	− 3 11.1	67 51 54.3	2 20.9	− 29 0 36.0	+ 3.9	B.	
55	. .	. .	. .	+ 0 6.7	66 55 10.6	2 14.6	− 28 3 46.0	+ 3.8	B.	Revolution observed with care.
56	. .	. .	. .	− 4 52.1	60 25 12.6	1 41.4	− 21 33 14.8	+ 3.0	B.	
57	. .	. .	. .	− 6 25.0	60 23 39.7	1 41.3	− 21 31 41.8	+ 3.0	B.	
58	. .	. .	. .	− 4 53.8	59 50 11.0	1 39.1	− 20 58 10.9	+ 3.0	B.	Good sky; no other star near.
59	30.290	65.0	58.5	− 3 58.9	36 26 3.6	42.7	+ 2 26 53.0	+ 1.8	B.	
60	30.118	76.1	74.3	− 0 40.2	23 59 21.5	24.8	+ 14 53 53.0	− 14.3	B.	
61	. .	. .	. .	+ 0 56.3	17 50 58.6	18.0	+ 21 2 22.7	− 15.6	B.	Corr. −0″.52 applied to mean of A, B, E, F.
62	. .	. .	. .	+ 2 27.2	61 7 30.0	1 40.8	− 22 15 31.5	− 2.2	B.	
63	. .	. .	. .	− 2 56.2	19 22 5.9	19.6	+ 19 31 13.7	− 13.2	B.	Star, same magnitude, preceded 7^s.
64	30.128	75.1	72.2	− 0 22.5	19 44 41.6	20.1	+ 19 8 37.6	− 11.5	B.	
65	. .	. .	. .	− 1 1.6	S. 51 59 2.0	1 11.6	− 13 6 34.3	− 1.6	B.	Star, with rev. 34, preceded about 28^s.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Sept. 16	1	Weisse XX, 1125 .	. .	3	III–VII.	328 25 3.8	4.5	5.7	4.5	6.0	3.5	4.67	30.755	+ 0.693	31.450
	2	Moon, S. L. . .	. .	5	I–IX.	337 20 3.0	2.8	5.0	3.1	4.8	2.6	3.55	30.807	. .	31.508
	3	Nadir	. .	.	. .	100 0 0.3	1.5	59.2	5.4	5.0	4.1	2.58	29.390	. .	. .
18	4	Nadir	. .	.	. .	100 0 2.1	3.4	2.1	6.8	5.6	6.3	4.38	29.433	+ 0.707	. .
	5	η Lyræ, (2d *) . .	9.5	2	VI, VIII.	280 0 1.1	2.6	2.1	5.4	5.1	4.0	3.38	33.382	. .	34.090
	6	Anon. 19ʰ 15ᵐ 46ˢ .	10.0	1	VIII.	347 50 1.0	0.6	4.0	3.5	1.4	58.9	1.57	32.310	. .	33.052
	7	Anon. 19ʰ 39ᵐ 45ˢ .	10.0	2	III, VII.	347 35 0.6	1.0	4.2	4.1	1.8	0.0	1.95	32.692	. .	33.405
	8	Anon. 19ʰ 48ᵐ 55ˢ .	. .	3	III–VII.	341 35 2.2	1.2	4.3	5.0	3.3	59.3	2.55	30.289	. .	31.000
	9	β Delphini	. .	3	III–VII.	304 50 2.1	59.9	2.8	4.1	4.8	3.0	2.78	40.120	. .	40.824
	10	O. Arg. S. 20827. .	. .	3	III–VII.	344 15 1.1	0.5	2.5	4.0	1.2	59.5	1.47	29.581	. .	30.293
	11	Moon, S. L. . . .	. .	5	I–IX.	330 55 2.0	3.0	5.0	5.1	3.7	2.3	3.52	27.720	. .	28.432
20	12	Nadir	. .	.	. .	100 0 4.8	0.2	1.3	5.6	5.9	8.1	4.32	29.444	+ 0.694	. .
	13	Anon. 18ʰ 34ᵐ 46ˢ .	. .	3	III–VII.	350 35 2.0	58.2	2.0	2.6	1.8	0.1	1.12	26.207	. .	26.907
	14	γ Lyræ	. .	3	III–VII.	286 25 2.1	56.0	0.5	1.7	3.8	5.1	1.43	34.240	. .	34.928
	15	Weisse XIX, 1525 .	. .	3	III–VII.	305 15 3.1	55.0	0.2	0.2	3.6	3.5	0.93	32.736	. .	33.428
	16	Anon. 19ʰ 29ᵐ 15ˢ .	. .	3	III–VII.	357 55 4.9	0.9	5.4	6.8	6.0	3.0	4.50	34.764	. .	35.450
	17	Anon. 19ʰ 39ᵐ 43ˢ .	9.5	1	V.	347 35 5.0	2.6	5.7	6.8	4.4	3.5	4.67	32.568	. .	33.262
	18	Lacaille 8312. .	. .	3	III–VII.	356 45 6.0	5.0	7.0	9.0	6.1	oblit.	6.71	33.362	. .	34.063
	19	Anon. 20ʰ 4ᵐ 51ˢ .	. .	2	IV–VI.	332 55 5.7	3.9	6.1	4.0	6.2	2.7	4.77	25.374	. .	26.071
	20	Anon. 20ʰ 6ᵐ 4ˢ . .	. .	1	VI.	" " "	"	"	"	"	"	"	26.555	. .	27.258
	21	Anon. 20ʰ 31ᵐ 21ˢ .	. .	1	V.	291 30 4.1	59.3	3.0	1.1	5.7	5.0	3.03	42.005	. .	42.699
	22	Lalande 40043 . .	8.3	2	IV, VI.	283 55 3.1	0.9	4.1	3.0	6.5	6.8	4.07	31.516	. .	32.213
	23	Anon. 20ʰ 37ᵐ 7ˢ .	. .	1	IX.	" " "	"	"	"	"	"	"	29.251	. .	30.005
	24	B. A. C. 7286. .	. .	3	III–VII	357 50 2.8	2.0	4.1	5.8	2.6	oblit.	3.47	26.472	. .	27.174
	25	B. A. C. 7349. .	. .	3	III–VII.	359 40 4.1	2.5	5.7	7.9	4.8	3.6	4.77	36.432	. .	37.134
	26	Anon. 21ʰ 10ᵐ 22ˢ .	9.3	3	III–VII.	282 15 4.0	1.7	3.2	5.7	6.0	6.6	4.53	31.512	. .	32.199
	27	Anon. 22ʰ 22ᵐ 41ˢ. .	. .	1	V.	342 40 6.0	2.0	6.0	4.6	5.4	3.8	4.93	32.262	. .	32.956
	28	Schjellerup 8841 .	. .	2	IV, VI.	320 0 6.0	2.0	3.4	1.5	3.5	4.0	3.40	28.630	. .	29.324
	29	Anon. 21ʰ 39ᵐ 50ˢ .	. .	1	IX.	" " "	"	"	"	"	"	"	27.935	. .	28.656
	30	Anon. 22ʰ 8ᵐ 51ˢ .	9.3	3	III–VII.	340 50 4.1	3.9	6.0	7.3	5.0	3.6	4.98	32.404	. .	33.102
	31	Anon. 22ʰ 18ᵐ 24ˢ .	9.3	2	III, VII.	315 45 3.5	0.6	2.5	1.3	4.6	4.5	2.83	31.131	. .	31.824
	32	Anon. 22ʰ 24ᵐ 8ˢ .	8.5	3	III–VII.	353 25 0.8	0.0	2.7	3.8	2.2	59.9	1.57	36.125	. .	36.826
	33	Anon. 22ʰ 38ᵐ 58ˢ .	9.5	1	VIII.	340 25 0.4	0.3	0.9	2.7	1.3	0.0	0.93	36.921	. .	37.645
	34	Lacaille 9359. .	. .	3	III–VII.	346 45 0.4	0.5	3.8	2.2	0.2	59.6	1.12	35.605	. .	36.304
	35	ι Gruis	. .	2	IV, VI.	4 40 3.1	1.8	3.6	4.5	3.4	0.9	2.88	25.810	. .	26.508
	36	Lacaille 9444. .	. .	3	III–VII.	353 15 2.5	2.1	5.6	6.0	4.0	1.5	3.62	28.091	. .	28.792
	37	Anon. 23ʰ 21ᵐ 33ˢ .	. .	2	IV, VI.	354 45 2.0	2.5	4.9	4.7	4.0	0.7	3.13	27.524	. .	28.221
	38	Anon. 22ʰ 30ᵐ 1ˢ .	. .	3	III–VII.	356 20 2.0	3.0	5.7	7.0	4.0	0.9	3.77	27.216	. .	27.916
	39	Anon. 23ʰ 42ᵐ 57ˢ .	. .	1	VIII.	351 0 2.0	1.3	3.8	7.0	3.0	1.0	3.02	32.040	. .	32.771
	40	Lacaille 9722. .	. .	3	III–VII.	352 25 3.0	3.0	5.1	7.0	3.8	1.6	3.92	32.846	. .	33.546
	41	Moon, S. L. . .	. .	2	I, II.	322 45 2.6	0.9	3.0	3.1	4.6	3.0	2.87	31.616	. .	32.561
	42	Moon, N. L. . .	. .	2	VIII, IX.	322 20 5.5	1.8	7.0	4.5	7.1	5.1	5.17	41.314	. .	41.764
21	43	γ Lyræ	. .	3	III–VII.	286 25 6.0	1.2	4.0	5.9	7.0	9.1	5.53	34.474	+ 0.581	35.049
	44	B. A. C. 6531. .	. .	3	V, VI, VII.	344 50 6.0	2.2	5.2	4.7	4.8	5.4	4.72	37.670	. .	38.261
	45	Nadir	. .	.	. .	100 0 5.3	2.0	3.3	6.9	7.1	9.9	5.75	29.490	. .	. .
	46	Nadir	. .	.	. .	{ 99 55 4.3 4.0	1.2 1.9	2.0 2.0	5.6 5.2	6.0 6.0	8.8 8.0	} 4.57	19.859	. .	. .
	47	Nadir	. .	.	. .	{ 100 5 3.8 3.0	1.1 1.1	2.0 2.0	6.0 6.1	6.6 7.0	8.2 8.0	} 4.57	39.016	. .	. .
	48	Nadir	. .	.	. .	100 0 3.0	1.0	1.0	5.8	5.8	8.0	4.10	29.423	. .	. .
	49	Weisse XX, 847. .	7.0	3	III–VII.	328 50 3.3	58.8	1.9	0.1	2.0	1.3	1.23	26.690	. .	27.273
	50	O. Arg. S. 20906. .	. .	4	III, IV, V, VI.	350 5 3.3	58.7	3.8	4.0	2.0	1.0	2.13	35.168	. .	35.751
	51	Lacaille 8610. .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	32.290	. .	32.873
23	52	Weisse XX, 1023 .	. .	3	III–VII.	329 5 3.0	1.7	5.0	5.4	3.2	58.7	2.83	27.478	+ 0.590	28.061
	53	Nadir	. .	.	. .	100 0 3.0	2.7	3.7	9.4	5.8	7.0	5.27	29.458	. .	. .
27	54	Anon. 18ʰ 49ᵐ 43ˢ .	. .	3	III–VII.	338 10 3.0	9.2	7.0	11.8	0.3	57.2	4.75	27.062	+ 0.571	27.636
	55	Lalande 35499 . .	. .	3	III–VII.	" " "	"	"	"	"	"	"	30.871	. .	31.445
	56	Anon. 19ʰ 3ᵐ 58ˢ .	. .	3	III–VII.	327 0 2.6	6.0	5.8	12.1	5.0	0.0	5.25	38.248	. .	38.820
	57	Anon. 19ʰ 17ᵐ 47ˢ .	. .	3	III–VII.	" " "	"	"	"	"	"	"	26.196	. .	26.768
	58	Anon. 19ʰ 28ᵐ 56ˢ .	. .	1	VII.	299 25 5.0	8.0	7.8	14.0	6.8	3.7	7.55	35.098	. .	35.678
	59	(* 119) Washington .	. .	3	IV–VI.	260 25 5.4	7.9	12.2	20.4	9.0	7.9	10.47	25.625	. .	26.191
	60	Lacaille 8293. .	6.0	3	IV–VI.	356 55 6.2	12.0	14.0	20.8	8.0	oblit.	11.40	33.979	. .	34.552
	61	Anon. 20ʰ 4ᵐ 49ˢ .	. .	2	III, V.	332 55 6.8	11.8	13.0	19.2	9.0	3.3	10.52	25.935	. .	26.501
	62	Anon. 20ʰ 5ᵐ 49ˢ .	. .	2	V, IX.	" " "	"	"	"	"	"	"	27.201	. .	27.791
	63	Nadir	. .	.	. .	100 0 6.9	13.5	11.6	23.0	11.7	8.8	12.58	29.711	. .	. .
	64	Anon. 20ʰ 36ᵐ 52ˢ .	. .	4	I, II, VIII, IX.	283 55 7.1	12.0	11.9	21.0	11.8	9.1	12.15	30.068	. .	30.612
	65	Lalande 40043 . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	32.013	. .	32.582
	66	Weisse (2) XX, 1357	8.5	1	IV.	285 0 7.0	9.1	12.0	19.7	10.7	8.0	11.10	30.846	. .	31.408

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.137	74.5	71.0	− 0 45.4	S. 48 24 19.2	1 3.1	− 9 31 43.1	− 2.0	B.	
2	30.137	74.1	70.6	− 0 47.2	S. 57 19 16.3	−59 26.4	− 17 26 10.7	. .	B.	
3	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
4	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
5	. .	. .	. .	− 2 8.2	N. 0 2 4.8	0.0	+ 38 55 44.1	− 8.5	B.	
6	30.368	74.5	70.5	− 1 35.6	S. 67 48 26.0	2 17.7	− 28 57 4.4	+ 0.5	B.	Star, 10th magnitude, preceded about 10^{s}.
7	. .	. .	. .	− 1 46.8	67 33 15.2	2 16.2	− 28 41 52.1	+ 1.3	B.	
8	. .	. .	69.5	− 0 31.3	61 34 31.2	1 44.2	− 22 42 36.2	− 0.3	B.	
9	30.376	73.4	69.5	− 5 39.8	24 44 23.0	26.1	+ 14 8 50.2	− 8.0	B.	Hazy.
10	. .	. .	69.4	− 0 9.2	64 14 52.3	1 57.0	− 25 23 10.0	+ 2.0	B.	
11	30.408	72.0	68.7	+ 0 49.1	50 55 52.6	−55 30.8	− 11 6 42.6	. .	B.	
12	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
13	30.176	78.1	77.8	+ 1 36.8	70 36 37.9	2 36.1	− 31 45 34.7	− 0.0	B.	Two stars in field well defined.
14	. .	. .	. .	− 2 34.5	6 22 26.9	6.2	+ 32 31 6.1	− 18.4	B.	
15	. .	. .	75.7	− 1 47.5	25 13 13.5	26.2	+ 13 39 59.6	− 13.7	B.	
16	30.183	77.8	76.0	− 2 50.9	77 52 13.6	4 12.4	− 39 2 46.8	+ 4.5	B.	
17	. .	. .	. .	− 1 42.2	67 33 22.4	2 14.0	− 28 41 57.2	+ 1.5	B.	
18	30.182	77.7	75.0	− 2 7.3	76 42 59.4	3 51.2	− 37 53 11.3	+ 4.9	B.	Corr. −0″.04 applied to mean of A, B, C, D.
19	. .	. .	. .	+ 2 2.9	52 57 7.7	1 13.7	− 14 4 42.2	− 2.1	B.	I think a small star followed about 8^{s}, same revolution.
20	. .	. .	75.0	+ 1 25.8	52 56 30.6	1 13.8	− 14 4 5.1	− 2.1	B.	
21	30.182	77.2	74.5	− 6 37.8	11 23 25.2	11.2	+ 27 30 2.8	− 10.6	B.	
22	. .	. .	. .	− 1 9.3	3 53 54.7	3.8	+ 34 59 40.7	− 11.1	B.	
23	. .	. .	. .	− 0 0.2	3 55 3.9	3.8	+ 34 58 31.5	− 11.1	B.	
24	. .	. .	73.5	+ 1 28.4	77 51 31.9	4 13.3	− 39 2 6.0	+ 6.4	B.	Corr. −0″.21 applied to mean of A, B, C, D. Circle reading diminished by 5′.
25	30.184	77.0	73.5	− 3 43.8	79 36 21.0	4 54.6	− 40 47 36.3	+ 7.0	B.	
26	. .	. .	. .	− 1 8.9	2 13 55.6	2.2	+ 36 39 41.4	− 8.5	B.	Took smallest and southernmost of 3 stars.
27	. .	. .	. .	− 1 32.6	62 38 32.0	1 47.7	− 23 46 40.4	+ 3.0	B.	Star preceding 10^{s} and south.
28	. .	. .	. .	+ 0 21.2	40 0 24.6	47.0	− 1 7 32.3	− 1.3	B.	
29	. .	. .	. .	+ 0 42.1	40 0 45.5	47.0	− 1 7 53.2	− 1.3	B.	
30	. .	. .	. .	− 1 37.2	60 48 27.8	1 39.9	− 21 56 28.4	+ 3.4	B.	Larger star preceded 23^{s}.
31	. .	. .	. .	− 0 57.2	35 44 5.7	40.3	+ 3 8 53.2	+ 0.6	B.	Larger star preceded 35^{s}.
32	. .	. .	. .	− 3 34.1	73 21 27.4	3 5.2	− 34 30 53.4	+ 6.2	B.	
33	. .	. .	. .	− 3 59.8	60 21 1.1	1 38.2	− 21 29 0.1	+ 3.4	B.	Hazy over most of the wires.
34	. .	. .	. .	− 3 17.7	66 41 43.4	2 9.5	− 27 50 13.6	+ 4.5	B.	
35	30.184	75.8	71.2	+ 1 49.3	84 41 52.2	9 0.9	− 45 57 13.8	+ 7.0	B.	
36	. .	. .	. .	+ 0 37.8	73 15 41.4	3 4.5	− 34 25 6.7	+ 5.2	B.	
37	. .	. .	. .	+ 0 55.7	74 45 58.8	3 23.3	− 35 55 42.9	+ 5.3	B.	No other star near.
38	. .	. .	70.2	+ 1 5.2	76 21 9.0	3 47.2	− 37 31 16.9	+ 5.3	B.	
39	30.187	75.2	69.8	− 1 26.8	70 58 36.2	2 41.7	− 32 7 38.6	+ 4.5	B.	No other star near. Circle noted carefully.
40	. .	. .	69.2	− 1 51.2	72 23 12.7	2 55.4	− 33 32 28.9	+ 4.3	B.	
41	30.186	74.5	69.0	− 1 20.3	42 43 42.6	−35 34.7	− 2 59 46.3	. .	B.	
42	. .	. .	. .	− 6 8.6	42 13 56.6	−35 14.4				
43	. .	. .	. .	− 2 38.3	6 22 27.2	6.2	+ 32 31 5.8	− 18.4	D.	
44	30.160	80.0	79.8	− 4 19.2	64 45 45.5	1 56.5	− 25 54 2.8	− 1.0	D.	
45	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
46	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
47	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
48	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
49	30.192	79.5	76.9	+ 1 25.3	48 51 26.6	1 3.5	− 9 58 50.8	− 2.1	D.	
50	. .	. .	. .	− 3 0.4	70 2 1.8	2 31.7	− 31 10 54.2	+ 4.2	D.	
51	30.194	. .	76.5	− 1 30.0	70 3 32.1	2 31.9	− 31 12 24.8	+ 4.2	D.	
52	30.350	75.3	71.7	+ 1 0.7	49 6 3.5	1 5.0	− 10 13 29.3	− 1.7	D.	
53	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
54	30.138	61.0	55.1	+ 1 14.0	58 11 18.8	1 33.1	− 19 19 12.6	− 3.7	D.	
55	. .	. .	. .	− 0 45.3	58 9 19.5	1 33.0	− 19 17 13.2	− 3.5	D.	
56	. .	. .	. .	− 4 36.8	46 55 28.5	1 1.9	− 8 2 51.2	− 6.9	D.	
57	. .	. .	. .	+ 1 41.1	47 1 46.4	1 2.2	− 8 9 9.3	− 6.2	D.	
58	30.150	60.0	54.4	− 2 58.1	S. 19 22 19.5	20.4	+ 19 30 59.4	− 13.8	D.	
59	. .	. .	. .	+ 1 59.2	N. 19 32 50.3	20.6	+ 58 26 50.2	− 18.7	D.	
60	30.156	59.5	54.2	− 2 22.7	S. 76 52 48.7	4 4.0	− 38 3 13.4	+ 5.3	D.	No star 1^{m} later. Corr. −1″.85 applied to mean of A, B, C, D.
61	. .	. .	. .	+ 1 49.5	52 57 0.0	1 16.8	− 14 4 37.6	− 2.1	D.	
62	. .	. .	. .	+ 1 9.2	52 56 19.7	1 17.0	− 14 3 57.4	− 2.0	D.	Star follows 10^{s}.
63	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	Images very unsteady.
64	. .	. .	. .	− 0 19.2	3 54 53.0	4.0	+ 34 58 42.3	− 12.2	D.	
65	. .	. .	. .	− 1 20.9	3 53 51.2	4.0	+ 34 59 44.1	− 12.2	D.	
66	30.178	59.2	51.8	− 0 44.1	S. 4 59 27.0	5.1	+ 33 54 7.2	− 11.8	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES.							MICROMETER.		
						A.	B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Sept. 27	1	Weisse (2) XX, 1373	6.0	2	V, VI.	285 0 7.0	9.1	12.0	19.7	10.7	8.0	11.01	30.754	+ 0.571	31.327
	2	Anon. $20^h 42^m 9^s$.	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	32.126	. .	32.696
28	3	Lamont 6587 . . .	. .	2	IV, VI.	320 10 6.9	9.9	8.7	12.2	8.8	4.5	8.50	26.764	+ 0.715	27.479
	4	Weisse XVIII, 1542	. .	2	IV, VI.	" " "	"	"	"	"	"	"	25.650	. .	26.365
	5	23 Aquilæ, (2d *) . .	. .	1	V.	318 0 5.1	8.7	5.5	11.2	7.8	3.1	6.90	26.375	. .	27.090
	6	Weisse XIX, 722 . .	. .	3	III–VII.	329 20 3.8	8.2	7.2	12.1	4.3	0.3	5.98	31.366	. .	32.083
	7	Lacaille 8307. . .	. .	3	III–VII.	2 5 4.2	7.7	8.9	15.3	6.0	1.5	7.27	31.393	. .	32.117
	8	Anon. $20^h 5^m 3^s$ . .	. .	2	IV, VI.	332 55 8.3	12.0	13.1	17.1	9.9	5.8	11.03	25.713	. .	26.429
	9	Anon. $20^h 6^m 48^s$.	9.5	1	VII.	" " "	"	"	"	"	"	"	31.578	. .	32.311
	10	Anon. $20^h 31^m 24^s$.	8.5	1	V.	291 25 7.1	10.0	9.6	15.1	10.3	8.2	10.05	32.792	. .	33.507
	11	Anon. $20^h 37^m 8^s$.	8.8	3	III–VII.	283 55 7.0	12.1	11.1	19.5	11.6	11.0	12.05	29.686	. .	30.394
	12	Lacaille 8603. . .	. .	3	IV–VI.	0 25 9.4	13.1	16.7	19.0	11.4	7.6	12.87	35.598	. .	36.316
	13	O. Arg. S. 21046. .	9.0	3	III–VII.	338 35 8.9	9.8	13.0	17.0	7.5	4.2	10.07	25.271	. .	25.989
	14	Lalande 41011 . .	8.0	2	IV, VI.	290 50 8.3	12.6	10.8	15.9	12.0	8.5	11.35	34.613	. .	35.326
	15	Anon. $21^h 10^m 23^s$.	9.0	2	III, VI.	282 15 3.3	6.4	5.5	11.5	6.5	5.8	6.50	31.587	. .	32.306
	16	Anon. $21^h 23^m 47^s$.	9.7	1	V.	335 20 3.2	5.6	9.0	11.1	6.0	0.0	5.82	34.060	. .	34.775
	17	Anon. $21^h 32^m 0^s$.	. .	1	IX.	343 55 5.1	8.5	9.5	6.0	5.5	1.5	6.02	26.415	. .	27.179
	18	θ Piscis Australis . .	5.5	3	III–VII.	350 25 4.5	7.1	9.3	14.9	6.7	0.6	7.18	27.732	. .	28.453
	19	Nadir	. .	.	. .	100 0 4.0	11.3	7.1	17.9	10.1	7.3	9.62	29.592	. .	. .
	20	Weisse XXII, 300 .	9.0	1	V.	330 45 6.1	11.9	11.6	16.9	9.4	5.5	10.23	27.425	. .	28.140
	21	58 Aquarii	. .	3	III–VII.	330 30 7.5	13.0	12.8	15.7	10.3	5.3	10.77	35.929	. .	36.646
	22	Anon. $22^h 38^m 58^s$.	9.0	1	V.	340 25 7.1	13.7	11.9	17.5	9.1	4.1	10.57	32.221	. .	32.936
	23	δ Piscis Australis . .	6.0	3	III–VII.	352 5 4.0	9.3	11.0	15.0	5.2	0.9	7.57	30.004	. .	30.725
	24	64 Pegasi	. .	3	III–VII.	287 50 2.3	8.4	5.8	14.0	8.0	2.9	6.90	34.314	. .	35.023
29	25	Lalande 34984 . .	. .	4	I, II, VIII, IX.	325 0 3.2	6.0	2.8	6.2	6.0	2.8	4.50	37.223	+ 0.624	37.851
	26	Weisse XVIII, 1058	. .	3	IV–VI.	" " "	"	"	"	"	"	"	33.594	. .	34.218
	27	Dorpat 2447, (1st *).	9.3	3	IV–VI.	320 25 1.7	1.8	2.0	4.0	3.5	59.6	2.10	29.418	. .	30.042
	28	Dorpat 2447, (2d *).	7.0	2	III, VII.	" " "	"	"	"	"	"	"	28.868	. .	29.492
	29	Nadir	. .	.	. .	100 0 2.8	5.8	4.0	11.4	8.6	5.8	6.40	29.460	. .	. .
	30	Lacaille 8326. . .	. .	3	IV–VI.	355 35 1.7	4.3	4.9	7.8	4.0	58.4	3.52	30.248	. .	30.874
	31	Anon. $20^h 30^m 34^s$.	. .	1	IX.	291 25 2.0	2.0	3.0	5.2	6.0	1.9	3.35	28.448	. .	29.073
	32	Weisse (2) XX, 1357.	. .	3	III, IV, V.	285 0 4.0	3.9	5.9	10.1	9.0	5.5	6.40	30.611	. .	31.220
	33	Weisse (2) XX, 1373.	. .	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.539	. .	31.170
	34	O. Arg. S. 20921. .	. .	3	III–VII.	347 25 4.1	7.5	8.8	10.9	6.0	3.1	6.73	35.161	. .	35.790
	35	O. Arg. S. 21196. .	. .	3	III–VII.	343 30 5.0	6.1	6.1	11.0	5.1	3.1	6.07	27.927	. .	28.555
	36	Anon. $21^h 16^m 1^s$.	. .	3	III–VII.	280 30 4.2	8.0	9.0	13.1	11.9	7.0	8.87	28.136	. .	28.843
	37	Anon. $21^h 33^m 40^s$.	8.0	3	V, VI, VII.	343 55 4.4	7.9	7.1	13.0	8.9	4.2	7.58	33.867	. .	34.592
30	38	Lacaille 7998, (1st *)	9.0	2	IV, VI.	352 50 4.8	6.1	7.1	10.1	8.1	3.4	6.60	29.132	+ 0.736	29.934
	39	Lacaille 7998, (2d *)	8.0	2	III, VII.	" " "	"	"	"	"	"	"	29.189	. .	29.871
	40	23 Aquilæ, (2d *) . .	. .	1	V.	318 0 5.5	6.3	6.4	6.5	9.5	5.0	6.53	26.410	. .	27.146
	41	Anon. $19^h 29^m 15^s$.	8.0	2	IV, VI.	337 55 2.9	3.3	5.0	4.9	5.0	1.3	3.73	26.960	. .	27.698
	42	O. Arg. S. 20022. .	8.0	4	II, III, VIII, IX.	346 5 3.8	3.0	5.0	5.0	6.7	1.7	4.20	35.817	. .	36.571
	43	O. Arg. S. 20024. .	9.0	1	V.	" " "	"	"	"	"	"	"	29.820	. .	30.556
	44	Anon. $20^h 30^m 35^s$.	9.5	1	IX.	291 25 3.0	3.0	4.7	4.8	8.2	3.3	4.50	31.965	. .	32.702
	45	Weisse XX, 1023 .	7.5	3	IV, V, IX.	329 5 4.5	5.0	7.2	7.2	7.5	4.4	5.97	27.476	. .	28.221
	46	B. A. C. 7286 . .	6.5	3	III–VII.	357 50 4.9	7.2	10.1	10.9	8.5	oblit.	7.98	26.848	. .	27.592
	47	Anon. $21^h 16^m 3^s$.	. .	4	III, V, VII, IX.	280 30 3.0	6.9	5.5	9.1	10.2	6.8	6.92	27.960	. .	28.689
	48	2 Pegasi	5.0	3	IV–VI.	295 50 2.9	3.8	4.6	6.5	8.5	4.2	5.08	31.299	. .	32.034
	49	Anon. $21^h 33^m 42^s$.	. .	3	IV–VI.	343 50 2.9	4.2	5.2	7.7	6.7	1.0	4.62	24.018	. .	24.755
	50	Anon. $21^h 46^m 6^s$.	9.0	1	V.	326 0 0.8	1.5	1.0	2.9	3.7	59.7	1.60	31.003	. .	31.739
	51	Nadir	. .	.	. .	100 0 0.9	3.1	1.0	8.2	8.5	4.8	4.42	29.405	. .	. .
Oct. 1	52	Dorpat 2447, (1st *).	9.0	4	I, III, VII, IX.	320 25 0.5	0.0	0.0	0.7	2.8	0.0	0.67	29.356	+ 0.636	29.993
	53	Dorpat 2447, (2d *).	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	28.904	. .	29.540
	54	Anon. $19^h 17^m 4^s$.	8.0	3	III–VII.	353 25 1.2	2.9	3.0	7.1	4.1	0.9	3.20	33.982	. .	34.625
	55	Anon. $19^h 29^m 15^s$.	9.0	3	III, V, VIII.	358 50 1.4	2.8	4.0	9.8	4.6	0.0	3.77	27.469	. .	28.119
	56	O. Arg. S. 20024 .	. .	3	III–VII.	346 5 1.6	2.2	4.0	4.1	5.0	0.2	2.85	30.011	. .	30.652
	57	Anon. $19^h 58^m 31^s$.	. .	3	III–VII.	338 0 2.0	3.0	4.0	5.8	4.3	0.9	3.33	36.218	. .	36.857
	58	Nadir	. .	.	. .	100 0 2.0	4.0	2.7	8.7	8.1	5.8	5.22	29.411	. .	. .
	59	Anon. $20^h 43^m 58^s$.	8.0	3	III–VII.	340 25 2.2	3.2	3.0	6.1	5.8	59.9	3.37	34.111	. .	34.751
	60	Anon. $22^h 21^m 34^s$.	9.0	1	V.	335 10 3.0	4.9	6.0	7.8	7.0	2.2	5.15	25.637	. .	26.273
5	61	Nadir	. .	.	. .	100 0 3.2	7.2	5.0	10.6	9.1	5.1	6.70	29.487	+ 0.727	. .
	62	Anon. $19^h 56^m 28^s$.	6.0	3	IV–VI.	282 10 1.2	2.1	4.6	6.5	6.0	3.4	3.97	31.282	. .	32.007
	63	Anon. $19^h 59^m 35^s$.	8.0	3	IV–VI.	358 0 1.3	4.9	5.8	8.1	3.9	59.4	3.90	29.804	. .	30.533
	64	Weisse XX, 851 .	8.0	2	V, VII.	326 15 2.0	4.0	4.2	5.6	5.8	59.8	3.57	35.813	. .	36.548

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 41.6	S. 4 59 29.5	5.1	+ 33 54 4.6	− 11.7	D.	
2	. .	. .	. .	− 1 24.5	4 58 46.6	5.1	+ 33 54 47.6	− 11.7	D.	
3	. .	. .	. .	+ 1 18.9	40 11 27.4	49.3	− 1 18 37.4	− 9.4	B.	
4	30.340	60.4	54.5	+ 1 53.8	40 12 2.2	49.3	− 1 19 12.3	− 9.3	B.	
5	. .	. .	. .	+ 1 31.1	38 1 38.0	45.8	+ 0 51 15.5	− 9.4	B.	
6	. .	. .	. .	− 1 5.2	49 19 0.7	1 8.1	− 10 26 29.6	− 4.8	B.	
7	30.340	58.2	51.6	− 1 6.3	82 4 1.0	6 39.2	− 43 17 0.9	+ 7.2	B.	
8	. .	. .	. .	+ 1 51.8	52 57 2.8	1 17.8	− 14 4 41.3	− 2.0	B.	
9	30.334	57.0	50.5	− 1 12.4	52 53 58.6	1 17.7	− 14 1 37.0	− 2.0	B.	Very faint.
10	. .	. .	. .	− 1 50.0	11 23 20.1	11.9	+ 27 30 7.3	− 11.6	B.	
11	. .	. .	. .	− 0 12.3	3 54 59.7	4.0	+ 34 58 35.5	− 12.4	B.	Followed about 12^s by a star of 7th magnitude.
12	30.340	56.0	49.8	− 3 18.1	80 21 54.8	5 34.4	− 41 33 49.9	+ 7.9	B.	
13	. .	. .	. .	+ 2 5.5	58 37 15.6	1 36.4	− 19 45 12.7	+ 1.6	B.	Preceded 15^s by a star, north.
14	. .	. .	. .	− 2 47.0	10 47 24.4	11.2	+ 28 6 3.6	− 9.4	B.	Preceded 20^s by 9th mag. star, same revolution nearly.
15	. .	. .	. .	− 1 12.2	2 13 54.2	2.3	+ 36 39 42.7	− 10.0	B.	
16	. .	. .	. .	− 2 29.7	55 17 36.1	1 27.0	− 16 25 23.9	+ 1.6	B.	
17	. .	. .	. .	+ 1 28.3	63 56 34.3	2 0.2	− 25 4 55.3	+ 4.1	B	R. A. carefully noted; large star preceded 15^s.
18	30.349	54.4	48.6	+ 0 48.4	70 20 55.6	2 44.0	− 31 30 0.4	+ 5.9	B.	
19	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
20	. .	. .	. .	+ 0 58.2	50 46 8.4	1 12.3	− 11 53 41.5	+ 2.0	B.	Star, same magnitude, preceded 2^s; R. A. carefully noted.
21	30.350	58.6	48.1	− 3 28.5	50 26 42.3	1 11.5	− 11 34 14.5	+ 2.2	B.	
22	. .	. .	. .	− 1 32.0	60 23 38.6	1 43.8	− 21 31 43.1	+ 4.3	B.	Preceded about 30^s by star of same magnitude.
23	. .	. .	. .	− 0 22.7	72 4 44.8	3 1.1	− 33 14 6.7	+ 6.5	B.	
24	30.348	53.0	47.0	− 2 37.5	7 47 29.4	8.1	+ 31 6 1.7	+ 0.0	B.	
25	30.390	63.0	58.7	− 4 6.3	44 55 58.2	57.8	− 6 3 16.7	− 8.6	D.	
26	. .	. .	. .	− 2 12.2	44 57 52.3	57.9	− 6 5 10.9	− 8.6	D.	
27	. .	. .	. .	− 0 1.3	40 25 0.8	49.4	− 1 32 11.0	− 9.3	D.	
28	. .	. .	. .	+ 0 15.9	40 25 18.0	49.4	− 1 32 28.2	− 9.3	D.	
29	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
30	30.389	62.0	56.0	− 0 27.4	75 34 36.1	3 42.8	− 36 44 39.7	+ 4.6	D.	
31	. .	. .	. .	+ 0 29.0	11 25 32.4	11.8	+ 27 27 55.1	− 11.7	D.	Very faint and uncertain.
32	. .	. .	. .	− 0 38.2	4 59 28.2	5.1	+ 33 54 6.0	− 13.1	D.	
33	. .	. .	. .	− 0 36.7	4 59 29.7	5.1	+ 33 54 4.4	− 12.0	D.	
34	30.389	60.8	54.2	− 3 33.0	67 21 33.7	2 19.3	− 28 30 13.8	+ 4.1	D.	
35	. .	. .	. .	| 0 45.2	63 30 51.3	1 56.9	− 24 39 9.0	+ 3.4	D.	
36	. .	. .	. .	+ 0 36.2	0 30 45.1	0.5	+ 38 22 53.6	− 9.9	D.	
37	30.390	59.2	53.0	− 2 23.9	63 52 43.6	1 59.1	− 25 1 3.5	+ 4.2	D.	
38	. .	. .	. .	+ 0 2.1	72 50 8.7	3 4.5	− 33 59 34.0	+ 5.3	B.	
39	30.307	64.0	59.8	+ 0 4.0	72 50 10.6	3 4.5	− 33 59 35.9	+ 5.3	B.	
40	. .	. .	. .	+ 1 29.3	38 1 35.8	45.1	+ 0 51 18.3	− 9.4	B.	
41	. .	. .	60.0	+ 1 12.1	57 56 15.8	1 32.0	− 19 4 8.5	− 1.9	B.	Numerous stars in field, but none within 15^s R. A.
42	30.310	63.5	58.9	− 3 26.1	66 1 38.1	2 9.3	− 27 10 8.1	+ 1.6	B.	
43	. .	. .	. .	− 0 17.4	66 4 46.8	2 9.6	− 27 13 17.1	+ 1.6	B.	
44	. .	. .	. .	− 1 24.7	11 23 39.8	11.7	+ 27 29 47.7	− 8.4	B.	Star preceding this about 12^s or 15^s; seemed to have 26 or 27 revolutions.
45	30.307	61.2	55.5	+ 0 55.7	49 6 1.7	1 7.1	− 10 13 29.5	− 2.7	B.	
46	. .	. .	. .	+ 1 15.4	77 51 23.4	4 24.1	− 39 2 8.2	+ 4.6	B.	Corr. −0″.30 applied to mean of A, B, C, D.
47	. .	. .	. .	+ 0 41.1	0 30 48.0	0.5	+ 38 22 50.8	− 8.7	B.	
48	. .	. .	54.5	− 1 3.7	15 49 1.4	16.5	+ 23 4 21.3	− 6.6	B.	
49	. .	. .	. .	+ 2 44.1	63 52 48.7	1 58.4	− 25 1 7.9	+ 4.3	B.	
50	30.308	59.5	53.7	− 0 54.5	45 59 7.1	1 0.4	− 7 6 28.3	+ 0.1	B.	Good observation; declination seems to differ, but no other star near.
51	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
52	. .	. .	. .	+ 0 0.2	40 25 0.9	48.6	− 1 32 10.3	− 9.2	D.	
53	30.216	64.5	63.3	+ 0 14 4	40 25 15.1	48.6	− 1 32 24.5	− 9.2	D.	
54	32.220	64.5	62.0	− 2 25.0	73 22 38.2	3 9.4	− 34 32 7.3	+ 3.1	D.	
55	30.222	64.2	61.0	+ 0 58.9	78 51 2.6	4 42.9	− 40 2 6.2	+ 5.5	D.	
56	. .	. .	60.9	− 0 20.4	66 4 42.4	2 8.7	− 27 13 11.9	+ 1.7	D.	
57	30.228	64.0	60.7	+ 3 35.1	57 56 28.2	1 31.5	− 19 4 20.5	− 0.5	D.	
58	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
59	. .	. .	. .	− 2 28.9	60 22 34.4	1 41.2	− 21 30 36.4	+ 2.0	D.	Several stars in field.
60	30.214	59.8	54.9	+ 1 56.6	55 12 1.8	1 23.4	− 16 19 45.9	+ 3.2	D.	Visitors.
61	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
62	30.028	60.2	55.2	− 1 2.9	2 9 1.1	2.2	+ 36 44 36.0	− 15.9	B.	Star preceding 15^s, 7.5th magnitude.
63	. .	. .	55.0	− 0 16.7	77 59 47.2	4 24.7	− 39 10 32.7	+ 6.8	B.	
64	. .	. .	. .	− 3 25.4	S. 46 11 38.2	1 0.1	− 7 18 59.0	− 2.5	B.	Star 9th mag. preceding 10^s; several stars in field.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Oct. 5	1	Anon. $20^h 36^m 55^s$.	7.0	3	III–VII.	354 30 1.9	6.2	6.2	7.3	5.5	0.5	4.60	32.634	+ 0.727	33.368
	2	ι Capricorni . . .	5.0	3	III–VII.	336 15 2.7	5.8	7.2	7.2	5.3	0.3	4.75	28.666	. .	29.396
	3	Anon. $21^h 23^m 52^s$.	8.0	2	IV, VI.	248 55 0.8	4.8	8.2	13.6	8.2	5.5	6.85	26.282	. .	27.011
	4	Schjellerup 8841. .	9.0	1	IV.	320 0 3.5	7.3	6.0	9.0	6.0	3.2	5.83	28.685	. .	29.404
	5	Anon. $21^h 40^m 40^s$.	9.5	1	VI.	" " "	"	"	"	"	"	"	28.140	. .	28.875
	6	O. Arg. N. 23385 .	8.0	4	III, IV, V, VI.	265 55 5.3	8.0	10.3	15.5	10.0	10.0	9.85	30.997	. .	31.721
	7	Anon. $22^h 15^m 53^s$.	9.3	3	III–VII.	330 45 4.0	8.2	7.0	12.0	7.8	2.2	6.87	27.306	. .	28.035
	8	Anon. $22^h 22^m 9^s$.	9.0	3	III–VII.	329 30 4.8	9.1	9.0	11.0	8.0	3.0	7.48	32.476	. .	33.205
6	9	64 Sagittarii	. .	3	III–VII.	330 50 4.1	7.3	7.0	9.5	8.0	4.0	6.65	29.058	+ 0.603	29.663
	10	Weisse XX, 841. .	. .	2	I, II.	326 10 5.7	7.0	6.8	9.2	8.0	3.4	6.68	33.684	. .	34.270
	11	Weisse XX, 846. .	. .	2	IV, V.	" " "	"	"	"	"	"	"	35.310	. .	35.909
	12	Weisse XX, 851. .	. .	2	VII, VIII.	" " "	"	"	"	"	"	"	26.397	. .	27.019
	13	Anon. $20^h 41^m 6^s$.	. .	3	IV–VI.	332 50 4.9	8.1	8.0	11.8	8.9	2.7	7.40	29.129	. .	29.733
	14	Lacaille 8594. . .	. .	3	III–VII.	349 10 4.0	8.0	8.3	12.9	7.7	2.0	7.15	35.216	. .	35.825
	15	Nadir	. .	.	. .	100 0 3.7	9.0	5.3	13.2	9.9	6.2	7.88	35.529	. .	. .
	16	Lalande 41614 . .	. .	3	IV–VI.	280 40 3.3	7.8	7.1	12.0	9.8	6.1	7.68	27.723	. .	28.324
	17	Anon. $21^h 23^m 43^s$.	7.0	3	IV–VI.	249 0 2.8	4.8	9.3	15.1	9.8	7.0	8.13	31.004	. .	31.599
	18	β Cephei, (comp.) . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	39.771	. .	40.366
	19	Anon. $24^h 42^m 21^s$.	. .	1	V.	316 50 1.3	2.8	2.0	6.0	4.9	0.8	2.97	30.011	. .	30.614
	20	Anon. $21^h 50^m 13^s$.	8.0	4	I, II, VIII, IX.	340 40 1.0	6.3	5.0	10.0	5.0	0.0	4.55	33.890	. .	34.508
	21	Anon. $21^h 50^m 14^s$.	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	36.958	. .	37.562
	22	Anon. $22^h 1^m 4^s$ . .	. .	2	V, VI.	265 54 59.8	65.0	66.0	73.2	67.0	65.1	66.02	32.422	. .	33.026
	23	Anon. $22^h 2^m 14^s$.	. .	1	VI.	" " "	"	"	"	"	"	"	38.500	. .	39.105
	24	Anon. $22^h 21^m 36^s$.	9.0	3	III–VII.	335 10 1.1	4.0	3.8	6.7	3.6	59.9	3.18	25.594	. .	26.200
	25	Anon. $22^h 30^m 58^s$.	. .	3	IV–VI.	354 15 1.4	5.9	7.0	11.0	5.0	59.8	5.02	32.903	. .	33.508
	26	B. A. C. 7951, (1st *)	8.0	2	IV–VI.	323 50 1.6	4.4	3.9	7.7	4.9	59.5	3.67	35.413	. .	36.018
	27	B. A. C. 7951, (2d *)	8.0	2	II, VIII.	" " "	"	"	"	"	"	"	35.490	. .	36.094
	28	Anon. $22^h 41^m 11^s$.	8.0	2	V, VII.	" " "	"	"	"	"	"	"	33.214	. .	33.825
	29	Anon. $22^h 51^m 41^s$,(1st*)	. .	2	I, IV.	345 45 2.3	5.0	5.6	8.2	3.0	8.0	5.35	40.990	. .	41.589
	30	Anon. $22^h 51^m 41^s$,(2d *)	. .	1	V.	" " "	"	"	"	"	"	"	40.713	. .	41.316
	31	Anon. $22^h 51^m 41^s$,(3d *)	. .	2	II, IX.	" " "	"	"	"	"	"	"	32.876	. .	33.503
	32	Anon. $22^h 53^m 9^s$. .	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	36.496	. .	37.134
7	33	Anon. $20^h 35^m 18^s$.	8.3	2	IV, VI.	274 5 2.4	8.7	7.8	10.9	7.8	8.3	7.65	28.953	+ 0.739	29.686
	34	Weisse XX, 1059 .	. .	3	III–VII.	329 45 3.1	6.0	6.0	6.5	7.3	2.0	5.15	33.957	. .	34.698
	35	Nadir	. .	.	. .	100 0 3.2	8.4	3.0	10.0	9.4	6.4	6.73	29.476	. .	. .
	36	B. A. C. 7424. . .	. .	3	III–VII.	342 15 4.5	7.4	8.4	8.9	10.0	1.9	6.85	39.092	. .	39.835
	37	Anon. $21^h 21^m 41^s$.	8.7	3	IV–VI.	249 0 4.0	5.9	9.9	14.1	8.7	11.0	8.93	23.493	. .	24.224
	38	Anon. $21^h 31^m 47^s$.	. .	1	VII.	343 55 3.8	7.7	6.0	10.3	8.0	3.7	6.58	25.372	. .	26.132
	39	O. Arg. N. 23425. .	9.0	2	VII, IX.	265 55 1.0	3.7	6.0	9.9	8.1	5.7	5.73	38.384	. .	39.101
	40	Anon. $22^h 22^m 20^s$.	8.0	2	IV, VI.	329 30 0.8	3.2	4.0	5.0	3.9	2.5	3.23	32.180	. .	32.920
	41	Anon. $22^h 22^m 22^s$.	9.0	2	II, VIII.	" " "	"	"	"	"	"	"	31.134	. .	31.878
	42	Piazzi XXII, 169 .	6.5	3	III–VII.	315 4 59.4	61.5	60.0	63.0	64.7	60.6	61.53	35.731	. .	36.469
	43	Anon. $22^h 42^m 36^s$.	9.3	3	III–VII.	333 9 59.0	62.4	63.2	63.1	62.0	63.5	62.20	32.741	. .	33.482
	44	Anon. $22^h 55^m 26^s$.	8.5	3	III–VII.	323 24 59.3	62.2	61.2	62.1	64.2	58.0	61.17	28.058	. .	28.798
	45	Anon. $22^h 6^m 58^s$	9.0	3	III–VII.	" " "	"	"	"	"	"	"	31.225	. .	31.965
	46	O. Arg. S. 22712. .	. .	3	III–VII.	341 54 59.0	61.5	62.9	62.3	62.6	54.0	60.38	38.603	. .	39.346
	47	97 Aquarii	. .	3	III–VII.	334 40 2.7	4.0	3.8	5.1	5.4	58.0	3.17	34.231	. .	34.973
	48	22 Piscium	6.0	3	III–VII.	316 45 3.6	6.2	5.8	7.6	7.6	4.0	5.80	38.106	. .	38.844
	49	Weisse XXIII, 1002	8.5	2	III, VII.	318 25 3.9	8.4	5.9	7.3	8.0	4.5	6.33	36.552	. .	37.291
	50	B. A. C. 8374 . .	. .	3	IV–VI.	290 35 3.4	6.7	5.4	9.6	9.5	5.7	6.72	29.049	. .	29.786
	51	Anon. $0^h 11^m 5^s$ . .	9.3	2	III, VII.	325 50 2.8	4.2	4.1	6.0	6.1	0.9	4.02	34.604	. .	35.345
	52	Weisse O, 453 . .	9.3	3	III–VII.	310 55 3.4	7.4	4.1	7.2	7.2	2.1	5.23	29.548	. .	30.285
	53	Lacaille 169 . . .	6.5	3	III, V, VI.	349 0 3.3	9.0	9.0	10.0	8.0	0.8	6.68	30.726	. .	31.467
	54	O. Arg. S. 442 . .	. .	3	III–VII.	342 50 3.9	8.5	8.6	9.9	8.5	0.0	6.57	34.462	. .	35.205
	55	B. A. C. 306 . . .	. .	3	III–VII.	353 5 3.5	7.8	7.0	11.0	7.2	0.8	6.22	30.668	. .	31.413
8	56	Anon. $22^h 0^m 52^s$.	. .	2	V, VII.	265 55 3.8	7.0	7.8	13.1	11.0	9.0	8.62	32.514	+ 0.623	33.134
	57	Lacaille 9139. . .	. .	3	IV–VI.	356 30 3.8	7.5	7.0	11.1	6.7	1.3	6.23	33.678	. .	34.303
	58	Lacaille 9194. . .	. .	3	IV–VI.	358 45 4.0	8.0	7.3	13.2	7.0	2.2	6.95	41.321	. .	41.946
	59	B. A. C. 7951, (1st *) .	8.0	3	I, II, VIII.	323 50 4.2	5.0	5.0	6.9	8.0	3.0	5.35	35.470	. .	36.096
	60	B. A. C. 7951, (2d *) .	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	35.513	. .	36.136
	61	Anon. $22^h 51^m 42^s$,(1st*)	. .	4	I, III, VII, IX.	345 40 4.3	5.9	6.0	6.0	6.0	1.0	4.87	31.393	. .	32.032
	62	Anon. $22^h 51^m 42^s$,(2d *)	. .	4	II–VIII.	" " "	"	"	"	"	"	"	31.146	. .	31.777
	63	Lacaille 9352. . .	. .	3	III–VII.	355 25 3.3	7.4	6.3	9.3	4.9	0.9	5.35	27.291	. .	27.921
	64	Weisse XXIII, 98 .	. .	2	IV, VI.	325 55 2.8	3.7	3.0	5.0	6.7	1.0	3.70	33.251	. .	33.875
	65	Weisse XXIII, 242.	. .	2	III, V.	321 10 2.8	5.2	4.8	7.3	7.3	3.1	5.08	29.612	. .	30.228

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	30.037	59.4	54.8	− 1 45.6	S. 74 28 19.0	3 24.8	− 35 38 4.6	+ 6.8	B.	
2	. .	. .	53.5	+ 0 19.1	S. 56 15 23.8	1 26.6	− 17 23 11.2	+ 2.2	B.	
3	. .	. .	. .	+ 1 33.5	N. 31 3 19.6	34.9	+ 69 57 33.8	− 11.3	B.	
4	. .	. .	. .	+ 0 18.7	S. 40 0 24.5	48.8	− 1 7 34.0	− 1.4	B.	
5	30.060	58.0	52.2	+ 0 35.2	S. 40 0 41.1	48.8	− 1 7 50.6	− 1.4	B.	
6	. .	. .	. .	− 0 53.9	N. 14 5 44.1	14.6	+ 52 59 37.9	− 8.0	B.	
7	. .	. .	. .	+ 1 1.5	S. 50 46 8.4	1 11.2	− 11 53 40.3	+ 2.5	B.	
8	30.060	57.0	50.9	− 1 40.4	49 28 27.0	1 8.1	− 10 35 55.8	+ 2.2	B.	Star 9.5th magnitude, 31.185 rev., IX wire, followed 2s.
9	30.110	58.7	52.7	+ 0 10.5	50 50 17.2	1 11.3	− 11 57 49.2	− 2.6	D.	
10	. .	. .	. .	− 2 13.9	46 7 52.8	1 0.6	− 7 15 14.1	− 2.5	D.	
11	. .	. .	. .	− 3 3.3	46 7 3.4	1 0.5	− 7 14 24.6	− 2.5	D.	
12	. .	. .	. .	+ 1 33.3	46 11 40.0	1 0.7	− 7 19 1.4	− 2.5	D.	
13	. .	. .	. .	+ 0 8.3	52 50 15.7	1 16.8	− 13 57 53.3	− 0.1	D.	
14	30.112	57.0	51.3	− 3 2.7	69 7 4.5	2 31.7	− 30 15 56.9	+ 5.3	D.	
15	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	D.	
16	. .	. .	. .	+ 0 52.5	S. 0 41 0.2	0.7	+ 38 12 38.4	− 10.6	D.	
17	. .	. .	. .	− 0 50.1	N. 31 0 42.0	35.1	+ 69 54 56.3	− 11.5	D.	
18	. .	. .	. .	− 5 25.4	N. 31 5 17.3	35.2	+ 69 59 31.7	− 11.2	D.	
19	. .	. .	. .	− 0 19.2	S. 36 49 43.7	43.8	+ 2 3 11.8	− 2.1	D.	
20	. .	. .	. .	− 2 21.3	60 37 43.2	1 43.6	− 21 45 47.6	+ 4.5	D.	
21	30.120	56.0	50.0	− 3 57.2	S. 60 36 7.3	1 43.4	− 21 44 11.5	+ 4.5	D.	
22	. .	. .	. .	− 1 34.8	N. 14 6 28.8	14.7	+ 53 0 22.8	− 8.2	D.	
23	. .	. .	. .	− 4 45.8	N. 14 9 39.7	14.8	+ 53 3 33.8	− 8.1	D.	
24	30.124	55.5	49.0	+ 1 58.9	S. 55 12 2.1	1 24.2	− 16 19 47.0	+ 3.7	D.	
25	. .	. .	48.9	− 1 50.0	74 13 15.0	3 24.6	− 35 23 0.3	+ 8.5	D.	
26	. .	. .	. .	− 3 8.7	43 46 55.0	56.2	− 4 54 11.9	+ 1.7	D.	
27	. .	. .	. .	− 3 11.1	43 46 52.6	56.2	− 4 54 9.5	+ 1.7	D.	
28	. .	. .	. .	− 1 59.9	43 48 3.8	56.2	− 4 55 20.7	+ 1.7	D.	
29	. .	. .	. .	− 6 3.9	65 39 1.5	2 8.9	− 26 47 31.2	+ 6.5	D.	
30	. .	. .	. .	− 5 55.3	65 39 10.0	2 8.9	− 26 47 39.7	+ 6.5	D.	
31	. .	. .	. .	− 1 49.8	65 43 15.5	2 9.3	− 26 51 45.6	+ 6.5	D.	
32	. .	. .	. .	− 3 43.8	S. 65 41 21.6	2 9.1	− 26 49 51.4	+ 6.5	D.	
33	30.210	60.0	54.9	+ 0 9.8	N. 5 54 42.5	6.0	+ 44 48 27.8	− 14.7	B.	
34	. .	. .	. .	− 0 27.3	S. 49 44 37.9	1 8.5	− 10 52 7.1	− 1.0	B.	
35	. .	. .	. .	. .	. . . . .	. .	. . . .	. .	B.	
36	30.214	59.2	53.3	− 5 8.7	S. 62 9 58.2	1 49.9	− 23 18 8.8	+ 4.0	B.	
37	. .	. .	. .	+ 3 0.7	N. 30 56 50.4	1 16.5	+ 69 51 46.1	− 7.3	B.	
38	. .	. .	. .	+ 2 1.0	S. 63 57 7.6	1 58.8	− 25 5 27.1	+ 3.5	B.	Faint but good observation; star 7th magnitude 15s earlier, north.
39	30.209	57.8	51.8	− 4 45.6	N. 14 9 39.9	2 27.4	+ 53 5 46.5	− 8.2	B.	
40	. .	. .	. .	− 1 31.5	S. 49 28 31.7	1 8.4	− 10 36 10.9	+ 2.4	B.	
41	. .	. .	. .	− 0 58.8	49 29 4.4	1 8.5	− 10 36 33.6	+ 2.4	B.	2s later than the preceding.
42	. .	. .	. .	− 3 22.9	35 1 38.6	41.1	+ 3 51 19.6	− 0.7	B.	
43	30.220	56.0	50.5	− 1 49.2	53 8 13.0	1 18.0	− 14 15 51.8	+ 3.7	B.	Large star following 7s.
44	. .	. .	. .	+ 0 37.6	43 25 38.8	55.5	− 4 32 55.0	+ 2.0	B.	
45	. .	. .	. .	− 1 1.6	43 23 59.6	55.4	− 4 31 15.8	+ 2.3	B.	
46	. .	. .	. .	− 4 53.3	61 50 7.1	1 49.2	− 22 58 17.0	+ 5.8	B.	
47	. .	. .	. .	− 2 35.9	54 37 27.3	1 22.5	− 15 45 10.5	+ 4.5	B.	
48	. .	. .	. .	− 4 37.5	36 40 28.3	43.8	+ 2 12 27.2	+ 2.4	B.	
49	. .	. .	. .	− 3 48.7	38 21 17.6	46.4	+ 0 31 35.2	+ 2.7	B.	
50	30.220	54.1	48.7	+ 0 6.7	10 35 13.4	11.0	+ 28 18 14.8	+ 1.4	B.	
51	. .	. .	. .	− 2 47.6	45 47 16.5	1 0.4	− 6 54 37.6	+ 3.2	B.	Star 8.7th magnitude north.
52	. .	. .	. .	− 0 8.9	30 54 56.3	35.2	+ 7 58 7.7	+ 3.1	B.	
53	30.214	53.6	48.4	− 0 46.0	68 59 20.7	2 32.1	− 30 8 13.6	+ 5.8	B.	
54	. .	. .	. .	− 2 43.2	62 47 23.4	1 54.0	− 23 55 38.2	+ 5.0	B.	
55	30.214	53.1	48.1	− 0 44.3	S. 73 4 21.9	3 11.2	− 34 13 53.9	+ 5.4	B.	
56	. .	. .	. .	− 1 38.2	N. 14 56 29.6	14.7	+ 53 0 23.5	− 8.7	D.	Star precedes 10s, at 37 revolutions.
57	30.262	58.0	53.1	− 2 14.9	S. 76 27 51.3	3 58.1	− 37 38 10.2	+ 9.3	D.	
58	. .	. .	52.7	− 6 15.1	78 38 51.8	4 43.2	− 39 49 55.8	+ 9.8	D.	
59	. .	. .	. .	− 3 11.2	43 46 54.2	56.0	− 4 54 10.9	+ 1.7	D.	
60	. .	. .	. .	− 3 12.4	43 46 52.9	56.0	− 4 54 9.7	+ 1.7	D.	
61	. .	. .	. .	− 1 3.7	65 39 1.2	2 8.6	− 26 47 30.5	+ 6.7	D.	
62	. .	. .	. .	− 0 55.7	65 39 9.2	2 8.6	− 26 47 38.5	+ 6.7	D.	
63	30.260	57.2	52.0	+ 1 5.1	75 26 10.4	3 41.5	− 36 36 12.6	+ 8.9	D.	
64	. .	. .	. .	− 2 1.5	45 53 2.2	1 0.3	− 7 0 23.3	+ 2.8	D.	
65	. .	. .	. .	− 0 7.2	S. 41 9 57.9	51.2	− 2 17 9.8	+ 2.1	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Oct. 8	1	Weisse XXIII, 246.	. .	2	V, VII.	321 10 2.8	5.2	4.8	7.3	7.3	3.1	5.08	26.170	+ 0.623	26.800
	2	Nadir	. .	.	. .	100 0 2.8	7.9	4.8	10.5	10.0	5.8	6.97	29.480	. .	. .
9	3	Anon. 20h 36m 55s .	6.5	3	III–VII.	354 30 1.7	7.1	6.6	6.1	6.2	oblit.	4.93	32.431	+ 0.744	33.182
	4	Nadir	. .	.	. .	100 0 1.3	6.0	1.1	6.0	7.6	5.0	4.50	29.400	. .	. .
	5	B. A. C. 7431 . . .	6.0	2	IV, VI.	270 5 1.6	4.1	2.1	6.9	8.1	6.1	4.82	31.973	. .	32.712
	6	O. Arg. S. 22204. .	9.0	3	III–VII.	347 15 1.8	3.5	5.8	5.1	5.6	1.9	3.95	30.818	. .	31.567
	7	Weisse XXII, 658 .	8.0	2	III, VII.	310 20 1.7	3.5	2.0	0.5	7.3	2.1	2.85	33.088	. .	33.830
	8	Anon. 22h 44m 46s .	7.5	3	IV–VI.	359 0 3.4	5.2	7.0	8.3	6.8	0.4	5.18	34.312	. .	35.059
	9	Lalande 44877 . .	7.5	3	III–VII.	339 55 3.0	5.2	5.0	5.8	8.5	1.9	4.90	38.523	. .	39.271
	10	Rumker 10800 . .	9.3	3	III–VII.	322 45 2.8	6.3	4.6	6.1	9.0	4.3	5.52	25.495	. .	26.240
	11	69 Pegasi	6.5	3	III–VII.	294 30 4.0	5.5	5.0	6.9	10.8	6.1	6.38	36.852	. .	37.592
	12	Weisse XXIII, 609 .	9.0	3	III–VII.	320 45 4.0	6.0	6.2	5.3	10.0	3.8	5.88	33.406	. .	34.150
11	13	Moon, S.	. .	5	I–IX.	340 55 3.5	6.2	4.0	8.8	5.3	59.9	4.62	31.041	+ 0.746	31.797
	14	Nadir	. .	.	. .	100 0 3.5	8.0	5.2	10.8	10.0	7.1	7.43	29.491	. .	. .
13	15	B. A. C. 7210. . .	. .	3	IV–VI.	346 40 8.0	13.1	12.8	18.8	11.0	6.1	11.63	25.437	+ 0.607	26.046
	16	Moon, S. L. . . .	. .	3	III–VII.	338 15 3.7	9.0	7.0	13.4	5.9	0.7	6.62	24.569	. .	25.179
	17	B. A. C. 7586 . .	. .	3	IV–VI.	293 55 3.8	8.2	8.5	14.3	9.0	3.7	7.92	28.686	. .	29.292
	18	Nadir	. .	.	. .	100 0 3.0	11.8	7.0	16.6	10.0	4.8	8.87	29.556	. .	. .
	19	Lacaille 9163. . .	. .	3	III–VII.	354 50 4.0	12.0	10.3	15.2	8.3	1.9	8.62	34.164	. .	34.778
	20	Lacaille 9248. . .	. .	3	III–VII.	353 40 4.1	11.2	10.0	16.2	8.1	1.1	8.45	27.140	. .	27.754
	21	Lacaille 9361. . .	. .	3	III–VII.	343 55 4.3	10.5	10.0	15.8	8.9	1.7	8.53	29.990	. .	30.602
	22	Anon. 23h 7m 11s .	7.0	3	III–VII.	339 15 5.0	10.5	11.0	15.2	9.0	2.0	8.78	27.219	. .	27.830
16	23	β Piscis Australis . .	5.6	2	I, IX.	351 50 4.6	9.9	7.9	13.1	11.5	1.1	8.02	26.275	+ 0.790	27.347
	24	Anon. 22h 24m 3s .	8.5	3	III–VII.	" " "	"	"	"	"	"	"	25.377	. .	26.423
	25	O. Arg. S. 22374. .	8.5	2	VII, IX.	343 20 5.3	10.9	9.1	12.9	10.2	3.9	8.72	31.972	. .	33.046
	26	h^4 Aquarii	. .	3	III–VII.	327 15 5.8	11.9	8.2	11.0	11.1	16.9	10.82	26.783	. .	27.824
	27	Moon, S. L. . . .	. .	3	III–VII.	328 25 3.7	10.1	6.8	10.7	7.2	2.0	6.75	31.388	. .	32.430
	28	Anon. 23h 52m 22s .	8.5	3	III–VII.	349 0 2.1	9.9	8.0	12.0	6.0	59.1	4.52	25.075	. .	26.121
	29	Nadir	. .	.	. .	100 0 2.3	11.4	5.1	12.8	10.0	4.6	7.70	29.206	. .	. .
18	30	Lacaille 8887. . .	8.0	2	IV, VI.	357 20 6.6	12.5	12.0	17.4	11.6	3.0	10.52	27.930	+ 0.769	28.703
	31	Lacaille 8948. . .	7.0	3	IV–VI.	356 20 3.2	8.7	8.0	12.5	6.3	1.3	6.67	29.322	. .	30.093
	32	O. Arg. N. 23438 .	. .	3	III–VII.	266 25 3.1	7.8	10.2	15.3	10.1	6.9	8.90	33.019	. .	33.775
	33	Lacaille 9159. . .	7.0	3	III–VII.	350 29 58.0	63.4	62.2	67.0	61.0	55.5	61.18	24.597	. .	25.372
	34	Lacaille 9269. . .	. .	3	III–VII.	342 40 3.9	8.5	7.1	11.0	11.0	1.6	7.18	32.202	. .	32.975
	35	B. A. C. 8002. . .	7.0	3	III–VII.	349 0 1.4	13.2	6.6	10.1	6.7	58.0	6.00	27.992	. .	28.767
	36	Lacaille 9352. . .	. .	2	VII, IX.	355 25 0.6	8.0	5.1	8.9	4.0	57.1	3.95	27.197	. .	28.009
	37	Nadir	. .	.	. .	100 0 5.0	13.2	8.8	16.4	12.0	7.1	10.42	29.564	. .	. .
	38	B. A. C. 8296. . .	7.0	3	III–VII.	297 55 4.5	10.2	8.2	10.0	9.6	4.4	7.82	26.858	. .	27.623
	39	Weisse O, 1250 . .	. .	3	IV–VI.	316 10 4.8	9.0	9.0	9.7	9.5	5.1	7.85	29.799	. .	30.568
	40	Moon, S. L. . . .	. .	3	III–VII.	319 50 3.2	11.8	8.8	8.0	8.0	2.0	6.97	32.354	. .	33.123
26	41	O. Arg. S. 22691. .	9.3	3	III–VII.	336 55 5.6	12.7	9.8	15.1	10.4	4.2	9.63	25.297	+ 0.707	26.007
	42	Anon. 23h 45m 9s .	9.5	3	III–VII.	350 55 6.8	13.0	11.1	17.7	11.0	3.2	10.47	26.348	. .	27.061
	43	Lacaille 9662. . .	7.5	3	III–VII.	356 15 5.6	14.1	10.1	17.0	10.1	2.5	9.90	28.537	. .	29.251
	44	Lacaille 9738. . .	7.5	3	IV–VI.	341 45 3.1	12.4	9.9	14.9	10.9	59.8	8.50	27.488	. .	28.196
	45	B. A. C. 77 . . .	7.0	3	IV–VI.	350 40 4.0	12.0	8.0	17.1	8.3	0.4	8.30	36.508	. .	37.217
	46	α Phœnicis	3.5	4	VI, VII, VIII, IX.	1 50 3.9	12.0	8.7	17.2	10.0	1.0	8.80	33.374	. .	34.120
	47	ζ Cassiopeæ . . .	3.5	3	III–VII.	265 40 4.9	13.1	11.9	21.0	13.8	10.0	12.45	23.856	. .	24.550
	48	Weisse O, 787 . .	9.0	3	III–VII.	312 55 3.0	9.0	5.5	10.3	8.8	1.5	6.35	28.502	. .	29.208
	49	Weisse O, 1028 . .	8.5	3	III–VII.	316 20 3.8	9.6	5.4	11.1	10.1	2.9	7.15	32.958	. .	33.665
	50	χ Piscium	4.0	3	III–VII.	298 35 5.3	12.8	9.0	11.8	11.1	5.0	9.17	33.836	. .	34.539
	51	Lacaille 444 . . .	7.0	3	III–VII.	343 45 4.1	13.6	8.0	15.3	10.2	2.2	8.90	34.999	. .	35.710
	52	Nadir	. .	.	. .	100 0 2.1	13.2	6.2	17.0	10.1	4.1	8.78	29.573	. .	. .
27	53	B. A. C. 7538 . .	. .	3	III–VII.	2 50 5.0	12.5	9.0	16.0	10.1	3.3	9.32	26.840	+ 0.728	27.577
	54	B. A. C. 7739 . .	. .	4	VI, VII, VIII, IX.	346 35 2.7	6.6	5.0	9.6	5.5	59.5	4.82	29.496	. .	30.231
	55	Lacaille 9196. . .	. .	3	III–VII.	357 55 3.0	10.3	8.0	15.4	6.6	59.0	7.05	23.142	. .	23.878
	56	Lacaille 9443. . .	. .	3	III–VII.	1 30 2.2	8.0	7.0	15.3	6.2	58.6	6.22	33.914	. .	34.651
	57	Nadir	. .	.	. .	100 0 1.9	10.8	5.4	15.2	9.2	4.0	7.75	29.520	. .	. .
	58	B. A. C. 160 . . .	6.0	3	III–VII.	344 20 4.0	12.0	8.9	14.6	10.2	1.7	8.75	28.310	. .	29.043
28	59	Nadir	. .	.	. .	100 0 2.8	10.8	4.1	11.9	10.8	5.6	7.67	29.523	+ 0.722	. .
	60	O. Arg. S. 22436 .	8.0	3	III–VII.	339 50 3.8	9.9	8.0	8.0	9.7	2.0	6.90	28.780	. .	29.506
	61	Lacaille 9359. . .	8.0	3	III–VII.	346 40 2.0	8.9	6.8	10.5	8.0	0.5	6.12	26.196	. .	26.923
	62	τ Pegasi	5.0	3	III–VII.	295 50 0.9	7.1	4.0	8.5	9.9	2.6	5.50	26.429	. .	27.147
	63	B. A. C. 8296 . .	6.5	3	III–VII.	297 55 0.1	7.8	4.0	oblit.	9.0	0.5	4.80	26.748	. .	27.466
	64	53 Piscium	6.5	3	III–VII.	304 25 2.0	8.0	5.2	9.1	11.5	3.8	6.60	34.763	. .	35.482

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	51.6	+ 1 40.1	S. 41 11 45.2	51.2	− 2 18 57.2	+ 2.1	D.	
2	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
3	30.152	62.8	60.2	− 1 39.7	S. 74 28 25.2	3 23.4	− 35 38 9.4	+ 7.0	B.	Corr. −0″.45 applied to mean of A, B, C, D.
4	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
5	30.150	. .	58.8	− 1 25.0	N. 9 56 20.2	10.1	+ 48 50 9.5	− 12.3	B.	Visitors.
6	. .	. .	58.9	− 0 49.1	S. 67 14 14.9	2 16.2	− 28 22 51.8	+ 7.0	B.	
7	. .	. .	. .	− 2 0.1	30 18 2.8	33.6	+ 8 35 2.9	− 1.4	B.	
8	. .	. .	58.6	− 2 38.6	78 57 26.6	4 46.0	− 40 8 33.3	+ 9.2	B.	No other star near.
9	. .	. .	. .	− 4 51.0	59 50 13.9	1 38.5	− 20 58 13.2	+ 5.5	B.	R. A. noted carefully.
10	30.032	62.0	57.8	+ 1 57.7	42 47 3.2	53.1	− 3 54 17.0	+ 1.9	B.	
11	. .	. .	. .	− 3 58.2	14 26 8.2	14.8	+ 24 27 16.3	− 1.0	B.	
12	30.036	61.6	57.2	− 2 10.1	40 42 55.8	49.4	− 1 50 6.0	+ 2.7	B.	
13	29.868	61.0	57.9	− 0 56.3	60 54 8.3	− 63 6.4	− 20 57 22.7	. .	B.	
14	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
15	. .	. .	. .	+ 2 3.7	66 42 15.4	2 15.4	− 27 50 51.4	+ 4.9	D.	
16	29.871	51.5	44.5	+ 2 30.8	58 17 37.4	− 60 15.9	− 18 23 42.3	. .	D.	Barometer, &c., taken at 21^h 50^m, 10^m after observation.
17	29.894	50.0	42.8	+ 0 22.2	13 55 30.1	14.6	+ 24 57 54.6	− 7.8	D.	
18	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	
19	29.901	50.0	42.3	− 2 29.8	74 47 38.9	3 33.8	− 35 57 33.4	+ 9.5	D.	
20	. .	. .	42.5	+ 1 10.3	73 41 18.8	3 19.0	− 34 50 58.5	+ 9.3	D.	
21	. .	. .	. .	− 0 18.9	63 54 49.6	2 0.0	− 25 3 10.4	+ 6.8	D.	
22	29.907	49.5	42.3	+ 1 7.9	59 16 16.7	1 38.9	− 20 24 16.4	+ 5.8	D.	
23	. .	. .	. .	+ 1 23.0	71 51 31.0	2 58.4	− 33 0 50.2	+ 10.1	F.	0.250 revolution has been added to this day's work.
24	. .	. .	. .	+ 1 51.9	71 52 0.0	2 58.4	− 33 1 19.2	+ 10.1	F.	
25	. .	. .	. .	− 1 35.0	63 18 33.3	1 57.0	− 24 26 51.1	+ 7.0	F.	
26	. .	. .	. .	+ 1 8.1	47 16 19.0	1 4.1	− 8 23 43.8	+ 3.3	F.	
27	. .	. .	. .	− 1 16.2	48 23 50.6	− 53 56.2	− 8 36 15.1	. .	F.	
28	29.920	46.0	39.1	+ 2 1.4	69 2 7.6	2 33.9	− 30 11 2.2	+ 8.2	F.	
29	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
30	30.040	50.6	44.1	+ 0 40.6	77 20 51.1	4 17.3	− 38 31 29.2	+ 10.5	F.	
31	. .	. .	. .	− 0 2.9	S. 76 20 3.8	3 58.5	− 37 30 23.0	+ 10.4	F.	
32	. .	. .	. .	− 1 58.3	N. 13 36 49.4	14.3	+ 52 30 43.0	− 10.4	F.	
33	30.058	49.0	43.6	+ 2 24.8	S. 70 32 26.0	2 45.9	− 31 41 32.6	+ 9.2	F.	
34	. .	. .	. .	− 1 33.2	62 38 34.0	1 54.0	− 23 46 48.7	+ 7.1	F.	
35	. .	. .	. .	+ 0 38.6	69 0 44.6	2 33.3	− 30 9 38.6	+ 8.9	F.	
36	. .	. .	. .	+ 1 2.3	75 26 6.3	3 44.4	− 36 36 11.4	+ 10.6	F.	
37	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
38	30.072	47.5	41.5	+ 1 14.4	17 56 22.2	19.2	+ 20 56 57.8	− 0.4	F.	Two stars in field about the same magnitude. Observed the first; the other probably about 31 revolutions.
39	. .	. .	. .	− 0 17.8	36 9 50.1	43.4	+ 2 43 5.8	+ 2.6	F.	
40	30.070	47.0	41.0	− 1 37.9	39 48 29.1	− 48 19.8	− 0 6 30.0	. .	F.	
41	30.140	42.0	38.5	+ 2 4.9	56 57 14.6	1 31.9	− 18 5 7.3	+ 6.6	B.	
42	. .	. .	. .	+ 1 32.0	70 56 42.4	2 52.2	− 32 5 55.4	+ 10.3	B.	
43	30.158	41.9	38.0	+ 0 23.4	76 15 33.3	4 1.1	− 37 25 55.2	+ 11.6	B.	
44	. .	. .	. .	+ 0 56.5	61 46 5.0	1 51.4	− 22 54 17.2	+ 8.1	B.	
45	. .	. .	. .	− 3 46.4	70 36 21.9	2 49.2	− 31 45 31.9	+ 9.8	B.	
46	30.162	41.9	37.4	− 2 9.1	S. 81 47 59.6	6 37.2	− 43 0 57.6	+ 12.1	B.	Unsteady.
47	. .	. .	. .	+ 2 50.5	N. 14 16 57.1	15.3	+ 53 10 51.6	− 1.0	B.	
48	. .	. .	. .	+ 0 24.8	S. 32 55 31.1	39.0	+ 5 57 29.1	+ 3.1	B.	Smaller star 3′ or 4′ north.
49	. .	. .	. .	− 1 54.9	36 18 12.2	44.3	+ 2 34 42.8	+ 3.7	B.	
50	30.174	41.5	36.3	− 2 22.3	18 32 46.9	20.2	+ 20 20 32.1	+ 2.2	B.	
51	. .	. .	35.8	− 2 59.1	63 42 9.8	2 1.6	− 24 50 32.2	+ 6.9	B.	
52	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
53	30.086	41.4	34.4	+ 1 15.8	82 51 25.2	7 32.3	− 44 5 18.2	+ 12.9	F.	
54	30.084	40.0	33.4	− 0 7.2	66 34 57.6	2 18.8	− 27 43 37.1	+ 8.6	F.	
55	. .	. .	. .	+ 3 11.4	77 58 18.5	4 37.4	− 39 9 16.7	+ 12.6	F.	
56	30.068	38.0	31.9	− 2 25.8	81 27 40.4	6 26.0	− 42 40 27.2	+ 13.6	F.	
57	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
58	30.050	36.5	31.9	+ 0 30.0	64 20 38.5	2 5.6	− 25 29 4.9	+ 8.5	F.	
59	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
60	29.610	44.8	39.1	+ 0 46.8	59 50 53.7	1 40.9	− 20 58 55.4	+ 7.3	B.	
61	. .	. .	. .	+ 1 36.3	66 41 42.4	2 15.8	− 27 50 18.9	+ 9.6	B.	Hazy.
62	29.620	43.6	39.0	+ 1 29.3	15 51 34.8	16.7	+ 23 1 47.7	− 3.2	B.	
63	. .	. .	38.7	+ 1 19.3	S. 17 56 24.1	19.1	+ 20 56 56.0	− 1.3	B.	Corr. +0″.45 applied to mean of A, B, E, F.
64	. .	. .	38.6	− 2 51.9	N. 24 22 14.7	26.7	+ 14 30 57.8	+ 1.5	B.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Oct. 28	1	18 Ceti	7.0	3	III–VII.	332 25 2.0	9.2	5.6	9.3	9.6	1.4	6.18	24.509	+ 0.722	25.233
	2	Weisse O, 788	8.7	3	III–VII.	311 55 2.0	9.0	5.6	8.0	9.2	1.3	5.85	32.618	. .	33.339
	3	η Ceti	3.5	3	III–VII.	329 45 2.0	9.3	6.5	9.9	9.8	1.0	6.42	29.694	. .	30.418
	4	Neptune	3.0	1	V.	313 30 0.8	6.2	3.0	7.3	8.7	0.3	4.38	27.130	. .	27.852
	5	105 Piscium	6.5	3	III–VII.	303 5 2.0	8.2	5.0	9.0	9.6	0.3	5.68	22.653	. .	23.372
29	6	B. A. C. 7599	7.0	3	V, VII, IX.	332 10 5.0	9.5	8.0	10.0	10.0	1.7	7.37	25.509	+ 0.703	26.230
	7	Weisse XXI, 1087	8.5	3	IV–VI.	330 55 3.0	7.6	6.0	9.1	9.0	2.1	6.13	37.123	. .	37.827
	8	O. Arg. S. 21980.	8.5	3	VII, VIII, IX.	341 0 4.3	11.2	8.2	12.4	9.2	1.3	7.77	30.568	. .	31.296
	9	Anon. $22^h 22^m 51^s$	. .	3	III–VII.	349 55 4.7	10.4	8.8	13.5	10.5	2.3	8.37	25.155	. .	25.864
	10	Weisse XXII, 645	8.5	3	IV–VI.	310 15 6.8	12.4	10.4	12.9	13.8	6.3	10.43	35.593	. .	36.296
	11	Anon. $22^h 42^m 42^s$	6.0	3	V, VI, VII.	352 25 5.1	11.1	7.7	14.5	9.2	2.2	8.30	38.685	. .	39.399
	12	Lacaille 9415.	. .	2	III, VII.	360 10 5.9	13.1	10.8	17.3	10.7	4.2	10.33	28.516	. .	29.231
	13	Anon. $23^h 47^m 35^s$	9.0	3	III–VII.	324 35 7.2	12.4	10.3	13.5	15.4	6.1	10.82	33.405	. .	34.109
	14	Lacaille 9662.	7.0	1	IX.	356 20 9.6	18.2	13.2	21.3	14.8	7.3	14.07	38.140	. .	38.906
	15	O. Arg. S. 52.	. .	3	IV–VI.	338 45 11.0	11.0	17.4	20.3	16.2	8.0	15.15	25.638	. .	26.342
	16	α Phœnicis	2.0	3	III–VII.	361 50 9.7	19.0	17.0	23.4	17.3	8.8	15.87	33.556	. .	34.268
	17	B. A. C. 122	7.5	3	III–VII.	303 35 6.8	11.5	9.0	13.6	12.2	5.3	9.73	29.613	. .	30.313
	18	Anon. $0^h 40^m 3^s$	9.0	3	III, VII, IX.	309 0 6.2	14.3	9.8	13.7	14.6	6.2	10.89	27.251	. .	27.957
	19	O. Arg. S. 542	8.0	3	III–VII.	346 40 7.2	14.7	13.8	17.6	11.9	5.7	11.82	31.250	. .	31.958
	20	Weisse O, 1078	. .	3	III–VII.	310 15 11.1	19.8	17.0	19.9	20.1	11.9	16.63	36.042	. .	36.743
	21	Neptune	. .	3	III–VII.	313 30 7.1	14.0	11.0	15.0	15.1	7.9	11.68	26.345	. .	27.047
	22	B. A. C. 469	7.0	3	III–VII.	301 5 8.8	15.7	14.0	18.7	16.8	8.6	13.77	28.656	. .	29.356
	23	B. A. C. 479	. .	2	VII, IX.	351 20 8.2	15.9	14.6	19.3	13.2	8.0	13.20	21.300	. .	22.043
	24	Anon. $1^h 39^m 0^s$	7.0	3	III–VII.	315 55 7.6	12.1	10.9	15.4	14.0	7.4	11.23	35.268	. .	35.970
	25	Weisse I, 819.	7.5	3	III–VII.	320 50 10.3	18.7	16.2	20.0	18.9	10.0	15.68	29.337	. .	30.040
	26	Anon. $1^h 57^m 40^s$	. .	3	V, VII, IX.	337 0 3.3	11.9	8.3	12.7	9.3	2.6	8.02	28.572	. .	29.295
	27	Nadir	. .	.	. .	199 59 59.6	69.5	63.6	73.1	68.1	63.2	66.18	29.494	. .	. .
Nov. 1	28	Nadir	. .	.	. .	100 0 59.7	6.7	1.3	10.5	7.9	2.1	4.70	29.379	+ 0.771	. .
	29	μ Pegasi	6.5	3	IV–VI.	295 0 5.3	9.7	7.6	11.9	12.7	4.6	8.63	32.686	. .	33.456
	30	o Andromedæ	6.0	3	IV–VI.	277 15 5.3	10.9	9.0	14.9	12.1	6.7	9.82	27.945	. .	28.713
3	31	Anon. $22^h 26^m 43^s$	8.5	3	III–VII.	356 10 5.7	12.2	10.9	15.0	11.1	5.3	10.03	28.861	+ 0.764	29.632
	32	Lacaille 9313.	. .	3	IV–VI.	357 30 9.2	16.3	14.8	18.8	15.3	6.4	13.47	34.910	. .	35.679
	33	Anon. $23^h 8^m 44^s$	. .	3	III–VII.	340 50 3.3	10.3	7.7	12.8	9.4	2.2	7.62	21.628	. .	22.396
	34	Lacaille 9662.	7.0	3	III–VII.	356 15 6.8	13.2	11.2	15.6	12.1	4.6	10.58	28.443	. .	29.214
	35	O. Arg. S. 36	. .	3	III–VII.	341 45 4.4	10.0	9.1	12.0	12.2	2.6	8.38	32.269	. .	33.037
	36	Weisse O, 115	7.0	3	V, VII, IX.	316 20 5.5	9.0	5.9	9.9	12.3	5.2	7.97	30.547	. .	31.325
	37	Weisse (2) O, 341	. .	3	III–VII.	312 30 6.7	11.4	8.8	10.7	14.0	5.6	9.53	28.078	. .	28.841
	38	Weisse O, 503	. .	3	IV–VI.	320 30 6.7	10.5	9.0	11.0	11.9	6.2	9.22	33.902	. .	34.666
	39	μ Cassiopeæ	5.5	5	III, IV, V, VI, VII	264 35 9.1	14.8	15.6	22.0	20.0	14.8	16.05	25.856	. .	26.610
	40	Weisse I, 508	. .	3	III–VII.	317 0 3.2	8.4	4.0	8.0	9.1	2.5	5.87	33.678	. .	34.442
	41	Anon. $1^h 39^m 42^s$	. .	3	III–VII.	345 50 4.5	10.1	6.8	10.0	8.2	1.2	6.80	37.257	. .	38.026
	42	Weisse I, 843	. .	3	III–VII.	320 45 4.9	10.9	8.2	11.0	11.5	3.2	8.28	32.840	. .	33.604
	43	γ Andromedæ, (1st *)	6.0	3	I, II, IX.	277 10 7.9	12.9	11.0	14.9	15.6	10.8	12.18	26.880	. .	27.601
	44	γ Andromedæ, (2d *)	7.5	1	V.	" " "	"	"	"	"	"	"	26.845	. .	27.609
	45	Nadir	. .	.	. .	100 0 6.1	13.3	7.0	15.4	14.0	9.2	10.83	29.582	. .	. .
4	46	Nadir	. .	.	. .	100 0 4.1	12.3	5.9	11.5	13.9	8.5	9.37	29.526	+ 0.773	. .
	47	Neptune	. .	3	III–VII.	313 35 3.8	7.0	4.7	5.8	11.6	4.1	6.17	29.102	. .	29.874
5	48	Anon. $22^h 27^m 52^s$	. .	3	V, VI, VII.	347 5 6.2	10.1	9.2	11.0	10.1	6.0	8.77	39.116	+ 0.710	39.836
	49	O. Arg. S. 22432.	9.5	3	V, VI, VII.	339 50 8.7	14.0	13.0	13.9	12.9	7.2	11.62	31.713	. .	32.432
	50	Weisse XXII, 1088	8.5	3	VII, VIII, IX.	324 0 0.0	4.3	0.9	2.5	5.2	59.4	2.05	36.369	. .	37.102
	51	O. Arg. S. 22712.	. .	3	III–VII.	341 50 0.9	4.9	5.0	4.9	6.0	59.1	3.47	29.033	. .	29.747
	52	Anon. $23^h 16^m 3^s$	7.5	3	VII, VIII, IX.	252 35 3.9	8.2	9.1	13.3	9.8	8.0	8.72	32.894	. .	33.554
	53	Anon. $23^h 20^m 17^s$	7.0	2	VI, VII.	" " "	"	"	"	"	"	"	17.856	. .	18.555
	54	Anon. $23^h 47^m 36^s$	. .	2	VII, IX.	324 35 2.6	7.7	3.7	6.0	8.0	3.0	5.17	33.122	. .	33.855
	55	Anon. $23^h 52^m 52^s$	8.8	2	VIII, IX.	312 45 4.7	7.1	5.4	7.0	10.3	4.9	6.57	32.942	. .	33.670
	56	Anon. $0^h 4^m 46^s$	. .	3	III–VII.	352 20 3.5	9.7	6.5	10.0	8.0	1.7	6.57	25.073	. .	25.789
	57	B. A. C. 136, (1st *)	. .	3	V, VII, VIII.	354 30 1.6	6.5	5.0	7.2	6.0	0.8	4.52	24.578	. .	25.315
	58	Anon. $0^h 35^m 29^s$	8.0	3	V, VII, IX.	308 50 1.5	5.8	2.9	5.2	8.0	2.7	4.35	35.495	. .	36.214
	59	Anon. $0^h 39^m 58^s$	9.2	2	VII, IX.	308 59 59.8	64.1	61.1	62.8	65.3	61.1	62.37	26.890	. .	27.615
	60	B. A. C. 341	7.0	3	III–VII.	303 54 57.4	60.1	60.0	61.8	64.0	57.6	60.15	30.476	. .	31.189
	61	Anon. $1^h 13^m 48^s$	9.5	3	III–VII.	296 4 58.8	62.5	59.0	61.4	63.3	57.8	60.47	34.203	. .	34.909
	62	Weisse I, 227	9.5	2	VII, IX.	321 24 55.0	62.0	60.0	61.0	60.8	55.7	59.08	24.972	. .	25.704
	63	Lacaille 459	9.0	3	III–VII.	354 49 56.6	63.6	62.7	63.9	61.5	56.5	60.80	27.369	. .	28.086
	64	O. Arg. S. 1049	. .	3	I, II, III.	345 50 4.8	7.4	8.0	8.4	7.7	1.9	6.37	24.901	. .	25.614

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 2 29.1	N. 52 27 35.3	1 16.4	− 13 35 12.5	+ 6.2	B.	
2	29.630	41.8	38.0	− 1 44.7	31 53 21.2	36.7	+ 6 59 41.4	+ 2.9	B.	
3	. .	. .	. .	− 0 13.1	49 44 53.3	1 9.6	− 10 52 23.7	+ 5.6	B.	
4	30.636	41.5	37.9	+ 1 7.2	33 31 11.6	38.9	+ 5 21 48.7	. .	B.	
5	. .	. .	37.5	+ 3 27.2	23 8 32.9	25.2	+ 15 44 41.1	+ 3.2	B.	Hazy, and stars unsteady.
6	. .	. .	. .	+ 1 58.0	52 12 5.3	1 15.9	− 13 19 42.0	+ 3.3	F.	
7	29.784	45.0	40.4	− 4 5.5	50 51 0.6	1 12.4	− 11 58 33.7	+ 3.0	F.	
8	. .	. .	. .	− 0 40.6	60 59 27.2	1 46.3	− 22 7 34.2	+ 7.0	F.	
9	29.780	43.0	38.8	+ 2 9.4	69 57 17.8	2 40.9	− 31 6 19.4	+ 10.2	F.	
10	. .	. .	. .	− 3 17.5	30 11 53.0	34.5	+ 8 41 11.8	− 1.8	F.	
11	. .	. .	. .	− 4 55.0	72 20 13.3	3 4.1	− 33 29 38.2	+ 11.3	F.	
12	. .	. .	. .	+ 0 24.1	80 10 34.4	5 30.9	− 41 22 26.1	+ 13.6	F.	
13	. .	. .	. .	− 2 8.8	44 33 2.0	58.6	− 5 40 21.4	+ 4.2	F.	Another star, same magnitude, following 15^s, a little north.
14	29.780	41.4	35.8	− 4 39.5	76 15 34.6	3 59.2	− 37 25 54.6	+ 12.2	F.	
15	. .	. .	. .	+ 1 54.5	58 47 9.6	1 37.9	− 19 55 8.3	+ 7.6	F.	
16	. .	. .	. .	− 2 13.2	81 48 2.7	6 30.4	− 43 0 53.8	+ 12.7	F.	
17	. .	. .	. .	− 0 9.8	23 34 59.9	26.0	+ 15 18 13.4	+ 1.1	F.	
18	29.796	41.0	35.3	+ 1 3.9	29 1 14.8	33.0	+ 9 51 51.4	+ 2.4	F.	
19	. .	. .	. .	− 1 1.3	66 39 10.5	2 16.9	− 27 47 48.1	+ 8.7	F.	
20	. .	. .	. .	− 3 31.5	30 11 45.1	34.6	+ 8 41 19.6	+ 3.0	F.	
21	29.824	40.5	37.9	+ 1 32.4	33 31 44.1	39.2	+ 5 21 16.0	. .	F.	
22	. .	. .	. .	+ 0 20.2	21 5 33.9	22.4	+ 17 47 42.9	+ 2.9	F.	
23	. .	. .	. .	+ 4 8.8	71 24 22.0	2 55.1	− 32 33 37.8	+ 8.4	F.	
24	29.832	40.5	37.1	− 3 7.2	35 52 4.0	43.0	+ 3 0 52.2	+ 1.8	F.	
25	. .	. .	. .	− 0 1.2	40 50 14.4	51.4	− 1 57 26.6	+ 5.8	F.	
26	. .	. .	. .	+ 0 22.1	N. 57 0 30.1	1 31.5	− 18 8 22.4	+ 5.7	F.	
27	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
28	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
29	30.056	40.6	34.9	− 1 48.3	S. 14 58 20.3	16.1	+ 23 55 2.8	− 5.0	F.	
30	. .	. .	. .	+ 0 40.3	N. 2 44 9.9	2.9	+ 41 37 52.0	− 7.5	F.	
31	30.190	47.2	44.2	+ 0 11.5	S. 76 10 21.5	3 56.7	− 37 20 39.0	+ 13.0	F.	
32	. .	. .	. .	− 2 58.1	77 27 15.4	4 21.1	− 38 37 57.2	+ 13.7	F.	
33	. .	. .	. .	+ 3 57.7	60 54 5.3	1 46.5	− 22 2 12.6	+ 8.8	F.	Exceedingly faint.
34	30.190	46.0	41.8	+ 0 24.6	76 15 35.2	3 59.4	− 37 25 55.3	+ 13.2	F.	
35	. .	. .	. .	− 1 35.2	61 43 33.2	1 50.5	− 22 51 44.5	+ 9.3	F.	
36	. .	. .	. .	− 0 41.5	36 19 26.4	43.9	+ 2 33 28.9	+ 3.2	F.	
37	. .	. .	. .	+ 0 36.3	32 30 45.8	38.1	+ 6 22 15.4	+ 2.7	F.	
38	. .	. .	. .	− 2 26.3	S. 40 27 42.9	51.0	− 1 34 54.6	+ 4.5	F.	
39	30.172	48.0	39.8	+ 1 46.1	N. 15 22 57.8	16.5	+ 54 16 53.6	− 0.5	F.	
40	. .	. .	. .	− 2 19.2	S. 36 57 46.6	45.0	+ 1 55 7.6	+ 4.4	F.	
41	. .	. .	. .	− 4 11.8	65 45 55.0	2 12.4	− 26 54 28.2	+ 8.3	F.	
42	. .	. .	. .	− 1 53.0	S. 40 43 15.2	51.6	− 1 50 27.6	+ 4.9	F.	
43	30.160	43.0	38.7	+ 1 15.1	N. 2 48 32.7	2.9	+ 41 42 14.9	+ 2.8	F.	
44	. .	. .	. .	+ 1 14.8	N. 2 48 33.0	2.9	+ 41 42 15.2	+ 2.8	F.	
45	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
46	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
47	29.944	51.0	48.1	+ 0 3.9	S. 33 35 10.1	38.6	+ 5 17 50.5	. .	B.	
48	. .	. .	. .	− 5 8.7	67 0 0.0	2 15.3	− 28 8 36.1	+ 11.6	F.	
49	29.764	52.0	49.7	− 1 16.2	59 48 55.4	1 39.1	− 20 56 55.3	+ 8.6	F.	Very faint.
50	. .	. .	. .	− 3 42.8	43 56 19.3	55.7	− 5 3 35.8	+ 3.4	F.	There appeared to be two stars near together about a half-second apart; the first one the fainter, no perceptible difference in declination was observed in the second one.
51	. .	. .	. .	+ 0 7.9	S. 61 50 11.4	1 48.0	− 22 58 20.2	+ 9.3	F.	
52	29.766	51.0	47.5	− 1 51.4	N. 27 26 42.7	30.2	+ 66 20 52.2	− 9.0	F.	
53	. .	. .	. .	+ 5 57.5	N. 27 18 53.8	30.0	+ 66 13 3.0	− 8.7	F.	
54	. .	. .	. .	− 2 0.8	S. 44 33 4.3	57.3	− 5 40 22.3	+ 4.8	F.	Probably 33 revolutions.
55	. .	. .	. .	− 1 55.1	32 43 11.5	37.4	+ 6 9 50.3	+ 2.0	F.	
56	. .	. .	. .	+ 2 11.8	72 22 18.3	3 1.4	− 33 31 40.5	+ 12.4	F.	
57	29.778	49.8	44.9	+ 2 26.6	74 32 31.1	3 28.2	− 35 42 20.1	+ 12.5	F.	
58	. .	. .	. .	− 3 14.9	28 46 49.4	32.1	+ 10 6 17.8	+ 2.3	F.	
59	. .	. .	. .	+ 1 14.7	29 1 17.0	32.4	+ 9 51 49.8	+ 2.4	F.	
60	. .	. .	. .	− 0 37.2	23 54 22.9	25.9	+ 14 58 50.5	+ 2.3	F.	
61	. .	. .	. .	− 2 33.9	16 2 26.6	16.8	+ 22 50 55.9	+ 1.6	F.	
62	. .	. .	. .	+ 2 14.4	41 27 13.5	51.5	− 2 34 25.7	+ 5.1	F.	
63	29.786	49.2	46.3	+ 0 59.9	74 51 0.7	3 32.0	− 36 0 55.5	+ 10.6	F.	
64	. .	. .	. .	+ 2 17.2	S. 65 52 23.6	2 9.5	− 27 0 53.8	+ 8.7	F.	

Date.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Nov. 5	1	O. Arg. S. 1052	. .	1	V.	345 50 4.8	7.4	8.0	8.4	7.7	1.9	6.37	20.522	+ 0.710	21.232
	2	O. Arg. S. 1056	. .	1	VIII.	" " "	"	"	"	"	"	"	30.918	. .	31.662
	3	Anon. $1^h 39^m 33^s$	. .	1	IX.	" " "	"	"	"	"	"	"	37.118	. .	37.879
	4	Anon. $2^h 5^m 11^s$	. .	3	III–VII.	315 10 6.3	8.2	7.1	9.6	11.0	5.7	7.98	33.511	. .	34.220
	5	o Ceti	. .	2	VIII, IX.	322 25 6.5	10.9	9.0	10.0	10.5	5.8	8.78	25.622	. .	26.354
	6	Nadir	. .	.	. .	100 0 6.3	11.0	7.7	14.3	11.6	9.3	10.03	29.610	. .	. .
6	7	Weisse I, 208	9.5	1	V.	307 40 5.2	15.1	10.8	16.7	13.4	7.1	11.38	32.587	+ 0.748	33.335
	8	51 Andromedæ	. .	4	III, V, VII, IX.	271 0 0.8	10.7	6.2	15.9	7.6	4.1	7.55	37.708	. .	38.436
	9	107 Piscium	5.0	3	III–VII.	299 14 58.7	67.6	63.0	67.1	64.5	58.3	63.20	28.921	. .	29.666
	10	1 Arietis	6.0	3	III–VII.	297 15 2.8	11.9	7.0	oblit.	9.1	2.7	7.81	28.209	. .	28.953
	11	B. A. C. 609	6.0	3	III–VII.	307 15 2.8	8.9	8.0	10.0	8.3	2.5	6.75	32.421	. .	33.167
	12	Weisse I, 1045	8.0	4	III, V, VII, IX.	309 0 5.7	13.1	8.8	14.1	11.0	5.8	9.75	26.196	. .	26.942
	13	o Ceti	. .	3	III–VII.	322 25 6.5	14.0	11.9	15.2	11.5	4.0	10.52	25.866	. .	26.615
	14	Nadir	. .	.	. .	100 0 6.3	17.3	10.9	20.9	13.8	7.8	12.83	29.662	. .	. .
	15	Jupiter, N. L.	. .	3	I–IX.	303 30 0.0	7.5	4.2	10.1	6.8	59.2	4.63	31.833	. .	32.572
	16	Jupiter, S. L.	. .	2	III–VII.	" " "	"	"	"	"	"	"	30.325	. .	31.069
8	17	Anon. $22^h 43^m 16^s$	. .	3	III–VII.	325 10 0.2	8.0	1.5	8.2	5.9	58.8	3.77	33.509	+ 0.647	34.157
	18	Weisse XXII, 1149	9.0	1	V.	330 55 3.2	11.9	7.0	15.0	8.8	2.0	7.98	33.230	. .	33.877
	19	Weisse XXII, 1150	9.0	1	IX.	" " "	"	"	"	"	"	"	33.451	. .	34.134
	20	O. Arg. S. 22721	7.8	3	IV–VI.	340 45 3.9	12.2	7.9	17.8	9.0	1.1	8.50	28.547	. .	29.195
	21	Weisse XXIII, 679	. .	3	III–VII.	311 45 3.0	11.2	7.0	13.3	9.1	1.0	7.43	27.849	. .	28.495
	22	Anon. $23^h 52^m 1^s$	9.0	3	III–VII.	339 35 3.0	13.0	9.0	17.0	9.0	59.6	8.43	25.647	. .	26.298
	23	Weisse XXIII, 1250	8.0	3	III–VII.	316 10 3.1	9.8	6.0	11.8	9.1	1.8	6.93	29.861	. .	30.508
	24	Anon. $0^h 9^m 57^s$	. .	3	III–VII.	317 45 3.0	11.0	6.2	12.7	9.7	2.0	7.43	29.118	. .	29.765
	25	O. Arg. S. 202	7.0	3	III–VII.	339 45 3.0	12.9	10.0	17.0	9.3	59.8	8.67	32.782	. .	33.433
	26	Lacaille 131	7.0	3	IV–VI.	351 50 2.3	14.0	9.3	18.8	9.5	0.1	9.00	25.660	. .	26.309
	27	Anon. $0^h 33^m 58^s$	8.0	2	IV, V.	324 0 2.8	10.8	6.7	12.8	9.0	0.4	7.08	36.627	. .	37.270
	28	B. A. C. 174	6.5	2	VI, VII.	" " "	"	"	"	"	"	"	35.911	. .	36.570
	29	Weisse O, 724	8.0	3	III–VII.	311 35 2.2	11.1	6.1	12.7	9.0	1.0	7.02	23.204	. .	23.850
	30	O. Arg. S. 544	. .	3	III–VII.	339 15 2.1	10.2	8.0	14.8	7.8	59.0	6.98	34.927	. .	35.578
	31	B. A. C. 319	7.0	3	IV–VI.	355 15 2.5	13.0	9.0	16.1	7.0	59.2	7.80	36.255	. .	36.904
	32	Neptune	. .	3	III–VII.	313 35 1.8	9.0	5.7	12.0	8.8	0.4	6.28	25.339	. .	25.985
	33	Anon. $1^h 31^m 20^s$	. .	2	V, VII.	315 25 1.8	9.1	5.8	12.7	9.0	1.3	6.62	24.514	. .	25.168
	34	Anon. $1^h 39^m 45^s$	. .	3	III–VII.	345 50 1.0	9.0	6.4	13.3	5.9	57.1	5.45	37.201	. .	37.853
	35	Anon. $1^h 47^m 50^s$	7.5	3	IV–VI.	342 40 1.1	9.4	5.9	12.0	6.1	56.5	5.17	30.600	. .	31.248
	36	Lacaille 570	. .	3	IV–VI.	345 10 2.1	10.6	7.2	13.1	6.7	58.0	6.28	35.271	. .	35.919
	37	Weisse II, 231	. .	3	IV–VI.	330 15 2.1	11.6	8.0	15.1	8.1	0.8	7.62	30.161	. .	30.809
	38	Nadir	. .	.	. .	100 0 2.0	13.2	7.0	18.2	10.3	4.0	9.12	29.524	. .	. .
10	39	Moon, S. L.	. .	5	I–IX.	337 0 0.1	6.0	3.0	9.1	5.0	6.9	5.02	33.778	+ 0.618	34.399
	40	Nadir	. .	.	. .	100 0 2.0	12.0	5.0	16.2	10.6	5.4	8.53	29.534	. .	. .
	41	Lacaille 9283	. .	3	V–VII.	343 20 2.0	9.4	6.8	12.9	8.7	0.1	6.65	31.416	. .	32.044
	42	B. A. C. 7998	. .	3	IV–VI.	355 5 2.5	10.5	7.0	13.2	6.8	59.0	6.50	33.339	. .	33.959
	43	O. Arg. S. 22721	8.0	3	III–VII.	340 45 1.4	10.1	5.3	15.0	8.0	59.2	6.50	28.530	. .	29.152
	44	Anon. $23^h 20^m 9^s$	8.0	3	IV, VI.	252 40 1.0	7.1	6.2	15.8	6.1	4.0	6.70	26.521	. .	27.132
	45	Weisse O, 21	. .	3	III–VII.	306 55 0.5	8.0	4.2	11.1	7.0	0.7	5.25	31.728	. .	32.344
	46	48 Piscium	. .	3	III–VII.	303 10 0.0	8.0	4.1	11.0	6.2	59.1	4.73	30.269	. .	30.884
	47	49 Piscium	. .	3	III–VII.	303 35 1.0	8.1	5.0	11.8	7.1	0.0	5.50	31.409	. .	32.024
	48	Weisse O, 477	8.0	3	III–VII.	315 20 0.7	8.0	4.0	12.0	8.3	1.4	5.73	32.817	. .	33.434
	49	Lacaille 218	. .	3	III–VII.	341 20 0.9	9.1	7.0	14.8	6.9	57.3	6.00	33.555	. .	34.177
	50	Neptune	. .	3	III–VII.	313 39 59.8	67.0	63.5	70.0	67.7	58.2	64.37	33.037	. .	33.654
11	51	Moon, S. L.	. .	5	I–IX.	333 45 3.1	10.9	6.0	10.1	8.5	59.9	6.42	26.613	+ 0.756	27.376
	52	Weisse XXIII, 242	9.0	2	IV, VI.	321 10 4.0	11.0	5.2	11.5	9.2	0.8	6.95	29.652	. .	30.409
	53	Weisse XXIII, 246	9.0	2	VII, IX.	" " "	"	"	"	"	"	"	26.092	. .	26.869
	54	Anon. $23^h 23^m 25^s$	9.5	1	VI.	313 10 1.1	9.2	2.8	9.8	9.8	0.0	5.45	27.841	. .	28.605
	55	Anon. $23^h 46^m 8^s$	9.3	2	V, VII.	289 59 58.0	67.8	63.0	67.7	67.0	58.5	63.67	28.912	. .	29.671
	56	Anon. $23^h 51^m 58^s$	9.5	3	III–VII.	339 40 0.0	11.8	6.5	13.6	8.8	57.9	6.43	35.180	. .	35.940
	57	O. Arg. S. 8	9.2	2	IV–VI.	338 50 2.2	11.2	8.5	13.0	8.6	58.0	6.92	32.882	. .	33.640
	58	O. Arg. S. 9	9.2	2	VII, IX.	" " "	"	"	"	"	"	"	31.414	. .	32.201
	59	B. A. C. 122	. .	3	III–VII.	303 35 2.9	11.2	7.1	12.4	9.5	3.1	7.70	29.582	. .	30.335
	60	Anon. $6^h 35^m 24^s$	9.0	3	III–VII.	308 50 2.9	12.5	7.7	12.6	12.0	4.0	8.62	35.793	. .	36.547
	61	Weisse O, 1028	8.5	3	III–VII.	316 20 2.9	11.0	6.0	11.1	10.7	0.1	6.97	32.870	. .	33.626
	62	Neptune	. .	3	III–VII.	313 35 4.0	11.9	8.2	12.6	11.6	3.8	8.68	22.461	. .	23.216
	63	O. Arg. S. 938	7.5	3	III–VII.	349 20 4.1	14.1	10.7	17.0	10.5	1.4	9.63	22.390	. .	23.152
	64	Weisse I, 576	8.0	3	III–VII.	312 30 4.0	12.3	8.1	13.8	11.0	2.1	8.53	34.518	. .	35.273
	65	O. Arg. S. 1066	7.0	3	III–VII.	337 0 3.9	13.9	9.6	14.6	10.7	1.1	8.97	29.137	. .	29.896

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	+ 4 34.0	S. 65 54 40.4	2 9.7	− 27 3 10.9	+ 8.7	F.	
2	. .	. .	. .	− 0 52.1	65 49 14.3	2 9.2	− 26 57 44.2	+ 8.7	F.	
3	. .	. .	. .	− 4 7.2	65 45 59.2	2 8.8	− 26 54 28.8	+ 8.7	F.	
4	29.788	49.0	36.0	− 2 12.3	35 7 55.7	41.0	+ 3 45 2.5	+ 4.5	F.	
5	. .	. .	. .	+ 1 54.1	42 27 2.9	53.3	− 3 34 17.0	+ 5.1	F.	
6	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
7	29.750	42.0	35.5	− 1 44.6	S. 27 38 26.8	31.2	+ 11 14 41.2	+ 3.0	B.	
8	. .	. .	. .	− 4 24.7	N. 9 4 17.1	9.5	+ 47 58 5.9	+ 0.7	B.	Very unsteady.
9	. .	. .	. .	+ 0 10.4	S. 19 15 13.6	20.8	+ 19 38 4.8	+ 2.6	B.	
10	. .	. .	. .	+ 0 32.8	17 15 40.6	18.5	+ 21 37 40.1	+ 2.6	B.	Hazy. Corr. +1″.19 applied to mean of A, B, E, F.
11	29.738	41.3	34.9	− 1 39.2	27 13 27.5	30.7	+ 11 39 41.1	+ 3.7	B.	
12	. .	. .	. .	+ 1 35.7	29 1 45.4	33.1	+ 9 51 20.7	+ 4.0	B.	
13	29.728	41.3	34.4	+ 1 45.9	42 26 56.5	54.5	− 3 34 11.7	+ 5.2	B.	
14	. .	. .	. .	. .	. . . .	. .	. . . .	. .	B.	
15	. .	. .	. .	− 1 20.6	23 28 44.0	25.1	+ 15 24 7.6	. .	B.	
16	29.720	41.1	33.8	− 0 33.5	23 29 31.1	25.1			B.	
17	29.890	41.0	33.8	− 2 10.3	45 7 53.5	1 0.2	− 6 15 14.5	+ 3.6	D.	
18	. .	. .	. .	− 2 1.5	50 53 6.4	1 13.7	− 12 0 40.9	+ 5.2	D.	
19	. .	. .	. .	− 2 9.6	50 52 58.4	1 13.7	− 12 0 32.9	+ 5.8	D.	
20	. .	. .	. .	+ 25.2	60 45 33.7	1 46.9	− 21 53 41.3	+ 9.2	D.	
21	29.910	40.5	33.7	+ 0 47.1	31 45 54.6	37.2	+ 7 7 7.5	+ 1.1	D.	
22	. .	. .	34.8	+ 1 55.8	59 37 4.3	1 42.0	− 20 45 7.0	+ 9.2	D.	
23	29.910	40.2	34.9	− 0 15.9	36 9 51.0	43.8	+ 2 43 4.4	+ 3.0	D.	
24	. .	. .	. .	+ 7.3	37 45 14.8	47.5	+ 1 7 37.0	+ 3.6	D.	
25	. .	. .	. .	− 1 47.6	59 43 21.0	1 42.4	− 20 51 24.2	+ 9.3	D.	
26	. .	. .	35.3	+ 1 55.5	71 52 4.5	3 1.2	− 33 1 26.5	+ 12.3	D.	
27	. .	. .	. .	− 3 48.1	43 56 19.0	57.7	− 5 3 37.5	+ 5.5	D.	
28	. .	. .	. .	− 3 26.1	43 56 41.0	57.8	− 5 3 59.5	+ 5.5	D.	
29	. .	. .	. .	+ 3 12.3	31 38 19.3	37.0	+ 7 14 43.0	+ 2.9	D.	But one star.
30	29.926	40.2	34.7	− 2 55.2	59 12 11.7	1 40.4	− 20 20 12.8	+ 8.9	D.	
31	. .	. .	. .	− 3 36.6	75 11 31.2	3 43.6	− 36 21 35.6	+ 12.3	D.	
32	29.931	40.2	34.1	+ 2 5.6	33 37 11.9	39.8	+ 5 15 47.6	. .	D.	
33	. .	. .	34.7	+ 2 31.2	35 27 37.8	42.8	+ 3 25 18.7	+ 4.2	D.	
34	. .	. .	. .	− 4 6.4	65 45 59.1	2 12.6	− 26 54 32.5	+ 9.2	D.	
35	. .	. .	. .	− 0 39.1	62 39 26.1	1 55.6	− 23 47 42.4	+ 8.5	D.	
36	29.940	40.0	34.9	− 3 5.6	65 7 0.7	2 8.7	− 26 15 30.1	+ 8.7	D.	
37	. .	. .	. .	− 0 25.3	50 14 42.3	1 12.0	− 11 22 15.1	+ 4.0	D.	
38	. .	. .	. .		. . . .	. .	. . . .	. .	D.	
39	29.955	42.0	37.0	− 2 17.9	56 57 37.1	−59 44.8	− 17 4 13.0	. .	D.	
40	. .	. .	. .		. . . .	. .	. . . .	. .	D.	
41	29.960	41.0	33.0	− 1 4.0	63 19 2.6	1 59.4	− 24 27 22.8	+ 9.8	D.	
42	. .	. .	. .	− 2 4.1	75 3 2.4	3 42.4	− 36 13 5.6	+ 13.8	D.	
43	29.956	. .	32.1	+ 0 26.6	S. 60 45 32.6	1 47.5	− 21 53 40.8	+ 9.5	D.	
44	. .	. .	. .	+ 1 29.8	N. 27 18 23.6	5 11.8	+ 66 17 14.6	− 9.8	D.	
45	29.964	39.5	31.0	− 1 13.5	S. 26 53 51.8	30.7	+ 11 59 16.8	+ 0.8	D.	
46	. .	. .	. .	− 0 27.7	23 9 37.0	25.9	+ 15 43 36.3	+ 0.6	D.	
47	. .	. .	. .	− 1 3.4	23 34 2.1	26.4	+ 15 19 10.8	+ 0.7	D.	
48	. .	. .	. .	− 1 47.7	35 18 18.1	42.8	+ 3 34 38.3	+ 3.5	D.	
49	29.960	39.0	30.8	− 2 10.9	61 17 55.1	1 50.2	− 22 26 6.0	+ 9.8	D.	
50	29.954	38.7	30.5	− 1 54.6	33 38 9.8	40.1	+ 5 15 49.2	. .	D.	Evening hazy and cloudy.
51	29.974	41.0	34.0	+ 1 22.1	53 46 28.6	−57 33.4	− 13 55 15.8	. .	B.	
52	29.997	38.5	30.5	− 0 12.8	41 9 54.1	53.0	− 2 17 7.9	+ 3.4	B.	
53	. .	. .	. .	+ 1 38.0	41 11 44.9	53.1	− 2 18 58.7	+ 3.4	B.	20^s later than preceding.
54	. .	. .	. .	+ 0 43.7	33 10 49.1	39.7	+ 5 42 10.4	+ 1.2	B.	Faint. θ Piscium preceding a little more than 1^m.
55	. .	. .	. .	+ 0 10.3	10 0 14.0	10.8	+ 28 53 14.6	− 3.7	B.	
56	30.008	37.5	29.6	− 3 6.3	59 37 0.2	1 43.6	− 20 45 4.5	+ 9.7	B.	
57	. .	. .	. .	− 1 54.1	58 48 12.8	1 40.3	− 19 56 13.9	+ 9.5	B.	
58	. .	. .	. .	− 1 9.0	58 48 58.0	1 40.4	− 19 56 59.1	+ 9.5	B.	About 6^s later than previous star.
59	. .	. .	. .	− 0 10.5	23 34 57.2	26.6	+ 15 18 14.5	+ 0.7	B.	
60	30.020	36.8	29.0	− 0 25.4	28 49 43.2	33.5	+ 10 3 22.5	+ 2.2	B.	
61	. .	. .	. .	− 1 53.7	36 18 13.3	44.8	+ 2 34 41.2	+ 4.2	B.	
62	30.020	41.1	28.4	+ 3 32.1	33 38 40.8	40.4	+ 5 14 18.0	. .	B.	
63	30.020	41.0	28.2	+ 3 34.1	69 23 43.8	2 41.3	− 30 32 45.8	+ 10.8	B.	
64	. .	. .	. .	− 2 45.3	32 27 23.2	38.0	+ 6 25 38.1	+ 4.0	B.	
65	. .	. .	. .	+ 0 3.2	S. 57 0 12.2	1 33.8	− 18 8 6.8	+ 8.1	B.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Nov. 11	1	O. Arg. S. 1189 . .	8.0	3	III–VII.	337 10 4.0	13.1	9.5	13.9	9.9	1.0	8.57	27.643	+ 0.756	28.402
	2	O. Arg. S. 1259 . .	6.5	3	III–VII.	343 25 4.0	13.7	9.7	15.3	10.3	1.7	9.12	34.267	. .	35.027
	3	ο Ceti	6.0	3	III–VII.	322 25 4.5	14.0	11.1	15.1	12.9	2.9	10.08	25.857	. .	26.614
	4	κ Fornacis	6.0	3	III–VII.	343 15 2.9	12.8	9.0	14.7	11.0	0.9	8.55	27.150	. .	27.910
	5	O. Arg. S. 1655 . .	8.0	3	III–VII.	336 45 2.0	11.1	6.2	12.3	8.1	57.5	6.20	31.623	. .	32.382
	6	Weisse II, 603 . .	9.5	2	V, IX.	306 10 2.0	11.0	5.5	12.1	8.9	1.5	6.83	28.388	. .	29.152
	7	Anon. 2h 47m 55s .	7.5	3	III–VII.	342 35 2.0	12.6	8.1	13.5	8.9	59.0	7.35	34.461	. .	35.221
	8	Anon. 2h 58m 37s .	9.0	2	II, VIII.	305 5 2.0	12.1	6.0	15.0	10.0	2.2	7.88	25.390	. .	26.139
	9	Anon. 2h 58m 42s .	9.0	2	III, V.	" " "	"	"	"	"	"	"	24.700	. .	25.447
	10	Nadir	. .	.	. .	100 0 2.0	15.2	5.2	18.0	11.7	4.2	9.38	29.543	. .	. .
15	11	Nadir	. .	.	. .	100 0 3.2	12.8	7.1	15.5	10.5	6.9	9.33	29.572	+ 0.726	. .
	12	Anon. 0h 4m 53s .	9.5	3	III–VII.	312 45 2.8	7.9	6.4	10.0	9.3	2.0	6.40	30.515	. .	31.240
	13	Weisse O, 97. . .	7.5	3	III–VII.	" " "	"	"	"	"	"	"	38.963	. .	39.688
	14	O. Arg. S. 303 . .	. .	3	I, II, IX.	344 5 4.1	9.6	8.3	13.5	8.8	1.9	7.70	30.217	. .	30.958
	15	O. Arg. S. 304 . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	31.442	. .	32.169
	16	Lacaille 194 . . .	7.0	3	III–VII.	351 0 2.4	11.2	7.1	13.7	7.2	59.6	6.87	35.198	. .	35.930
	17	Weisse O, 733 . .	7.5	3	IV–VI.	311 55 0.5	7.0	4.9	10.1	6.8	59.2	4.75	28.414	. .	29.140
	18	Anon. 0h 51m 41s .	9.5	3	III–VII.	317 0 2.9	10.0	5.0	10.0	8.1	1.9	6.32	31.553	. .	32.279
	19	Weisse I, 13 . . .	. .	3	III–VII.	306 55 5.1	12.3	8.7	10.7	11.1	5.4	8.88	30.789	. .	31.513
	20	Moon, S. L. . . .	. .	5	I–IX.	317 5 6.0	14.0	9.2	14.2	11.3	6.1	10.13	33.961	. .	34.686
	21	Anon. 2h 0m 19s . .	9.0	3	III–VII.	315 45 6.1	12.8	10.6	15.5	12.5	5.9	10.57	33.271	. .	33.996
	22	O. Arg. S. 1489 . .	8.0	3	III–VII.	343 10 7.2	14.9	12.8	16.4	12.2	5.7	11.53	37.848	. .	38.578
	23	Lacaille 908 . . .	. .	3	III–VII.	341 30 6.6	16.1	12.2	20.4	13.1	4.0	12.07	31.034	. .	31.764
	24	Jupiter, S. L. . .	. .	2	II, VIII.	303 50 8.5	15.1	13.8	19.5	16.6	8.6	13.68	30.521	. .	31.239
	25	Jupiter, N. L. . .	. .	2	V, VI.	" " "	"	"	"	"	"	"	32.155	. .	32.884
	26	Nadir	. .	.	. .	100 0 3.9	9.7	6.9	12.5	11.5	7.0	8.58	29.546	. .	. .
17	27	19 Arietis	7.0	2	VIII, IX.	304 15 6.0	9.6	9.3	10.6	12.8	7.2	9.25	33.205	+ 0.728	33.945
	28	Weisse II, 188 . .	8.5	3	III–VII.	305 50 3.2	7.3	5.0	9.0	8.2	2.9	5.93	31.657	. .	32.383
	29	26 Arietis	. .	3	III–VII.	299 40 3.7	8.6	6.3	7.1	9.6	4.0	6.55	35.688	. .	36.413
	30	Lacaille 802 . . .	7.0	3	III–VII.	348 25 4.4	12.0	11.5	11.8	10.0	3.8	8.92	29.800	. .	30.533
	31	π Ceti	. .	3	III–VII.	333 20 5.7	10.1	8.6	10.6	11.9	2.4	8.22	35.150	. .	35.880
	32	Moon, S. L. . . .	. .	3	IV–VI.	300 30 8.0	12.8	11.7	11.5	15.0	8.6	11.27	32.472	. .	33.199
	33	Jupiter, N. L. . .	. .	2	III, IV.	303 55 4.8	9.5	8.4	11.2	12.1	6.0	8.67	33.252	. .	33.967
	34	Jupiter, S. L. . .	. .	2	VI, VII.	" " "	"	"	"	"	"	"	31.615	. .	32.352
18	35	Lacaille 9766. . .	. .	3	III–VII.	346 30 6.0	13.1	10.5	15.0	11.3	4.9	10.13	36.604	+ 0.624	37.233
	36	Weisse O, 305 . .	. .	3	I, III, VIII.	315 40 5.1	11.9	6.8	13.1	13.0	5.1	9.17	28.375	. .	28.990
	37	Weisse O, 308 . .	. .	2	IV, V.	" " "	"	"	"	"	"	"	24.143	. .	24.759
	38	Weisse O, 477 . .	. .	2	III, V.	315 20 4.6	13.0	8.0	12.7	15.0	6.0	9.88	32.937	. .	33.554
	39	Nadir	. .	.	. .	100 0 3.7	14.3	7.3	17.8	14.0	8.0	10.85	29.603	. .	. .
24	40	Anon. 23h 22m 28s .	9.0	3	III–VII.	313 10 5.9	11.2	9.0	16.4	11.9	5.0	9.90	23.003	+ 0.706	23.708
	41	Nadir	. .	.	. .	100 0 6.6	15.3	10.5	21.1	13.6	9.1	12.70	29.700	. .	. .
	42	Anon. 0h 3m 11s . .	. .	3	V, VII, IX.	315 20 9.0	16.2	14.1	19.2	16.9	10.1	14.25	17.349	. .	18.062
	43	B. A. C. 136, (2d *) .	9.0	3	III–VII.	354 35 5.8	17.7	14.6	19.6	11.6	5.3	12.43	34.571	. .	35.277
	44	Weisse I, 1078 . .	. .	3	IV–VI.	310 15 2.8	11.2	8.4	12.5	8.9	2.0	7.63	35.770	. .	36.476
	45	Neptune	. .	3	IV–VI.	313 40 3.8	9.8	8.1	12.8	11.2	2.5	8.03	21.389	. .	22.095
	46	a^1 Ursæ Minoris . .	. .	2	4, 5.	230 15 4.6	10.0	11.7	21.5	9.0	8.0	10.80	23.786	. .	24.487
	47	105 Piscium	. .	3	III–VII.	303 10 6.9	11.6	12.7	17.6	12.0	5.6	11.07	32.488	. .	33.191
	48	Anon. 1h 49m 41s .	. .	3	IV–VI.	346 0 7.8	14.9	14.2	17.8	11.8	4.1	11.77	31.060	. .	31.768
	49	O. Arg. S. 1261 . .	. .	3	III–VII.	341 25 7.2	16.0	14.3	20.0	12.9	2.9	12.22	31.112	. .	31.822
	50	Lacaille 660 . . .	. .	3	III–VII.	357 45 7.3	16.6	15.4	22.1	11.5	2.5	12.57	23.838	. .	24.552
	51	Weisse II, 188 . .	. .	3	IV–VI.	305 50 1.6	6.0	4.8	11.0	5.2	59.1	4.62	31.695	. .	32.400
	52	Lacaille 787 . . .	7.5	3	IV–VI.	341 20 3.3	11.9	10.4	17.4	8.1	59.1	8.37	26.026	. .	26.733
	53	Anon. 2h 33m 9s . .	8.0	2	VI, VIII.	349 55 6.5	15.7	14.4	20.3	11.8	3.6	12.05	18.596	. .	19.325
25	54	Anon. 22h 8m 52s .	. .	3	IV–VI.	340 50 4.0	13.0	9.0	18.1	10.1	2.2	9.40	32.709	+ 0.582	33.292
	55	Anon. 22h 35m 14s .	9.0	3	IV–VI.	265 15 4.0	12.0	11.1	21.2	15.0	9.0	12.05	32.122	. .	32.700
	56	O. Arg. N. 24689 .	. .	3	IV–VI.	261 5 3.8	11.0	9.0	18.0	13.0	5.8	10.10	35.321	. .	35.898
	57	Lacaille 9313. . .	. .	3	IV–VI.	357 30 3.5	12.9	9.0	18.8	9.4	oblit.	9.35	35.005	. .	35.589
	58	Anon. 22h 56m 0s .	9.5	1	V.	327 20 4.0	13.0	8.0	15.2	12.0	1.4	8.93	22.019	. .	22.601
	59	Anon. 22h 59m 9s .	9.0	3	III–VII.	" " "	"	"	"	"	"	"	28.859	. .	29.442
	60	Anon. 23h 12m 43s .	7.0	3	IV–VI.	358 0 4.9	15.2	11.0	21.8	12.1	2.2	11.20	32.637	. .	33.221
	61	Nadir	. .	.	. .	100 0 4.9	16.0	8.4	21.0	14.2	8.3	12.13	29.685	. .	. .
	62	Weisse O, 24. . .	9.0	3	III–VII.	315 25 5.0	11.8	8.2	14.3	12.9	5.6	9.63	27.018	. .	27.599
	63	O. Arg. S. 47. . .	7.5	3	III–VII.	337 35 4.8	12.2	9.9	14.8	10.1	2.0	8.97	35.709	. .	36.294
	64	Weisse O, 477 . .	. .	3	III–VII.	315 20 3.8	12.0	7.2	15.0	12.9	4.0	9.15	32.942	. .	33.523

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. . .	. . .	. . .	+ 0 50.0	S. 57 10 58.6	1 34.4	− 18 18 53.8	+ 7.9	B.	
2	. . .	. . .	. . .	− 2 37.6	63 22 31.5	2 1.2	− 24 30 53.5	+ 8.8	B.	
3	. . .	. . .	. . .	+ 1 46.0	42 26 56.0	55.7	− 3 34 12.5	+ 5.4	B.	
4	30.020	35.2	28.8	+ 1 5.4	63 16 14.0	2 0.5	− 24 24 35.2	+ 8.0	B.	
5	. . .	. . .	. . .	− 1 14.7	56 43 51.5	1 32.7	− 17 51 45.0	+ 6.8	B.	
6	. . .	. . .	. . .	+ 0 26.5	26 10 33.4	30.0	+ 12 42 35.9	+ 4.1	B.	Faint.
7	. . .	. . .	. . .	− 2 43.7	62 32 23.7	1 56.9	− 23 40 41.3	+ 6.6	B.	
8	30.020	35.0	28.0	+ 2 0.8	25 7 8.7	28.6	+ 13 46 2.0	+ 4.2	B.	
9	. . .	. . .	. . .	+ 2 22.5	25 7 30.4	28.6	+ 13 45 40.2	+ 4.2	B.	
10	. . .	. . .	. . .	. .	. . . . .	. .	. . . . .	. .	B.	
11	. . .	. . .	. . .	. . .	. . . . .	. .	. . . . .	. .	F.	
12	30.294	41.6	33.9	− 0 38.8	32 44 27.6	39.1	+ 6 8 32.6	+ 2.6	F.	Very faint.
13	. . .	. . .	. . .	− 5 4.1	32 40 2.3	39.0	+ 6 12 57.9	+ 2.6	F.	
14	. . .	. . .	. . .	− 0 30.0	64 4 37.7	2 4.5	− 25 13 2.9	+ 11.5	F.	
15	. . .	. . .	. . .	− 1 8.0	64 3 59.7	2 4.5	− 25 12 25.0	+ 11.5	F.	
16	. . .	. . .	. . .	− 3 6.0	70 57 0.9	2 54.4	− 32 6 16.1	+ 13.2	F.	
17	. . .	. . .	. . .	+ 0 26.9	31 55 31.7	37.9	+ 6 57 29.7	+ 3.2	F.	
18	. . .	. . .	. . .	− 1 11.4	36 58 54.9	45.7	+ 1 53 58.6	+ 4.6	F.	
19	30.170	39.5	32.6	− 0 47.4	26 54 21.5	30.8	+ 11 58 47.0	+ 2.6	F.	
20	. . .	. . .	. . .	− 2 26.9	37 2 43.2	−46 29.8	+ 2 37 25.8	. .	F.	
21	. . .	. . .	. . .	− 2 5.2	35 43 5.3	43.7	+ 3 9 50.2	+ 5.0	F.	
22	. . .	. . .	. . .	− 4 29.2	63 5 42.3	1 59.5	− 24 14 2.6	+ 9.0	F.	
23	. . .	. . .	. . .	− 0 55.2	61 29 16.8	1 51.8	− 22 37 29.4	+ 7.4	F.	
24	. . .	. . .	. . .	− 0 38.8	23 49 34.9	26.1	+ 15 4 4.1	. .	F.	
25	30.152	41.5	30.4	− 1 30.4	23 48 43.3	26.0				
26	. . .	. . .	. . .	. .	. . . . .	. .	. . . . .	. .	F.	
27	. . .	. . .	. . .	− 2 3.7	24 13 5.6	26.2	+ 14 40 7.4	+ 3.5	F.	
28	. . .	. . .	. . .	− 1 14.7	25 48 51.2	28.2	+ 13 4 19.8	+ 3.8	F.	
29	29.600	44.0	42.5	− 3 20.8	19 36 45.7	20.8	+ 19 16 32.7	+ 3.3	F.	
30	. . .	. . .	. . .	− 0 16.7	68 24 52.2	2 26.6	− 29 33 39.6	+ 9.5	F.	
31	. . .	. . .	. . .	− 3 4.4	53 17 3.8	1 18.2	− 14 24 42.8	+ 7.2	F.	
32	. . .	. . .	. . .	− 1 40.2	28 28 31.0	−40 18.6	+ 11 5 26.8	. .	F.	
33	. . .	. . .	. . .	− 2 4.7	23 53 4.0	25.1	+ 14 59 44.7	. .	F.	
34	29.608	44.0	41.3	− 1 13.7	23 53 55.0	25.1				
35	30.005	44.8	34.8	− 3 46.9	66 26 23.2	2 17.1	− 27 35 1.0	+ 12.8	D.	
36	. . .	. . .	. . .	+ 0 31.6	35 40 40.8	43.1	+ 3 12 15.3	+ 3.9	D.	
37	. . .	. . .	. . .	+ 2 43.9	35 42 53.1	43.2	+ 3 10 2.9	+ 3.9	D.	
38	30.006	43.8	35.2	− 1 51.4	35 18 18.4	42.5	+ 3 34 38.3	+ 4.0	D.	
39	. . .	. . .	. . .	. .	. . . . .	. .	. . . . .	. .	D.	
40	30.312	38.5	33.8	+ 3 16.8	33 13 26.6	39.8	+ 5 39 32.8	+ 1.8	F.	Very faint.
41	. . .	. . .	. . .	. . .	. . . . .	. .	. . . . .	. .	F.	
42	. . .	. . .	. . .	+ 6 12.9	35 26 27.1	43.4	+ 3 26 28.8	+ 3.6	F.	
43	30.320	38.0	33.0	− 2 45.4	74 32 27.0	3 36.8	− 35 42 24.5	+ 15.8	F.	
44	. . .	. . .	. . .	− 3 23.2	30 11 44.5	35.6	+ 8 41 19.2	+ 3.4	F.	
45	. . .	. . .	. . .	+ 4 7.1	S. 33 44 15.2	40.6	+ 5 8 43.4	. .	F.	
46	. . .	. . .	. . .	+ 2 52.4	N. 49 41 56.8	1 11.9	+ 88 36 47.9	− 5.3	F	
47	30.325	37.0	32.4	− 1 40.0	S. 23 8 31.1	26.1	+ 15 44 42.1	+ 2.4	F.	
48	. . .	. . .	. . .	− 0 55.4	65 59 16.4	2 16.4	− 27 7 53.6	+ 12.0	F.	
49	. . .	. . .	. . .	− 0 57.1	61 24 15.1	1 51.7	− 22 32 27.6	+ 10.8	F.	
50	. . .	. . .	. . .	+ 2 50.4	77 48 3.0	4 36.5	− 38 59 0.2	+ 13.9	F.	
51	. . .	. . .	. . .	− 1 15.2	25 48 49.4	28.3	+ 13 4 21.6	+ 3.8	F.	
52	. . .	. . .	. . .	+ 1 42.2	61 21 50.6	1 51.7	− 22 30 3.0	+ 9.9	F.	
53	30.328	36.0	31.5	+ 5 33.5	70 0 45.6	2 46.9	− 31 9 53.2	+ 11.2	F.	
54	30.290	38.7	34.1	− 1 43.2	S. 60 48 26.2	1 48.5	− 21 56 35.5	+ 9.1	D.	
55	. . .	. . .	. . .	− 1 24.6	N. 14 46 12.6	16.1	+ 53 40 7.9	− 12.5	D.	Star preceding 23^s, same declination.
56	. . .	. . .	. . .	− 3 5.0	N. 18 57 54.9	21.0	+ 57 51 55.1	− 12.8	D.	
57	. . .	. . .	32.0	− 2 55.9	S. 77 27 13.4	4 28.6	− 38 38 2.8	+ 16.0	D.	Corr. −1″.70 applied to mean of A, B, C, D.
58	. . .	. . .	. . .	+ 3 51.3	47 24 0.2	1 6.4	− 8 31 27.4	+ 5.9	D.	
59	30.290	37.2	31.7	+ 0 17.5	47 20 26.4	1 6.2	− 8 27 53.4	+ 6.0	D.	
60	. . .	. . .	31.0	− 1 41.0	77 58 30.2	4 40.4	− 39 9 31.4	+ 16.7	D.	
61	. . .	. . .	. . .	. . .	. . . . .	. .	. . . . .	. .	D.	
62	. . .	. . .	. . .	+ 1 15.2	35 26 24.8	43.6	+ 3 26 30.8	+ 3.6	D.	
63	30.280	36.5	29.5	− 3 17.4	57 31 51.6	1 36.2	− 18 39 48.5	+ 10.8	D.	Blurred.
64	. . .	. . .	29.2	− 1 50.5	S. 35 18 18.7	43.4	+ 3 34 37.1	+ 4.2	D.	Hazy.

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
1869.						° ′ ″	″	″	″	″	″	″	r.	r.	r.
Nov. 25	1	Lacaille 169	. .	3	IV–VI.	349 0 4.8	13.8	11.0	18.1	10.9	0.3	9.82	30.948	+ 0.582	31.532
	2	Weisse O, 665	. .	3	III–VII.	314 20 4.0	11.0	7.2	14.0	11.9	2.8	8.48	31.846	. .	32.427
	3	α Sculptoris	. .	3	V, VI, VII.	348 55 3.0	13.0	9.9	18.2	10.0	1.0	9.18	29.972	. .	30.567
	4	η Ceti	. .	3	III–VII.	329 45 2.2	11.2	7.4	14.7	9.2	0.0	7.45	29.830	. .	30.414
	5	Neptune	. .	3	III–VII.	313 45 3.1	10.9	7.1	14.8	12.0	2.1	8.33	30.504	. .	31.085
	6	B. A. C. 494	. .	3	I–5.	232 35 2.1	10.0	10.9	19.2	10.4	6.0	9.77	25.087	. .	25.667
	7	ζ Ceti	. .	3	III–VII.	329 50 2.2	11.9	7.9	15.1	9.3	1.0	7.90	27.277	. .	27.861
	8	Lacaille 586, (1st *)	8.0	4	I, II, VIII, IX.	342 25 2.7	12.2	8.0	15.9	10.0	0.7	8.25	29.589	. .	30.188
	9	Lacaille 586, (2d *)	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	29.502	. .	30.085
	10	B. A. C. 723	7.0	3	III–VII.	345 25 2.1	11.1	7.8	15.1	8.0	59.6	7.28	29.041	. .	29.628
	11	75 Ceti	. .	3	III–VII.	320 30 1.0	9.2	5.3	12.0	8.0	58.1	5.60	30.587	. .	31.169
	12	B. A. C. 803	. .	3	IV–VI.	349 30 3.0	14.0	9.3	19.3	9.0	0.4	9.18	33.819	. .	34.403
	13	Anon. $2^h\ 38^m\ 19^s$	. .	3	IV, VI.	347 50 1.8	12.3	8.3	18.0	8.0	0.8	8.20	28.389	. .	28.973
	14	Jupiter, S. L.	. .	4	II, IV, VI, VIII.	304 10 3.0	10.0	7.0	14.0	11.0	2.0	7.83	30.781	. .	31.359
	15	Jupiter, N. L.	. .	5	I–IX.	" " "	"	"	"	"	"	"	29.206	. .	29.781
27	16	O. Arg. S. 21964	. .	3	III–VII.	340 55 3.0	8.1	6.0	11.8	8.8	1.4	6.52	33.810	+ 0.591	34.405
	17	Nadir	. .	.	. .	100 0 2.5	10.2	4.9	14.0	12.0	6.1	8.28	29.553	. .	. .
Dec. 1	18	Nadir	. .	.	. .	100 0 3.4	8.2	5.1	14.6	8.1	5.3	7.45	29.537	+ 0.701	. .
	19	O. Arg. S. 8	8.5	4	I, II, VIII, IX.	338 50 4.0	8.8	8.6	11.0	7.4	0.9	6.78	32.777	. .	33.492
	20	O. Arg. S. 9	8.5	3	IV–VI.	" " "	"	"	"	"	"	"	31.290	. .	31.992
	21	Weisse O, 305	. .	3	I, II, IX.	315 40 4.4	7.9	7.5	10.6	9.0	5.0	7.40	28.238	. .	28.931
	22	Weisse O, 308	. .	2	IV, VI.	" " "	"	"	"	"	"	"	23.941	. .	24.640
	23	(* 127) Washington	. .	3	IV–VI.	316 20 3.9	6.3	7.1	9.0	8.2	4.0	6.42	36.063	. .	36.764
	24	Anon. $0^h\ 35^m\ 25^s$	. .	3	I, III, V.	316 45 3.4	7.5	7.0	8.6	8.5	3.3	6.38	39.707	. .	40.394
	25	Anon. $0^h\ 35^m\ 26^s$	. .	1	IX.	" " "	"	"	"	"	"	"	29.290	. .	29.963
	26	Weisse II, 61	9.0	3	III, V, VI.	307 40 4.7	11.0	8.5	13.1	10.1	4.9	8.72	32.761	. .	33.455
	27	26 Arietis	. .	3	III–VII.	299 40 7.5	15.0	11.8	15.9	12.6	7.5	11.72	35.976	. .	36.674
	28	Jupiter, S. L.	. .	2	VII, VIII.	304 25 1.3	8.4	6.0	12.0	7.8	3.3	6.47	36.840	. .	37.547
	29	Jupiter, N. L.	. .	1	IX.	" " "	"	"	"	"	"	"	38.350	. .	39.013
3	30	Lacaille 9445	7.5	4	II, III, IV, V.	362 40 9.5	2.8	18.2	8.9	1.1	5.1	7.60	33.225	+ 0.720	33.946
	31	Anon. $23^h\ 13^m\ 41^s$	8.0	4	VI, VII, VIII, IX.	353 30 3.0	10.0	8.8	17.3	6.3	1.0	7.73	34.982	. .	35.736
	32	Nadir	. .	.	. .	100 0 3.7	12.6	6.3	17.2	9.1	6.1	9.17	29.572	. .	. .
	33	Weisse O, 88	. .	3	III, V, VI.	316 40 5.2	11.2	9.1	15.3	7.8	3.9	8.75	30.763	. .	31.481
	34	Lacaille 92	. .	3	III–VII.	351 25 4.6	12.2	11.2	17.2	7.8	2.1	9.18	31.827	. .	32.553
	35	(* 127) Washington	. .	3	IV–VI.	316 20 6.9	10.8	8.4	15.0	9.1	5.0	9.20	36.105	. .	36.825
	36	B. A. C. 161	. .	3	V, VII, IX.	316 30 7.0	11.0	10.6	16.1	11.2	4.9	10.13	34.141	. .	34.874
	37	Weisse O, 687	. .	3	V, VI, VII.	320 45 6.9	14.2	13.5	16.0	11.5	5.2	11.22	29.980	. .	30.707
	38	Anon. $0^h\ 56^m\ 50^s$	. .	3	III–VII.	342 45 0.7	8.3	7.8	11.9	4.2	57.5	5.07	30.265	. .	30.989
	39	O. Arg. S. 644	. .	3	III–VII.	347 14 59.2	67.8	67.7	72.5	63.8	57.8	64.80	26.541	. .	27.267
	40	Neptune	. .	3	IV–VI.	313 44 56.5	62.1	61.1	63.8	62.3	55.8	60.27	25.466	. .	26.186
	41	Weisse I, 582	9.0	3	V, VII, IX.	321 10 3.3	11.1	8.7	15.4	8.0	2.0	8.08	32.323	. .	33.057
	42	Anon. $1^h\ 39^m\ 49^s$	9.0	2	VIII, IX.	355 35 4.7	14.3	10.9	17.5	7.8	0.5	9.28	28.472	. .	29.236
	43	Weisse I, 831	9.0	3	III–VII.	320 55 5.9	13.5	12.3	18.3	11.5	3.8	10.88	34.942	. .	35.662
	44	Durchmusterung 217	9.0	3	IV–VI.	320 30 6.0	15.1	11.7	17.2	10.8	3.6	10.73	27.095	. .	27.815
	45	Anon. $1^h\ 57^m\ 40^s$	7.5	3	IV–VI.	337 0 5.0	13.9	11.9	17.6	8.8	2.9	10.02	28.522	. .	29.273
	46	Anon. $2^h\ 5^m\ 12^s$	9.0	3	III–VII.	315 5 3.5	12.0	9.2	16.1	10.0	3.9	9.12	24.116	. .	24.835
	47	O. Arg. N. 2680	9.0	2	V, VII.	256 50 3.0	13.7	12.3	21.9	8.9	6.0	10.97	33.185	. .	33.898
	48	Lacaille 744	. .	3	III–VII.	345 55 2.6	10.6	7.8	16.0	5.3	59.0	6.88	34.406	. .	35.131
	49	Lacaille 792	8.0	3	III–VII.	348 5 2.0	12.1	10.1	16.2	5.3	59.3	7.50	25.061	. .	25.786
	50	π Ceti	. .	3	III–VII.	333 20 4.5	13.2	11.4	18.5	8.7	0.8	9.52	35.276	. .	35.998
	51	Jupiter, S. L.	. .	4	I, III, VIII, IX	304 25 7.9	13.8	13.5	20.9	12.9	4.6	12.27	30.628	. .	31.340
	52	Jupiter, N. L.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	32.316	. .	33.035
	53	Anon. $2^h\ 58^m\ 14^s$	. .	2	V, VII.	305 5 3.6	12.2	9.1	18.3	9.0	3.0	9.20	25.516	. .	26.241
	54	17 Eridani	. .	3	V, VI, VII.	324 25 5.2	15.7	9.7	18.2	9.1	2.9	10.13	31.436	. .	32.164
	55	12 Tauri	. .	3	III–VII.	316 15 2.3	12.3	7.9	15.3	8.3	2.1	8.03	29.516	. .	30.236
	56	Rumker 940	9.0	3	V, VII, IX.	304 30 3.9	13.3	11.2	19.0	10.5	2.6	10.08	28.003	. .	28.730
	57	c Persei	. .	3	III–VII.	271 30 4.0	13.8	11.0	21.1	11.0	4.0	10.82	25.641	. .	26.351
	58	Anon. $4^h\ 5^m\ 59^s$	. .	2	V, VIII.	274 30 5.1	15.2	12.0	22.2	12.0	4.8	11.88	34.268	. .	34.983
	59	Lacaille 1433	. .	2	V, VII.	354 0 3.2	14.1	11.4	20.2	8.6	2.0	9.92	24.710	. .	25.442
7	60	Anon. $22^h\ 26^m\ 39^s$	7.0	3	III–VII.	351 40 2.8	11.9	7.1	17.8	8.0	3.0	8.43	31.645	+ 0.595	32.246
	61	O. Arg. S. 22508	. .	3	III–VII.	343 25 3.0	10.6	7.2	16.0	8.0	2.9	7.95	32.047	. .	32.646
	62	Anon. $22^h\ 57^m\ 55^s$	. .	3	V, VI, VIII.	323 5 1.7	7.9	5.4	12.7	7.2	1.0	5.98	30.636	. .	31.241
	63	Nadir	. .	.	. .	100 0 1.2	12.1	6.0	18.0	10.2	4.0	8.58	29.559	. .	. .
	64	O. Arg. S. 52	. .	3	IV–VI.	338 50 1.3	8.0	6.2	13.2	5.9	58.2	5.47	34.753	. .	35.349

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 0 48.0	S. 68 59 21.8	2 38.6	− 30 8 21.2	+ 14.3	D.	Faint.
2	. .	. .	. .	− 1 16.1	34 18 52.4	41.9	+ 4 34 4.9	+ 4.1	D.	
3	30.272	36.5	29.0	− 0 17.8	68 54 51.4	2 38.1	− 30 3 50.3	+ 14.1	D.	
4	. .	. .	. .	− 0 13.0	49 44 54.5	1 12.4	− 10 52 27.7	+ 8.7	D.	
5	. .	. .	29.0	− 0 34.0	S. 33 44 34.3	40.9	+ 5 8 24.1	. .	D.	
6	. .	. .	28.6	+ 2 15.2	N. 47 22 35.0	1 6.7	+ 86 17 21.0	− 4.2	D.	
7	. .	. .	. .	+ 1 7.0	S. 49 51 14.9	1 12.8	− 10 58 48.4	+ 8.6	D.	
8	. .	. .	. .	− 0 5.9	62 25 2.3	1 57.2	− 23 33 20.3	+ 11.3	D.	
9	30.270	35.7	28.3	− 0 2.7	62 25 5.6	1 57.3	− 23 33 23.6	+ 11.3	D.	
10	30.276	35.8	27.9	+ 0 11.6	65 25 18.9	2 13.8	− 26 33 53.5	+ 11.3	D.	
11	. .	. .	. .	− 0 36.6	40 29 29.0	52.5	− 1 36 42.3	+ 6.4	D.	
12	. .	. .	. .	− 2 18.0	69 27 51.2	2 43.1	− 30 36 55.0	+ 11.4	D.	
13	. .	. .	. .	+ 0 38.0	67 50 40.4	2 30.3	− 28 59 31.4	+ 10.8	D.	
14	. .	. .	. .	− 0 42.6	24 9 25.2	27.6	+ 14 43 21.7	. .	D.	
15	30.283	35.5	27.5	+ 0 6.8	24 10 14.7	27.6				
16	29.947	45.5	43.6	− 2 18.1	60 52 48.4	1 45.5	− 22 0 54.6	+ 9.3	D.	
17	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
18	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	F.	
19	. .	. .	. .	− 1 49.5	58 48 17.3	1 38.6	− 19 56 16.7	+ 12.0	F.	
20	30.080	45.0	37.9	− 1 2.4	58 49 4.4	1 38.7	− 19 57 2.8	+ 12.0	F.	
21	. .	. .	. .	+ 0 33.5	35 40 40.9	43.0	+ 3 12 15.3	+ 4.6	F.	
22	. .	. .	. .	+ 2 47.7	35 42 55.1	43.1	+ 3 10 1.0	+ 4.6	F.	
23	. .	. .	. .	− 3 32.2	36 16 34.2	44.0	+ 2 36 21.0	+ 4.9	F.	
24	. .	. .	. .	− 5 26.3	36 39 40.1	44.6	+ 2 13 14.5	+ 5.2	F.	
25	. .	. .	. .	+ 0 1.2	36 45 7.5	44.8	+ 2 7 46.9	+ 5.3	F.	
26	30.066	41.0	36.8	− 1 48.3	27 38 20.4	31.4	+ 11 14 47.4	+ 4.2	F.	
27	. .	. .	. .	− 3 29.4	19 36 42.4	21.4	+ 19 16 35.4	+ 3.0	F.	
28	. .	. .	. .	− 3 56.8	24 21 9.7	26.2	+ 14 32 26.4	. .	F.	
29	30.054	40.0	37.0	− 4 42.8	24 20 23.6	26.2				
30	. .	. .	. .	− 2 3.7	82 38 3.9	7 28.4	− 43 51 53.1	+ 18.8	F.	
31	30.264	37.0	27.8	− 2 59.9	73 27 7.8	3 24.3	− 34 36 52.9	+ 16.0	F.	
32	. .	. .	. .		. . . .	. .	. . . . .	. .	F.	
33	. .	. .	. .	− 0 46.4	36 39 22.3	45.8	+ 2 13 31.1	+ 4.7	F.	
34	. .	. .	. .	− 1 20.0	71 23 49.1	3 1.1	− 32 33 11.0	+ 16.3	F.	
35	. .	. .	. .	− 3 34.1	36 16 35.1	45.2	+ 2 36 18.9	+ 5.1	F.	
36	. .	. .	. .	− 2 32.8	36 27 37.3	45.5	+ 2 25 16.4	+ 5.2	F.	
37	. .	. .	. .	− 0 22.2	40 44 49.1	53.1	− 1 52 3.0	+ 6.7	F.	
38	. .	. .	. .	− 0 31.0	62 44 34.1	1 59.3	− 23 52 54.2	+ 13.6	F.	
39	. .	. .	. .	+ 1 25.5	67 16 30.3	2 26.5	− 28 25 17.6	+ 14.9	F.	
40	30.284	34.4	26.5	+ 1 59.3	33 46 59.6	41.1	+ 5 5 58.5	. .	F.	
41	. .	. .	. .	− 1 35.8	41 8 32.3	54.0	− 2 15 47.1	+ 7.4	F.	
42	. .	. .	. .	+ 0 23.9	75 35 33.2	3 56.8	− 36 45 50.8	+ 16.4	F.	
43	. .	. .	. .	− 2 57.6	40 52 13.3	53.5	− 1 59 27.6	+ 7.3	F.	
44	. .	. .	. .	+ 1 8.4	40 31 19.1	52.8	− 1 38 32.7	+ 7.3	F.	
45	. .	. .	. .	+ 0 22.8	57 0 32.8	1 35.1	− 18 8 28.7	+ 11.4	F.	
46	30.274	33.0	25.3	+ 2 41.6	S. 35 7 50.7	43.5	+ 3 45 5.0	+ 6.0	F.	
47	. .	. .	. .	− 2 2.2	N. 23 11 51.2	26.5	+ 52 5 57.0	− 2.4	F.	
48	. .	. .	. .	− 2 40.9	S. 65 52 26.0	2 17.4	− 27 1 4.2	+ 12.8	F.	
49	. .	. .	. .	+ 2 11.8	68 7 19.3	2 33.1	− 29 16 13.2	+ 13.0	F.	
50	. .	. .	. .	− 3 8.1	53 17 1.4	1 22.8	− 14 24 45.0	+ 9.7	F.	
51	. .	. .	. .	− 0 42.0	24 24 30.3	27.2	+ 14 29 8.2	. .	F.	
52	30.286	32.0	25.4	− 1 35.1	24 23 37.2	27.2				
53	. .	. .	. .	+ 1 57.6	25 7 6.8	29.0	+ 13 46 3.4	+ 4.5	F.	
54	. .	. .	. .	− 1 7.9	44 24 2.2	1 0.6	− 5 31 23.6	+ 7.2	F.	
55	. .	. .	. .	− 0 7.4	36 15 0.6	45.4	+ 2 37 53.2	+ 6.0	F.	
56	. .	. .	. .	+ 0 39.8	S. 24 30 49.9	28.2	+ 14 22 21.1	+ 4.7	F.	
57	. .	. .	. .	+ 1 54.2	N. 8 27 55.0	9.2	+ 47 21 43.4	+ 3.2	F.	
58	. .	. .	. .	− 2 36.2	N. 5 32 24.3	6.0	+ 44 25 42.5	+ 3.6	F.	
59	30.276	31.0	24.7	+ 2 22.6	S. 74 2 32.5	3 33.1	− 35 12 26.4	+ 7.9	F.	
60	30.266	37.7	31.0	− 1 10.4	71 48 58.1	3 4.4	− 32 58 23.3	+ 14.0	D.	
61	. .	. .	. .	− 1 22.9	63 23 45.0	2 1.6	− 24 32 7.4	+ 12.2	D.	
62	30.268	37.0	30.5	− 0 38.9	43 4 27.1	57.2	− 4 11 45.1	+ 5.3	D.	
63	. .	. .	. .	. .	. . . .	. .	. . . . .	. .	D.	
64	30.278	36.3	30.0	− 2 47.7	S. 58 47 17.8	1 40.9	− 19 55 19.5	+ 12.5	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Dec. 7	1	Lacaille 98 . . .	. .	3	VII, VIII, IX.	348 55 1.7	11.0	8.0	16.8	7.9	59.4	7.47	36.416	+ 0.595	37.048
	2	ε Andromedæ . . .	. .	3	IV–VI.	290 20 1.8	8.4	5.5	13.8	7.0	3.0	6.58	35.271	. .	35.864
9	3	Rumker 10641 . .	. .	2	V, VII.	326 5 1.0	6.2	2.0	9.8	7.1	0.8	4.48	30.440	+ 0.592	31.038
	4	Anon. $22^h 51^m 37^s$.	. .	4	I, II, VII, VIII.	280 15 0.0	8.3	3.4	12.9	9.9	4.1	6.43	35.721	. .	36.296
	5	Anon. $22^h 51^m 41^s$.	. .	3	IV–VI.	" " "	"	"	"	"	"	"	26.517	. .	26.606
	6	Anon. $22^h 58^m 22^s$.	9.3	2	IV, VIII.	280 39 59.7	68.2	63.7	72.3	68.9	63.0	65.97	27.574	. .	28.157
	7	Anon. $23^h 3^m 49^s$.	7.0	3	IV–VI.	" " "	"	"	"	"	"	"	28.119	. .	28.708
	8	Nadir	. .	.	. .	100 0 2.9	12.0	5.2	17.2	11.2	7.4	9.32	29.586	. .	. .
	9	Weisse O, 341 . .	8.5	3	III–VII.	312 30 3.0	7.2	5.9	10.8	9.8	1.8	6.42	28.198	. .	28.788
	10	Weisse O, 510 . .	8.0	3	III–VII.	311 35 3.8	10.0	5.7	13.2	10.2	3.6	7.75	30.240	. .	30.830
	11	Weisse O, 642 . .	7.5	3	III–VII.	333 0 3.2	11.0	7.0	15.8	10.9	2.2	8.35	29.540	. .	30.133
	12	Rumker N. F., 329 .	9.0	3	III–VII.	308 50 3.0	9.0	5.0	11.8	10.9	3.6	7.22	28.962	. .	29.551
	13	Anon. $0^h 48^m 53^s$.	10.0	2	VI, IX.	317 20 4.0	11.0	7.0	14.8	11.3	4.7	8.80	35.429	. .	36.037
	14	Neptune	7.5	5	I–IX.	313 50 4.7	11.5	7.8	15.3	14.1	6.1	9.92	32.880	. .	33.469
	15	Anon. $1^h 32^m 50^s$.	8.5	3	III–VII.	316 0 5.0	11.0	7.4	16.2	12.7	5.8	9.68	30.623	. .	31.213
	16	Anon. $1^h 39^m 53^s$.	9.0	3	IV–VI.	345 45 4.2	11.1	7.0	13.9	9.0	2.0	7.87	27.711	. .	28.304
	17	λ Arietis, (2d *) . .	8.0	3	III–VII.	295 55 4.2	11.1	6.9	15.0	13.0	4.9	9.18	29.211	. .	29.798
	18	O. Arg. S. 1256 . .	8.0	3	III–VII.	346 15 5.0	13.0	10.0	17.1	11.0	4.0	10.02	32.201	. .	32.797
	19	O. Arg. N. 2484 . .	9.0	3	V, VI, VII.	266 25 4.0	12.1	11.1	20.2	14.2	9.0	11.77	33.486	. .	34.076
	20	Anon. $2^h 11^m 42^s$.	7.0	3	V, VI, VII.	263 35 3.6	10.9	8.9	18.3	12.0	7.0	10.12	29.141	. .	29.729
	21	Lacaille 727 . . .	8.0	3	III–VII.	341 15 3.4	13.0	8.0	18.8	11.0	2.1	9.38	28.295	. .	28.890
	22	B. A. C. 773 . . .	7.0	3	III–VII.	342 10 2.2	10.7	7.0	14.8	9.1	0.9	7.45	34.092	. .	34.687
	23	Anon. $2^h 30^m 27^s$.	8.5	3	III–VII.	293 15 2.0	9.0	5.9	14.0	9.1	2.5	7.08	29.648	. .	30.234
	24	Jupiter, S. L. . .	. .	5	I–IX.	304 35 1.2	8.1	5.0	12.8	9.0	1.9	6.33	32.881	. .	33.466
	25	Jupiter, N. L. . .	. .	4	II, IV, VI, VIII.	" " "	"	"	"	"	"	"	34.365	. .	34.952
	26	Anon. $2^h 47^m 55^s$.	. .	3	III–VII.	293 15 2.0	9.0	6.2	15.0	9.8	2.4	7.40	29.628	. .	30.214
	27	Anon. $2^h 58^m 25^s$.	. .	3	III–VII.	342 30 1.8	11.1	7.2	14.7	9.0	1.0	7.47	27.763	. .	28.358
10	28	Anon. $22^h 56^m 19^s$.	7.0	3	III–VII.	360 29 59.8	68.1	66.4	75.0	65.3	61.0	65.93	30.911	+ 0.698	31.617
	29	Moon, S. L. . . .	. .	3	III–VII.	327 45 4.7	12.0	9.0	14.3	10.7	4.1	9.13	26.898	. .	27.598
	30	Nadir	. .	.		100 0 3.8	12.4	7.7	16.6	12.0	8.9	10.23	29.629	. .	. .
	31	Anon. $0^h 42^m 18^s$.	. .	3	V, VII, IX.	343 45 0.3	9.5	5.5	12.6	7.9	3.2	6.50	33.382	. .	34.103
	32	Neptune	. .	3	III–VII.	313 50 1.2	8.1	5.5	11.5	10.1	3.9	6.72	32.293	. .	32.990
	33	Jupiter, S. L. . .	. .	1	VIII.	304 35 1.6	7.1	5.2	12.3	8.5	2.6	6.22	30.072	. .	30.782
	34	Jupiter, N. L. . .	. .	1	IX.	" " "	"	"	"	"	"	"	31.781	. .	32.493
	35	ψ Tauri	6.5	3	III–VII.	290 15 4.1	11.2	5.7	15.0	11.0	4.5	8.58	30.227	. .	30.920
	36	Lacaille 1389. . .	. .	3	IV–VI.	351 15 4.6	15.0	11.2	16.9	11.8	4.8	11.88	33.323	. .	34.023
	37	O. Arg. S. 2997 . .	. .	3	V, VII, IX.	348 0 6.8	17.2	13.8	20.2	13.1	8.6	13.28	34.657	. .	35.356
23	38	Weisse O, 110 . .	. .	3	III–VII.	316 5 2.3	7.8	4.9	14.1	8.0	2.0	6.52	23.743	+ 0.535	24.279
	39	Anon. $0^h 21^m 59^s$.	8.0	3	IV–VI.	355 20 2.4	12.0	7.7	17.4	6.5	0.6	7.78	36.589	. .	37.127
	40	Anon. $0^h 22^m 54^s$.	8.0	3	IV–VI.	" " "	"	"	"	"	"	"	36.082	. .	36.620
	41	Weisse O, 506 . .	10.0	1	VII.	314 30 2.0	8.4	5.0	12.8	7.9	1.9	6.33	21.862	. .	22.411
	42	Lacaille 219 . . .	7.0	3	IV–VI.	348 55 2.0	11.9	8.0	17.1	7.0	0.1	7.68	30.534	. .	31.072
	43	Weisse O, 804 . .	9.0	3	IV–VI.	313 35 2.1	9.0	6.0	12.9	9.0	1.2	6.70	27.327	. .	27.863
	44	Neptune	. .	5	I–IX.	313 50 3.0	10.9	6.4	15.1	11.1	4.7	8.53	30.334	. .	30.867
	45	O. Arg. S. 704 . .	8.0	3	III–VII.	343 50 2.9	11.0	7.0	16.2	7.3	0.8	7.53	27.292	. .	27.832
	46	Anon. $1^h 34^m 1^s$ . .	9.0	2	III, VI.	315 50 3.0	9.2	5.9	14.0	8.0	2.6	7.12	33.231	. .	33.764
	47	Weisse I, 601. . .	8.0	3	VI, VII, VIII.	" " "	"	"	"	"	"	"	29.815	. .	30.363
	48	Weisse I, 800 . .	7.0	3	III–VII.	331 50 3.0	11.2	7.0	15.1	8.0	1.0	7.55	27.689	. .	28.227
	49	λ Arietis, (2d *) . .	. .	3	III–VII.	295 55 2.8	10.8	6.0	15.2	9.9	3.0	7.95	29.219	. .	29.751
	50	Anon. $1^h 57^m 4^s$ . .	. .	3	IV–VI.	309 20 2.8	11.0	7.0	14.9	9.1	3.0	7.97	20.838	. .	21.374
	51	Weisse II, 51 . .	. .	3	V, VI, VII.	314 55 3.6	10.8	5.7	15.0	9.0	2.8	7.82	31.013	. .	31.556
	52	Nadir	. .	.	. .	100 0 4.0	15.0	9.0	22.1	11.8	7.0	11.48	29.712	. .	. .
	53	Jupiter, N. L. . .	. .	5	I–IX.	304 45 4.7	12.2	7.0	18.8	11.0	5.0	9.78	29.079	. .	29.609
	54	Jupiter, S. L. . .	. .	4	II, IV, VI, VIII.	" " "	"	"	"	"	"	"	27.483	. .	28.015
	55	Lalande 5358 . .	8.0	3	V, VI, VII.	321 5 4.8	14.0	10.4	18.0	11.0	4.7	10.48	33.088	. .	33.631
	56	Lacaille 1010. . .	. .	3	III–VII.	346 55 4.9	13.1	11.0	19.9	9.0	2.9	10.13	29.346	. .	29.887
	57	Weisse II, 228 . .	. .	3	IV, V, VII.	322 25 5.0	12.9	9.8	17.8	10.8	2.8	9.85	35.026	. .	35.564
	58	Lacaille 1196. . .	. .	3	III–VII.	350 15 5.0	15.0	11.8	22.5	11.0	3.8	11.52	26.007	. .	26.549
28	59	Nadir	. .	.	. .	100 0 5.0	12.0	7.1	15.0	12.0	9.2	10.05	29.716	+ 0.485	. .
	60	Anon. $0^h 21^m 59^s$.	9.0	3	IV–VI.	355 15 4.8	11.0	8.3	14.8	9.0	4.8	8.78	26.684	. .	27.171
	61	Anon. $0^h 22^m 54^s$.	8.5	3	IV–VI.	" " "	"	"	"	"	"	"	26.256	. .	26.743
	62	B. A. C. 138, (2d *) .	9.3	3	III–VII.	324 10 4.9	9.0	7.0	13.7	10.6	6.1	8.55	32.766	. .	33.252
	63	Anon. $0^h 33^m 21^s$.	8.5	3	III–VII.	344 40 4.2	8.0	6.0	12.2	8.9	4.2	7.25	36.460	. .	36.950
	64	Weisse O, 687 . .	8.5	3	III–VII.	320 45 4.2	8.9	7.0	11.7	10.0	5.1	7.82	29.981	. .	30.466
	65	Lacaille 241, (2d *) .	10.0	2	V, IX.	344 20 4.0	8.0	6.0	11.6	9.0	3.9	7.08	28.018	. .	28.528

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 3 41.1	S. 68 51 26.4	2 37.3	− 30 0 24.5	+ 15.9	D.	
2	30.281	35.7	30.0	− 3 3.9	10 17 2.7	11.1	+ 28 36 25.4	− 2.7	D.	
3	. .	. .	. .	− 0 32.5	46 5 32.0	1 3.7	− 7 12 56.5	+ 6.1	D.	
4	. .	. .	. .	− 3 17.5	0 11 49.0	0.2	+ 38 41 50.0	− 8.5	D.	
5	. .	. .	. .	+ 1 46.2	0 16 52.6	0.3	+ 38 36 46.3	− 8.4	D.	
6	. .	. .	. .	+ 0 57.7	0 40 3.6	0.7	+ 38 13 34.9	− 8.2	D.	
7	30.585	39.5	33.0	+ 0 40.5	0 39 46.4	0.7	+ 38 13 52.1	− 8.2	D.	
8	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	D.	
9	30.600	38.3	31.5	+ 0 37.9	32 30 44.4	39.4	+ 6 22 15.4	+ 3.9	D.	
10	. .	. .	. .	− 0 26.0	31 34 41.8	38.0	+ 7 18 19.4	+ 3.8	D.	
11	. .	. .	. .	− 0 4.2	53 0 4.2	1 21.9	− 14 7 46.9	+ 11.1	D.	
12	. .	. .	. .	+ 0 14.1	28 50 21.3	34.0	+ 10 2 43.9	+ 3.2	D.	
13	. .	. .	. .	− 3 9.3	37 16 59.5	47.0	+ 1 35 52.7	+ 6.0	D.	
14	30.595	37.5	30.7	− 1 48.8	33 48 21.2	41.2	+ 5 4 36.8	. .	D.	
15	. .	. .	29.8	− 0 38.0	35 59 31.7	45.0	+ 2 53 22.5	+ 6.2	D.	
16	. .	. .	. .	+ 0 53.1	65 46 1.0	2 16.9	− 26 54 38.7	+ 14.6	D.	
17	. .	. .	. .	+ 0 6.3	15 55 15.5	17.7	+ 22 58 6.0	− 0.3	D.	Follows λ Arietis (1st *) 2ˢ; star preceding 20ˢ; star following 30ˢ.
18	30.586	35.7	29.0	− 1 27.7	S. 66 13 42.3	2 20.1	− 27 22 23.2	+ 14.6	D.	
19	. .	. .	. .	− 2 7.8	N. 13 36 56.0	15.0	+ 52 30 50.2	− 4.1	D.	
20	. .	. .	. .	+ 0 8.4	N. 16 24 41.4	18.3	+ 55 18 39.0	− 4.1	D.	
21	. .	. .	. .	+ 0 34.7	S. 61 15 44.1	1 52.9	− 22 23 57.8	+ 12.8	D.	
22	. .	. .	28.2	− 2 26.9	62 7 40.5	1 56.9	− 23 15 58.2	+ 12.9	D.	
23	. .	. .	. .	− 0 7.3	13 14 59.7	14.6	+ 25 38 24.9	+ 1.6	D.	
24	. .	. .	. .	− 1 48.7	24 33 17.7	27.6 }	+ 14 20 17.2	. .	D.	
25	. .	. .	. .	− 2 35.2	24 32 31.1	27.6 }				
26	. .	. .	. .	− 0 6.7	13 15 0.7	14.6	+ 25 38 23.9	+ 2.0	D.	
27	30.582	33.3	27.5	+ 0 51.4	62 30 58.9	1 59.1	− 23 39 18.8	+ 12.2	D.	
28	30.330	38.5	34.6	− 0 50.7	80 19 15.3	5 34.1	− 41 31 10.2	+ 17.9	F.	
29	. .	. .	. .	+ 1 15.2	47 46 24.3	−53 52.9	− 7 58 52.2	. .	F.	
30	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	F.	
31	30.316	37.5	32.3	− 2 8.6	63 42 57.9	2 3.1	− 24 51 21.8	+ 14.7	F.	
32	. .	. .	. .	− 1 33.7	33 48 33.0	40.7	+ 5 4 25.5	. .	F.	
33	30.270	37.0	32.2	− 0 24.5	24 34 41.7	27.1 }	+ 14 18 57.2	. .	F.	
34	. .	. .	. .	− 1 18.1	24 33 48.1	27.1 }				
35	. .	. .	. .	− 0 28.8	10 14 39.8	11.0	+ 28 38 48.4	+ 3.2	F.	
36	. .	. .	. .	− 2 6.1	71 13 5.8	2 57.8	− 32 22 24.4	+ 9.9	F.	
37	30.250	36.5	31.6	− 2 47.9	67 57 25.4	2 29.4	− 29 6 15.9	+ 9.4	F.	
38	30.318	35.2	30.7	+ 2 58.9	36 8 5.5	44.7	+ 2 44 49.1	+ 5.9	D.	
39	. .	. .	. .	− 3 43.6	75 16 24.2	3 49.7	− 36 26 34.6	+ 19.2	D.	
40	30.317	. .	30.4	− 3 27.7	75 16 40.1	3 49.2	− 36 26 50.0	+ 19.2	D.	
41	. .	. .	. .	+ 3 57.2	34 34 3.6	42.3	+ 4 18 53.4	+ 5.7	D.	
42	. .	. .	29.9	− 0 33.6	68 54 34.1	2 38.1	− 30 3 33.0	+ 17.6	D.	
43	. .	. .	. .	+ 1 6.9	33 36 13.6	40.8	+ 5 16 44.9	+ 5.7	D.	
44	. .	. .	. .	− 0 27.2	33 49 41.4	42.1	+ 5 3 15.7	. .	D.	
45	30.337	34.5	28.2	+ 1 7.9	63 51 15.4	2 5.0	− 24 59 41.2	+ 16.2	D.	
46	. .	. .	28.4	− 1 58.0	35 48 9.1	44.4	+ 3 4 45.7	+ 7.1	D.	
47	. .	. .	. .	− 0 11.4	35 49 55.8	44.5	+ 3 2 58.9	+ 7.1	D.	
48	. .	. .	. .	+ 0 55.5	51 51 3.0	1 18.4	− 12 58 42.2	+ 12.4	D.	
49	. .	. .	. .	+ 0 7.8	15 55 15.7	17.6	+ 22 58 5.9	+ 1.1	D.	
50	. .	. .	. .	+ 4 29.6	29 24 37.6	34.8	+ 9 28 26.8	+ 5.3	D.	
51	. .	. .	. .	− 0 48.8	34 54 19.1	43.1	+ 3 58 37.0	+ 7.1	D.	
52	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	D.	
53	. .	. .	. .	+ 0 12.2	24 45 22.0	27.7 }	+ 14 7 24.4	. .	D.	
54	30.372	34.5	27.1	+ 1 2.1	24 46 11.9	27.7 }				Very badly blurred and unsteady.
55	. .	. .	. .	− 1 53.8	41 3 16.6	53.9	− 2 10 31.3	+ 9.0	D.	
56	30.370	34.3	26.8	+ 0 3.5	66 55 13.7	2 24.4	− 28 3 58.9	+ 15.2	D.	
57	. .	. .	. .	− 2 54.6	42 22 15.3	56.4	− 3 29 32.5	+ 9.2	D.	
58	30.380	34.0	26.2	+ 1 48.0	70 16 59.5	2 51.5	− 31 26 11.8	+ 14.6	D.	
59	. .	. .	. .	. .	. . . . .	. .	. . . . .	. .	D.	
60	. .	. .	. .	+ 1 28.5	75 16 37.3	3 40.2	− 36 26 38.3	+ 19.6	D.	
61	29.824	46.5	44.3	+ 1 41.9	75 16 50.7	3 39.9	− 36 26 51.4	+ 19.6	D.	
62	. .	. .	. .	− 1 41.9	44 8 26.6	57.1	− 5 15 44.5	+ 9.6	D.	
63	. .	. .	. .	− 3 38.0	64 36 29.2	2 3.5	− 25 44 53.5	+ 16.6	D.	
64	. .	. .	41.2	− 0 14.6	40 44 53.2	50.8	− 1 52 4.8	+ 8.6	D.	
65	. .	. .	. .	+ 0 46.1	S. 64 20 53.2	2 2.3	− 25 29 16.3	+ 16.7	D.	

DATE.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES. A.	B.	C.	D.	E.	F.	Mean.	MICROMETER. Observed.	Nadir cor.	Corr'd.
						° ′ ″	″	″	″	″	″	″	r.	r.	r.
1869. Dec. 28	1	Neptune	. .	5	III–VII.	313 50 3.9	7.2	5.9	11.6	12.0	5.0	7.60	30.504	+ 0.485	30.989
	2	Anon. $1^h 27^m 11^s$.	10.0	1	V.	321 20 3.4	8.3	7.7	12.0	10.1	5.0	7.75	31.084	. .	31.569
	3	Anon. $1^h 32^m 50^s$.	8.0	3	III, IV, V.	316 0 3.2	7.0	5.0	11.8	9.2	5.1	6.88	30.509	. .	30.987
	4	Anon. $1^h 33^m 54^s$.	9.0	2	VI, VII.	315 50 4.7	8.0	5.8	12.1	10.4	6.9	7.98	33.226	. .	33.721
	5	Weisse I, 601 . .	8.0	2	VIII, IX.	" " "	"	"	"	"	"	"	29.780	. .	30.267
	6	Weisse I, 800 . .	8.0	3	V, VI, VII.	331 50 4.8	9.6	7.1	13.1	10.0	5.0	8.27	27.579	. .	28.072
	7	O. Arg. S. 1219 . .	8.0	3	III–VII.	342 55 3.1	9.0	6.8	12.1	9.1	3.0	7.18	27.401	. .	27.890
	8	Weisse I, 1047 . .	9.5	2	V, VII.	304 50 3.0	6.2	4.8	13.0	10.0	5.9	7.15	27.745	. .	28.235
	9	Weisse II, 56 . .	9.0	3	III–VII.	307 35 2.5	7.8	4.6	11.1	8.9	4.9	6.63	25.882	. .	26.365
	10	O. Arg. S. 1554 . .	8.0	3	III, IV, V.	343 20 1.9	7.8	5.0	12.0	7.0	2.6	6.05	33.977	. .	34.458
	11	O. Arg. S. 1558 . .	8.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	29.606	. .	30.101
	12	Lacaille 756 . . .	7.7	3	IV–VI.	343 35 1.0	6.0	3.3	11.4	6.8	2.0	5.08	33.283	. .	33.769
	13	O. Arg. S. 1738 . .	. .	3	III, IV, V.	" " "	"	"	"	"	"	"	32.286	. .	32.767
	14	Jupiter, S. L. . .	. .	5	I–IX.	304 50 1.7	4.9	3.1	12.0	8.3	3.0	5.50	33.742	. .	34.221
	15	Jupiter, N. L. . .	. .	4	II, IV, VI, VIII.	" " "	"	"	"	"	"	"	35.195	. .	35.676
	16	Anon. $2^h 47^m 54^s$.	9.0	3	III–VII.	293 15 1.3	6.0	4.9	12.2	9.0	3.3	6.12	29.690	. .	30.170
	17	Anon. $3^h 7^m 47^s$ . .	9.5	3	III–VII.	306 15 1.8	6.8	2.8	11.1	7.2	2.9	5.43	31.942	. .	32.425
	18	Weisse III, 224 . .	8.3	3	III–VII.	310 20 1.7	8.0	4.2	9.8	8.6	3.1	5.90	30.974	. .	31.458
	19	Anon. $3^h 22^m 32^s$.	9.0	3	III, IV, V.	313 25 2.0	8.0	4.7	12.0	10.1	3.3	6.68	24.998	. .	25.475
	20	Anon. $3^h 22^m 42^s$.	8.5	3	V, VI, VII.	" " "	"	"	"	"	"	"	30.343	. .	30.834
	21	Weisse (2) III, 750 .	. .	5	I–IX.	280 55 2.0	10.6	6.8	14.5	11.0	6.4	8.55	27.645	. .	28.110
	22	Weisse (2) III, 751 .	. .	3	IV, VI, VIII.	" " "	"	"	"	"	"	"	27.677	. .	28.152
	23	Weisse (2) III, 881 .	8.0	3	IV–VI.	292 45 1.9	7.9	3.6	12.0	9.1	5.0	6.58	34.868	. .	35.352
	24	B. A. C. 1205 . .	6.7	3	V, VII, IX.	320 25 1.8	7.0	4.9	10.8	7.0	2.7	5.70	29.005	. .	29.503
29	25	Weisse O, 989 . .	. .	3	III–VII.	304 25 3.7	7.4	6.1	12.0	8.0	5.0	7.03	36.389	+ 0.606	36.993
	26	Neptune	. .	3	III–VII.	313 50 5.2	9.1	7.1	15.2	10.0	5.6	8.70	30.617	. .	31.222
	27	Anon. $1^h 27^m 14^s$.	. .	2	III–VII.	321 25 6.5	11.9	10.2	16.5	10.0	6.9	10.33	39.962	. .	40.569
	28	B. A. C. 503 . . .	6.0	3	III–VII.	356 0 6.6	14.1	11.5	20.0	9.3	6.0	11.25	27.480	. .	28.093
	29	Anon. $1^h 42^m 1^s$ . .	10.0	1	III.	305 15 1.2	5.4	2.7	10.0	4.5	2.3	4.35	30.636	. .	31.225
	30	α Piscium	. .	3	III–VII.	316 45 2.3	6.4	5.1	9.6	6.9	2.9	5.53	29.739	. .	30.345
	31	O. Arg. S. 1384 . .	7.5	3	III–VII.	337 15 2.8	8.1	6.0	12.0	4.8	2.0	5.95	33.962	. .	34.571
	32	B. A. C. 723 . . .	. .	3	III–VII.	345 25 2.5	7.3	5.9	11.1	5.5	59.9	5.37	28.737	. .	29.348
	33	Weisse II, 379 . .	9.0	3	III–VII.	306 5 2.8	7.5	4.1	12.0	7.0	4.3	6.28	35.303	. .	35.907
	34	Jupiter, S. L. . .	. .	4	I, II, VIII, IX.	304 50 4.0	7.6	5.2	13.5	8.6	4.0	7.15	33.420	. .	34.016
	35	Jupiter, N. L. . .	. .	3	IV–VI.	" " "	"	"	"	"	"	"	34.901	. .	35.506
	36	η Eridani	6.0	3	III–VII.	328 20 3.5	10.2	7.6	12.8	6.9	3.0	7.33	34.038	. .	34.646
	37	12 Eridani	. .	3	III–VII.	348 20 4.7	11.7	9.7	18.3	6.2	4.2	9.13	26.891	. .	27.502
	38	Anon. $3^h 14^m 33^s$.	9.5	3	III–VII.	310 0 5.8	11.3	8.0	14.3	9.4	6.1	9.15	30.464	. .	31.068
	39	Anon. $3^h 24^m 16^s$.	9.5	2	VIII, IX.	311 45 6.3	11.2	8.8	4.7	10.2	6.0	7.87	24.088	. .	24.689
	40	12 Tauri	. .	3	III–VII.	316 15 5.6	9.5	7.5	13.0	9.7	6.1	8.57	29.511	. .	30.117
	41	O. Arg. S. 2504 . .	. .	3	V, VI, VII.	342 40 5.9	10.7	9.8	5.2	8.1	3.4	7.18	30.993	. .	31.600
	42	ψ Tauri	. .	3	III–VII.	290 15 6.7	12.7	6.9	18.0	10.3	7.7	10.38	30.432	. .	31.033
	43	Weisse 114 . . .	. .	3	III–VII.	329 35 8.2	13.2	12.6	17.6	11.0	7.0	11.60	28.201	. .	28.809
	44	Lacaille 1416. . .	8.0	3	III–VII.	353 15 2.1	9.0	4.5	14.8	4.5	1.0	5.98	25.995	. .	26.608
	45	Anon. $4^h 23^m 19^s$.	10.0	2	VI, VII.	289 50 2.0	9.5	5.9	15.0	7.7	2.9	7.17	25.800	. .	26.412
	46	Weisse IV, 729 . .	. .	2	VI, VII.	326 55 1.1	9.2	5.3	12.2	7.1	0.5	5.90	28.342	. .	28.960
	47	Anon. $4^h 41^m 52^s$.	. .	3	III–VII.	348 30 2.0	9.3	7.4	16.1	4.7	1.0	6.75	29.992	. .	30.603
	48	π^6 Orionis	. .	3	IV–VI.	317 25 1.6	7.7	3.5	12.0	4.4	2.0	5.20	34.813	. .	35.419
	49	*l* Tauri	. .	3	IV–VI.	298 40 2.5	9.1	5.5	13.2	7.0	2.9	6.70	32.055	. .	32.660
	50	Anon. $5^h 10^m 10^s$.	. .	3	IV–VI.	288 40 2.0	9.2	6.0	14.5	8.0	1.4	6.85	30.596	. .	31.200
	51	119 Tauri	. .	2	V, VII.	300 25 2.8	9.0	5.2	14.3	7.0	3.2	6.92	32.182	. .	32.793
	52	120 Tauri	. .	3	VII, VIII, IX.	" " "	"	"	"	"	"	"	26.390	. .	27.006
	53	Lacaille 1913. . .	. .	3	IV–VI.	345 40 3.8	9.3	8.8	13.2	5.5	0.9	6.92	30.739	. .	31.347
	54	Anon. $5^h 41^m 58^s$.	9.5	3	IV–VI.	293 5 3.5	9.9	5.6	17.0	8.4	3.0	7.90	28.828	. .	29.433
	55	Nadir	. .	.	. . .	100 0 3.1	11.8	9.3	19.5	11.1	7.4	10.37	29.725	. .	. .
30	56	Nadir	. .	.	. .	100 0 2.2	6.9	3.6	12.6	8.7	5.9	6.65	29.587	+ 0.505	. .
	57	Lalande 658 . . .	8.0	3	III–VII.	323 35 2.5	6.9	4.2	10.0	8.2	4.0	5.97	26.179	. .	26.685
	58	B. A. C. 138, (2d *) .	9.0	3	III–VII.	324 10 2.5	6.0	3.8	9.9	8.0	4.1	5.72	32.694	. .	33.200
	59	Anon. $0^h 33^m 38^s$.	9.0	3	III–VII.	337 10 2.8	7.8	5.0	9.4	7.1	2.2	5.72	28.274	. .	28.782
	60	O. Arg. S. 443 . .	8.0	3	III, IV, V.	343 0 2.8	7.0	4.3	10.0	8.0	2.0	5.68	40.647	. .	41.148
	61	Lacaille 224 . . .	7.0	3	V, VI, VII.	" " "	"	"	"	"	"	"	36.877	. .	37.392
	62	Weisse O, 989 . .	8.0	3	III–VII.	304 20 2.0	5.0	4.0	14.0	9.3	4.1	5.73	26.806	. .	27.309
	63	Neptune	. .	5	I–IX.	313 50 2.0	5.8	4.0	9.9	10.0	4.9	6.10	30.720	. .	31.223
	64	Weisse I, 76 . . .	8.0	3	III–VII.	308 45 2.1	7.1	4.9	9.2	9.9	5.0	6.37	28.258	. .	28.761
	65	Anon. $1^h 27^m 15^s$.	10.0	3	V, VII, IX.	321 20 2.0	7.7	6.0	10.8	9.1	4.0	6.60	30.575	. .	31.094
	66	Weisse I, 557 . .	9.0	3	IV–VI.	304 20 4.0	6.1	5.1	11.9	11.0	5.1	7.18	35.084	. .	35.588

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	29.830	46.0	40.3	− 0 31.0	S. 33 49 36.6	39.4	+ 5 3 23.2	. .	D.	Polaris on middle wire at $1^h\ 12^m\ 13^s$.
2	. .	. .	. .	− 0 49.2	41 19 18.6	51.9	− 2 26 31.3	+ 9.5	D.	Faint and uncertain.
3	. .	. .	. .	− 0 30.9	35 59 36.0	44.5	+ 2 53 18.7	+ 8.0	D.	
4	. .	. .	. .	− 1 56.7	35 48 11.3	42.6	+ 3 4 45.3	+ 7.6	D.	
5	29.840	45.3	40.0	− 0 8.4	35 49 59.6	42.7	+ 3 2 57.9	+ 7.7	D.	
6	. .	. .	. .	+ 1 0.3	51 51 8.6	1 15.2	− 12 58 44.6	+ 13.1	D.	
7	. .	. .	. .	+ 1 6.0	62 56 13.2	1 55.3	− 24 4 29.3	+ 16.5	D.	
8	. .	. .	. .	+ 0 55.2	24 51 2.4	27.4	+ 14 2 9.4	+ 4.3	D.	
9	29.842	45.0	39.5	+ 1 53.8	27 37 0.4	31.0	+ 11 16 7.8	+ 5.3	D.	
10	. .	. .	. .	− 2 19.8	63 17 46.3	1 57.2	− 24 26 4.3	+ 16.3	D.	
11	. .	. .	. .	− 0 3.2	63 20 2.9	1 57.4	− 24 28 21.1	+ 16.4	D.	
12	. .	. .	39.2	− 1 58.2	63 33 6.9	1 58.6	− 24 41 26.2	+ 16.3	D.	
13	. .	. .	. .	− 1 26.7	63 33 38.4	1 58.6	− 24 41 57.7	+ 16.1	D.	
14	. .	. .	. .	− 2 12.3	24 47 53.2	26.6	+ 14 5 42.4	. .	D.	
15	29.842	44.3	39.1	− 2 58.0	24 47 7.5	26.6				
16	. .	. .	. .	− 0 5.3	13 15 0.8	14.0	+ 25 38 24.5	+ 1.7	D.	
17	. .	. .	38.2	− 1 16.0	26 13 49.4	29.3	+ 12 39 20.6	+ 5.5	D.	
18	. .	. .	. .	− 0 45.7	30 19 20.2	34.7	+ 8 33 44.3	+ 6.6	D.	
19	. .	. .	. .	+ 2 21.6	33 27 28.2	39.2	+ 5 25 31.8	+ 7.5	D.	
20	. .	. .	. .	− 0 26.1	33 24 40.6	39.2	+ 5 28 19.5	+ 7.4	D.	
21	. .	. .	. .	+ 0 59.2	0 56 7.7	1.0	+ 37 57 30.6	0.0	D.	
22	. .	. .	. .	+ 0 57.8	0 56 6.4	1.0	+ 37 57 31.9	0.0	D.	
23	. .	. .	. .	− 2 47.8	12 42 18.8	13.4	+ 26 11 7.1	+ 2.6	D.	
24	29.840	43.0	38.0	+ 0 15.6	40 25 21.3	50.6	− 1 32 32.6	+ 9.0	D.	
25	. .	. .	. .	− 3 39.3	24 21 27.7	27.1	+ 14 31 44.4	+ 3.2	F.	
26	29.974	40.5	35.9	− 0 38.3	33 49 30.4	40.0	+ 5 3 28.8	. .	F.	
27	. .	. .	. .	− 5 31.8	41 19 38.5	52.8	− 2 26 52.0	+ 9.5	F.	Very faint.
28	. .	. .	. .	+ 0 59.7	76 1 10.9	3 57.0	− 37 11 28.7	+ 20.4	F.	
29	. .	. .	. .	− 0 38.4	25 14 26.0	28.3	+ 13 38 45.0	+ 4.2	F.	
30	29.965	39.5	34.4	− 0 10.8	36 44 54.7	44.9	+ 2 7 59.7	+ 8.2	F.	
31	. .	. .	. .	− 2 23.3	57 12 42.7	1 33.1	− 18 20 36.5	+ 14.8	F.	
32	. .	. .	. .	+ 0 20.4	65 25 25.8	2 10.9	− 26 33 57.4	+ 17.1	F.	
33	. .	. .	. .	− 3 5.2	26 2 1.0	29.4	+ 12 51 8.8	+ 5.0	F.	
34	. .	. .	. .	− 2 5.9	24 48 1.3	27.0	+ 14 5 34.3	. .	F.	
35	. .	. .	. .	− 2 52.6	24 47 14.5	27.0				
36	. .	. .	. .	− 2 25.7	48 17 41.7	1 ·7.6	− 9 25 10.0	+ 11.8	F.	
37	. .	. .	. .	+ 1 18.2	68 21 27.3	2 31.0	− 29 30 19.0	+ 16.7	F.	
38	29.960	37.5	32.5	− 0 33.5	29 59 35.7	34.8	+ 8 53 28.8	+ 6.6	F.	Faint.
39	. .	. .	. .	+ 2 46.1	31 47 54.0	37.4	+ 7 5 7.8	+ 7.1	F.	
40	. .	. .	. .	− 0 3.7	36 15 4.9	44.3	+ 2 37 50.1	+ 8.2	F.	
41	. .	. .	. .	− 0 50.1	62 39 17.1	1 56.4	− 23 47 34.2	+ 14.3	F.	
42	. .	. .	. .	− 0 32.4	10 14 38.0	10.9	+ 28 38 50.3	+ 2.5	F.	
43	. .	. .	. .	+ 0 37.3	49 35 48.9	1 11.0	− 10 43 20.6	+ 10.8	F.	[siderably in declination.
44	. .	. .	. .	+ 1 46.2	73 16 52.1	3 19.1	− 34 26 32.0	+ 14.8	F.	Larger star about 3^s, and north, differing con-
45	29.936	36.0	30.6	+ 1 52.3	9 51 59.4	10.5	+ 29 1 29.2	+ 2.9	F.	Extremely faint.
46	. .	. .	. .	+ 0 32.6	46 55 38.5	1 4.7	− 8 3 3.9	+ 9.5	F.	
47	. .	. .	. .	− 0 18.9	68 29 47.8	2 32.6	− 29 38 41.2	+ 12.5	F.	
48	. .	. .	. .	− 2 49.9	37 22 15.3	46.2	+ 1 30 37.7	+ 7.6	F.	
49	. .	. .	. .	− 1 23.4	18 38 43.3	20.4	+ 20 14 35.5	+ 4.8	F.	
50	. .	. .	. .	− 0 37.6	8 39 29.3	9.2	+ 30 14 0.8	+ 3.7	F.	
51	. .	. .	. .	− 1 27.5	20 23 39.4	22.5	+ 18 29 37.4	+ 5.3	F.	
52	. .	. .	. .	+ 1 33.7	20 26 40.6	22.6	+ 18 26 36.0	+ 5.2	F.	
53	. .	. .	. .	− 0 42.2	65 39 24.7	2 13.3	− 26 47 58.7	+ 9.2	F.	
54	29.932	34.0	29.6	+ 0 17.8	13 5 25.6	14.1	+ 25 47 59.5	+ 4.7	F.	
55	. .	. .	. .	. .	. . . .	. .	. . . .	. .	F.	
56	. .	. .	. .	. .	. . . .	. .	. . . .	. .	D.	Follows B. A. C. 138 1st 1^s.
57	29.940	46.7	43.0	+ 1 43.7	43 36 49.7	56.2	− 4 44 6.6	+ 9.4	D.	
58	. .	. .	. .	− 1 40.3	44 8 25.4	57.2	− 5 15 43.4	+ 9.7	D.	
59	. .	. .	. .	+ 0 38.1	57 10 43.8	1 31.3	− 18 18 34.9	+ 14.3	D.	
60	. .	. .	. .	− 5 50.0	62 54 15.6	1 55.0	− 24 2 31.4	+ 16.3	D.	
	. .	. .	41.9	− 3 51.9	62 56 13.8	1 55.2	− 24 4 29.7	+ 16.3	D.	
61										
62	. .	. .	. .	+ 1 24.2	24 21 30.0	26.8	+ 14 31 42.5	− 2.2	D.	
63	. .	. .	. .	− 0 38.3	33 49 27.8	39.5	+ 5 3 32.0	. .	D.	
64	29.950	46.0	41.8	+ 0 38.8	28 45 45.2	32.5	+ 10 7 21.6	+ 4.9	D.	
65	. .	. .	. .	− 0 34.3	41 19 32.3	52.0	− 2 26 45.1	+ 9.6	D.	
66	. .	. .	. .	− 2 55.6	S. 24 17 11.6	26.8	+ 14 36 0.9	+ 3.8	D.	

Date.	Number.	OBJECT.	Magnitude.	No. of mic. readings.	Transit wires	MICROSCOPES.									MICROMETER.		
						A.			B.	C.	D.	E.	F.	Mean.	Observed.	Nadir cor.	Corr'd.
1869.						°	′	″	″	″	″	″	″	″	r.	r.	r.
Dec. 30	1	Weisse I, 558 . .	9.0	4	II, III, VII, VIII.	304	20	4.0	6.1	5.1	11.9	11.0	5.1	7.18	34.579	+ 0.505	35.078
	2	Anon. $1^h\ 42^m\ 39^s$.	10.0	2	VI, IX.	305	15	3.9	7.2	4.0	11.9	10.0	5.0	7.00	31.240	. .	31.756
	3	O. Arg. S. 1266 . .	8.0	3	IV–VI.	344	40	3.1	8.0	5.3	11.4	8.0	3.2	6.50	35.358	. .	35.864
	4	Weisse I, 1047 . .	9.0	3	IV–VI.	304	50	3.7	6.9	4.3	11.9	10.0	4.3	6.85	27.685	. .	28.189
	5	Weisse II, 56 . .	9.0	3	III–VII.	307	35	3.8	8.1	5.0	10.6	10.0	5.0	7.08	26.894	. .	26.397
	6	O. Arg. S. 1404 . .	8.7	3	IV–VI.	348	30	3.0	10.0	7.0	13.9	8.9	3.2	7.67	36.952	. .	37.459
	7	Weisse II, 397 . .	7.7	3	IV, V, VIII.	317	10	3.0	6.1	4.8	8.0	10.0	2.7	5.77	26.758	. .	27.267
	8	B. A. C. 776 . . .	6.5	3	V, VI, IX.	"	"	"	"	"	"	"	"	"	26.518	. .	27.032
	9	Anon. $2^h\ 34^m\ 18^s$.	7.0	3	IV–VI.	353	10	2.7	9.9	6.2	14.9	9.0	3.8	7.75	38.829	. .	39.336
	10	Jupiter, N. L. . .	. .	5	I–IX.	304	50	3.5	6.2	4.5	12.1	10.0	5.0	6.88	34.760	. .	35.259
	11	Jupiter, S. L. . .	. .	4	I, IV, VI, VIII.	"	"	"	"	"	"	"	"	"	33.323	. .	33.824
	12	Weisse II, 881 . .	8.0	2	I, III	304	15	3.9	8.0	5.2	13.0	12.0	5.9	8.00	29.198	. .	29.675
	13	Anon. $2^h\ 52^m\ 2^s$ . .	9.9	2	III–VII.	"	"	"	"	"	"	"	"	"	34.056	. .	34.557
	14	Weisse III, 30 . .	9.5	3	III–VII.	309	25	3.1	9.0	5.5	10.7	10.7	5.6	7.43	32.680	. .	33.183
	15	Weisse (2) III, 196 .	7.5	3	III–VII.	301	50	3.1	8.5	6.0	11.3	10.1	5.0	7.33	34.077	. .	34.579
	16	Anon. $3^h\ 16^m\ 2^s$ . .	9.2	3	III–VII.	293	55	3.0	8.0	6.1	12.5	11.0	6.0	7.77	28.638	. .	29.139
	17	Anon. $3^h\ 24^m\ 14^s$.	9.7	2	VI, IX.	311	45	3.0	9.0	6.0	12.0	10.0	4.4	7.40	23.868	. .	24.387
	18	Anon. $3^h\ 35^m\ 27^s$.	9.0	3	III–VII.	305	30	2.7	6.9	3.8	11.1	9.8	3.9	6.37	29.414	. .	29.917
	19	Weisse (2) III, 881 .	7.7	3	III–VII.	292	45	2.1	7.9	4.0	12.0	9.7	5.0	6.78	34.886	. .	35.386
	20	Weisse (2) III, 972 .	. .	3	I–X.	280	45	1.9	9.0	5.7	13.9	11.0	5.1	7.77	31.531	. .	32.010
	21	Anon. $3^h\ 45^m\ 30^s$.	. .	2	III–VII.	"	"	"	"	"	"	"	"	"	29.118	. .	29.612

Number.	Barometer.	THERM'S. At.	THERM'S. Ex.	Instrumental corrections.	Apparent Zenith distance.	Refraction.	Observed Declination.	Reduction to 1870.0.	Observer.	REMARKS.
	in.	°	°	′ ″	° ′ ″	′ ″	° ′ ″	″		
1	. .	. .	. .	− 2 39.2	S. 24 17 28.0	26.7	+ 14 35 44.5	+ 3.8	D.	
2	. .	. .	. .	− 0 55.0	25 14 12.0	28.0	+ 13 38 59.3	+ 4.3	D.	
3	. .	. .	. .	− 3 3.9	64 37 2.6	2 4.7	− 25 45 28.0	+ 17.2	D.	
4	. .	. .	. .	− 0 56.7	24 51 3.5	27.5	+ 14 2 8.2	+ 4.4	D.	
5	. .	. .	. .	+ 1 52.8	27 36 59.8	31.1	+ 11 16 8.3	+ 5.4	D.	
6	29.860	43.5	37.5	− 3 54.0	68 26 13.7	2 29.5	− 29 35 3.9	+ 18.2	D.	
7	. .	. .	. .	+ 1 25.5	37 11 31.3	45.2	+ 1 41 22.8	+ 8.6	D.	
8	. .	. .	. .	+ 1 32.9	37 11 38.6	45.2	+ 1 41 15.4	+ 8.6	D.	
9	. .	. .	. .	− 4 53.0	73 5 14.8	3 13.5	− 34 14 49.0	+ 18.9	D.	
10	. .	. .	. .	− 2 44.9	24 47 22.0	26.7	+ 14 5 28.1	. .	D.	
11	. .	. .	37.9	− 1 59.9	24 48 7.0	26.7				
12	. .	. .	. .	+ 0 10.2	24 15 18.2	26.8	+ 14 37 54.2	+ 4.9	D.	
13	. .	. .	. .	− 2 22.8	24 12 45.2	26.8	+ 14 40 27.3	+ 4.8	D.	Stars, north, preceding.
14	. .	. .	. .	− 1 39.8	29 23 27.7	33.6	+ 9 29 38.0	+ 6.4	D.	
15	. .	. .	. .	− 2 23.5	21 47 43.8	23.8	+ 17 5 31.6	+ 4.4	D.	
16	. .	. .	. .	+ 0 27.0	13 55 34.7	14.8	+ 24 57 49.7	+ 2.4	D.	
17	. .	. .	. .	+ 2 55.5	31 48 2.9	37.0	+ 7 4 59.3	+ 7.2	D.	
18	. .	. .	. .	+ 0 2.6	25 30 9.0	28.5	+ 13 23 1.8	+ 5.6	D.	
19	. .	. .	. .	− 2 48.9	12 42 17.9	13.5	+ 26 11 7.9	+ 2.5	D.	
20	. .	. .	. .	− 1 3.0	0 44 4.8	0.8	+ 38 9 33.7	+ 0.1	D.	
21	29.981	41.5	37.6	+ 0 12.1	S. 0 45 19.9	0.8	+ 38 8 18.6	+ 0.1	D.	

OBSERVATIONS

WITH

THE EQUATORIAL.

1869.

OBSERVATIONS

WITH

THE EQUATORIAL

FELICITAS. (109)

Date.	Sidereal time.	Δα	Δδ	Δρ	α	l. Δp	δ	l. Δp	Star.	Observer.
1869.	h. m. s.	m. s.	′ ″	s. ″	h. m. s.		° ′ ″			
October 29	23 14 34	− 1 53.41	+ 0 47.0	0.00+0.0	0 38 8.33	9.2213*n*	+ 9 52 35.2	0.6375	*a*	H.
31	21 44 0	− 3 12.42	+ 2 50.2	0.00+0.1	0 36 49.32	9.3046*n*	+ 9 54 38.5	0.6608	*a*	H.
Novemb'r 3	22 16 54	− 0 26.90	− 7 56.4	0.00−0.2	0 34 59.12	9.4226*n*	+ 9 58 23.4	0.6492	*b*	H.
4	22 33 22	− 0 59.54	− 6 31.5	0.00−0.1	0 34 26.48	9.3717*n*	+ 9 59 48.4	0.6443	*b*	H.
5	22 27 23	− 1 29.80	− 5 2.3	0.00−0.1	0 33 56.22	9.3891*n*	+ 10 1 17.6	0.6455	*b*	H.
6	22 45 28	− 1 58.36	− 3 22.7	0.00−0.1	0 33 27.64	9.3264*n*	+ 10 2 57.2	0.6404	*b*	H.
8	0 14 18	− 2 49.91	+ 0 14.5	0.00+0.0	0 32 36.09	8.5711*n*	+ 10 6 34.5	0.6268	*b*	H.
11	1 37 42	− 1 6.42	− 6 14.6	0.00−0.1	0 31 36.88	9.1234	+ 10 12 50.8	0.6301	*c*	H.
24	23 22 15	− 1 33.64	+ 3 30.4	0.00+0.1	0 31 20.02	9.1431*n*	+ 10 52 33.0	0.6217	*d*	H.
25	23 26 22	− 1 19.28	+ 7 29.6	0.00+0.2	0 31 34.37	9.1188*n*	+ 10 56 32.3	0.6201	*d*	H.
27	0 57 50	− 2 10.88	− 9 8.7	0.00−0.2	0 32 11.11	8.7188	+ 11 5 15.6	0.6134	*e*	H.
December 1	0 30 13	+ 0 38.78	− 0 22.2	0.00−0.0	0 33 47.51	8.1288	+ 11 23 54.6	0.6080	*f*	H.
3	23 39 58	+ 0 42.03	+ 0 29.6	0.00+0.0	0 34 48.03	9.0463*n*	+ 11 33 49.8	0.6098	*g*	H.
28	2 5 53	+ 1 0.23	− 7 38.0	0.00−0.2	0 58 14.73	9.1401	+ 14 24 2.1	0.5696	*h*	H.
29	1 59 12	+ 2 17.23	+ 0 33.0	0.00+0.0	0 59 31.71	9.0873	+ 14 32 13.2	0.5655	*h*	H.
30	3 0 27	+ 1 50.21	− 0 18.5	0.00−0.0	1 0 53.82	9.3745	+ 14 40 56.5	0.5833	*i*	H.

COMPARISON STARS.

Date.	Mean time.	Star.	α 1868.	Reduction.	δ 1868.	Reduction.	Authority.	Comp.	C—O.
1869.	h. m. s.		h. m. s.	s.	° ′ ″	″			
October 29	8 40 53	*a*	0 39 58.95	+ 2.79	+ 9 51 30.9	+ 17.3	Safford, one observation	19.7	
31	7 2 42	*a*	0 39 58.95	+ 2.79	+ 9 51 30.9	+ 17.3	Washington, two observations . . .	15.5	
Novemb'r 3	7 23 43	*b*	0 35 23.26	+ 2.76	+ 10 6 2.4	+ 17.6	Washington Obs., two observations .	24.5	
4	7 36 12	*b*	0 35 23.26	+ 2.76	+ 10 6 2.4	+ 17.6	Washington Obs., two observations .	7.3	
5	7 26 18	*b*	0 35 23.26	+ 2.76	+ 10 6 2.4	+ 17.6	Washington Obs., two observations .	21.7	
6	7 40 25	*b*	0 35 23.26	+ 2.74	+ 10 6 2.4	+ 17.6	Washington Obs., two observations .	18.6	
8	9 1 18	*b*	0 35 23.26	+ 2.74	+ 10 6 2.4	+ 17.6	Washington Obs., two observations .	15.5	
11	10 12 30	*c*	0 32 40.59	+ 2.71	+ 10 18 47.8	+ 17.7	Argelander	15.5	
24	7 6 19	*d*	0 32 51.04	+ 2.62	+ 10 48 44.9	+ 17.6	Bessel and Schjellerup	21.7	
25	7 6 29	*d*	0 32 51.04	+ 2.61	+ 10 48 44.9	+ 17.6	Bessel and Schjellerup	24.8	
27	8 29 51	*e*	0 34 19.38	+ 2.61	+ 11 14 6.9	+ 17.6	Bessel, Argelander, and Schjellerup .	18.6	
December 1	7 46 35	*f*	0 33 6.16	+ 2.57	+ 11 23 59.3	+ 17.5	Argelander	18.5	
3	6 48 36	*g*	0 34 3.44	+ 2.56	+ 11 33 2.7	+ 17.5	Bessel	21.7	
28	7 35 49	*h*	0 57 12.03	+ 2.47	+ 14 31 23.9	+ 16.4	Bessel	29.10	
29	7 25 13	*h*	0 57 12.03	+ 2.45	+ 14 31 23.9	+ 16.3	Bessel	21.7	
30	8 22 23	*i*	0 59 1.15	+ 2.46	+ 14 40 58.7	+ 16.3	Bessel	23.8	

NOTES.

Star.	α	δ	Authority.
	h. m. s.	° ′ ″	
Star *a*	0 39 59.05	+ 9 51 29.0	Safford, one observation.
	58.85	51 32.8	Washington Transit and Mural Circle, two observations.
Star *d*	0 32 50.96	+ 10 48 44.7	Bessel.
	51.12	48 45.1	Schjellerup.
Star *e*	0 34 19.48	+ 11 14 7.8	Bessel.
	19.27	14 6.3	Schjellerup.
	19.45	14 6.9	Argelander.

OCCULTATIONS OF STARS BY THE MOON, 1869.

Date.	Object.	Phase.	Chronometer time.	Corr. chron.	Mean time.	Obs.	Remarks.
1869.			h. m. s.	m. s.	h. m. s.		
January 28	α Leonis . . .	Immersion . . .	12 12 43.5	− 1 19.3	15 36 50.75	H.	Cloudy, but fair observation.
28	α Leonis . . .	Emersion . . .	13 31 24.0	− 1 19.4	16 55 18.26	H.	Fair observation.
February 15	29 Ceti	Immersion . . .	4 9 36.5	− 0 43.3	6 24 52.45	H.	Fair observation.
15	33 Ceti†. . . .	Immersion . . .	8 23 46.5	− 3 11.6	8 20 34.90	N.	
15	35 Ceti	Immersion . . .	7 0 22.0	− 0 43.6	9 15 9.67	H.	Uncertain; moon low.
19	75 Tauri . . .	Immersion . . .	8 1 19.9	− 0 49.9	10 0 7.68	H.	

† This occultation was observed by Professor Newcomb.

CORRECTIONS

TO THE

STAR POSITIONS OF THE AMERICAN EPHEMERIS,

GIVEN BY

OBSERVATIONS WITH THE TRANSIT CIRCLE.

1869.

CORRECTIONS

TO THE

STAR POSITIONS OF THE AMERICAN EPHEMERIS, ETC.

α Andromedæ.

				s.		″
Jan	30	F.	+	.01	+	2.4
Feb.	5	F.	+	.04	+	0.1
	11	N.	−	.06	+	2.3
	18	N.		. .	+	4.7
	19	F.	+	.02	+	0.3
	24	T.		.00	+	2.0
March	1	F.	−	.02	+	0.7
April	15	F.	−	.01	+	0.6
Mean			−	.029	+	1.64
Div.				. .	−	0.01
Flex., etc.				. .	−	0.05

γ Pegasi.

				s.		″
Feb.	5	N.	+	.05	+	0.8
	6	F.	−	.09		. .
	23	F.	+	.08	−	0.8
	24	T.	+	.11	+	1.5
	26	E.	−	.09	+	0.9
	28	T.	−	.05	+	0.5
Nov.	5	N.	−	.02	+	0.8
	7	T.	+	.03	+	0.9
	9	N.	−	.10		0.0
	11	T.	−	.06	+	1.1
Mean			−	.015	+	0.07
Div.				. .	+	0.20
Flex., etc.				. .		0.00

α Cassiopeæ, S. P.

				s.		″
March	24	T.	−	.05	+	5.9
	27	T.	−	.20	+	3.9
Mean			−	.125	+	4.90
Div.				. .	−	0.07
Flex., etc.				. .	−	0.39

β Ceti.

				s.		″
May	3	F.	−	.03	−	0.4
Div.				. .	−	0.12
Flex., etc.				. .	+	0.24

21 Cassiopeæ, S. P.

				s.		″
March	18	N.	+	.46	+	1.6
	24	T.	+	.02	+	1.4
	27	T.	+	.32	+	3.2
May	20	N.	+	.38	+	2.0
Mean			+	.295	+	2.05
Div.				. .	+	0.22
Flex., etc.				. .	+	0.04

Polaris.

				s.		″
Jan.	7	F.		. .	−	1.3
	13	N.	+	2.00	+	0.9
	19	F.		. .	+	0.6
	20	N.	+	2.30	+	0.5
	23	F.		. .	+	0.4
	30	F.		. .	+	4.3
Feb.	1	T.		. .	−	4.9
	5	F.		. .	+	6.2

Polaris—Continued.

				s.		″
Feb.	17	F.		. .	+	0.9
	19	F.		. .	−	1.5
	24	T.		. .	+	2.0
March	1	F.		. .	+	0.7
	5	F.		. .	+	0.6
	9	F.		. .	−	3.0
	12	F.		. .	−	0.5
	16	F.		. .	+	0.7
	18	N.	−	0.35	+	1.0
	23	F.	+	0.05		. .
	27	T.	−	0.03		. .
	31	T.	+	2.67	+	0.4
April	5	F.	+	0.57	+	2.0
	7	T.	−	0.42		. .
	15	F.		. .	+	1.7
	25	N.		. .	+	0.3
	26	F.		. .	+	1.3
May	3	F.	−	2.45	+	1.3
	10	F.		. .	+	0.9
	14	F.	−	0.84	+	0.8
	16	N.	+	0.39	+	2.3
	19	N.	+	0.60	−	0.4
Mean			+	.374	+	0.67
Div.				. .	−	0.28
Flex., etc.				. .	−	0.10

Polaris, S. P.

				s.		″
Feb.	1	N.		. .	+	0.2
March	18	N.	−	0.07	+	1.0
	23	F.	−	0.36	+	0.2
	24	T.		. .	+	1.4
	27	T.	+	1.72	+	1.1
	31	T.	+	2.74	−	1.2
April	7	T.	+	2.44		. .
	8	N.		. .	+	1.6
	9	F.		. .	+	1.9
	13	F.		. .	+	0.4
	16	F.	−	2.02	−	0.2
	17	Ha.		. .	+	1.4
	19	N.		. .	−	0.2
	21	Ha.		. .	+	0.5
	22	N.		. .	+	0.7
	24	F.		. .	−	0.7
May	4	F.	−	0.33	−	0.4
	5	Ha.		. .	−	0.3
	15	F.	−	0.33	+	0.5
	17	N.	+	1.51		0.0
	20	N.	−	0.52	−	0.3
	22	F.		. .	+	1.3
	24	N.		. .	+	0.1
	25	F.		. .	+	0.8
	26	Ha.		. .	+	0.3
June	3	N.		. .	+	0.5
	5	F.		. .	−	1.5
Mean			+	.478	+	0.35
Div.				. .	−	0.16
Flex., etc.				. .	−	0.07

Polaris, S. P., (Ref.)

				s.		″
April	22	N.		. .	−	1.1
May	20	N.		. .	+	1.4

Polaris, S. P., (Ref.)—Continued.

				s.		″
May	24	N.		. .	+	1.3
	26	Ha.		. .	−	0.3
Mean				. .	+	0.32
Div.				. .	+	0.18
Flex., etc.				. .	−	0.64

A Cassiopeæ, S. P.

				s.		″
March	24	T.	+	.24	+	0.8
	27	T.		. .	+	0.9
Mean			+	.240	+	0.85
Div.				. .	+	0.26
Flex., etc.				. .	+	0.07

η Piscium.

				s.		″
Jan.	16	F.		. .	−	1.7
Div.				. .	+	0.21
Flex., etc.				. .		0.00

ο Piscium.

				s.		″
Jan.	6	N.	−	.05	+	0.5
	16	F.	+	.05	−	0.5
Mean				.000		0.00
Div.				. .	−	0.02
Flex., etc,				. .	+	0.04

β Arietis.

				s.		″
Jan.	20	N.	+	.02		0.0
	23	F.	−	.04	−	2.4
May	14	F.	+	.02	−	0.4
Mean				.000	−	0.97
Div.				. .	+	0.25
Flex., etc.				. .	−	0.02

50 Cassiopeæ.

				s.		″
Jan.	23	F.	+	.17	−	0.5
Div.				. .	−	0.13
Flex., etc.				. .	−	0.19

50 Cassiopeæ, S. P.

				s.		″
March	24	T.	−	.07	+	2.0
	27	T.	−	.25	−	1.8
Mean			−	.160	+	0.10
Div.				. .	+	0.19
Flex., etc.				. .	+	0.05

α Arietis.

				s.		″
Jan.	6	N.	+	.01	+	0.7
	7	F.	+	.04	+	0.4
	23	F.	+	.06	+	0.5
March	1	F.	+	.03	+	3.1
	5	F.	+	.02	−	1.7
	13	T.	−	.10	−	0.6
	31	T.	−	.08	+	0.9
May	10	F.		. .	−	3.2

α Arietis—Continued.

			s.	″
May	15	F.	− .02	− 0.2
	16	N.	− .02	+ 2.0
	19	N.	+ .02	− 1.1
Mean			− .006	+ 0.07
Div.			. .	+ 0.24
Flex., etc.			. .	− 0.03

ξ^1 Ceti.

			s.	″
Jan.	6	N.	+ .04	+ 0.2
	20	N.	+ .08	+ 1.4
Mean			+ .060	+ 0.80
Div.			. .	− 0.03
Flex., etc.			. .	+ 0.04

ι Cassiopeæ.

			s.	″
Jan.	6	N.	+ .42	− 0.3
Div.			. .	− 0.03
Flex., etc.			. .	− 0.21

ι Cassiopeæ, S. P.

			s.	″
March	24	T.	+ .14	− 0.5
	27	T.	+ .02	+ 1.3
Mean			+ .080	+ 0.40
Div.			. .	+ 0.23
Flex., etc.			. .	+ 0.10

γ Ceti.

			s.	″
Jan.	19	F.	− .02	− 0.1
Div.			. .	− 0.18
Flex., etc.			. .	+ 0.07

α Ceti.

			s.	″
Jan.	19	F.	+ .08	+ 0.3
March	23	F.	+ .14	. .
	27	T.	+ .02	+ 1.4
	31	T.	− .06	+ 1.4
Mean			+ .045	+ 0.10
Div.			. .	− 0.18
Flex., etc.			. .	+ 0.06

48 Cephei, S. P.

			s.	″
March	24	T.	+ .19	+ 3.1
May	17	N.	+ .08	+ 0.9
Mean			+ .135	+ 2.00
Div.			. .	+ 0.14
Flex., etc.			. .	+ 0.01

ζ Arietis.

			s.	″
Jan.	19	F.	− .05	+ 0.1
Div.			. .	+ 0.26
Flex., etc.			. .	− 0.03

α Persei.

			s.	″
March	31	T.	+ .07	+ 0.9
Div.			. .	+ 0.15
Flex., etc.			. .	− 0.25

δ Persei.

			s.	″
April	16	F.	+ .22	− 1.2
Div.			. .	+ 0.11
Flex., etc.			. .	− 0.25

η Tauri.

			s.	″
March	18	N.	− .01	− 0.9
April	3	T.	− .03	+ 2.3
	16	F.	+ .02	+ 0.5
Mean			− .007	+ 0.63
Div.			. .	+ 0.19
Flex., etc.			. .	− 0.03

γ Eridani.

			s.	″
Jan.	26	F.	− .03	− 1.4
Div.			. .	− 0.18
Flex., etc.			. .	+ 0.20

γ Tauri.

			s.	″
Jan.	22	F.	. .	− 1.7
Div.			. .	+ 0.22
Flex., etc.			. .	0.00

ε Tauri.

			s.	″
Jan.	22	F.	. .	− 0.6
Div.			. .	+ 0.20
Flex., etc.			. .	− 0.02

α Tauri.

			s.	″
Jan.	22	F.	. .	+ 1.3
	23	F.	+ .11	+ 0.8
April	16	F.	− .05	+ 0.7
	27	F.	. .	+ 1.2
	29	N.	− .04	+ 2.4
May	4	F.	+ .02	+ 1.8
	10	N.	+ .33 r.	. .
	15	F.	− .01	+ 1.1
Mean			− .006	+ 1.33
Div.			. .	+ 0.22
Flex., etc.			. .	− 0.01

α Tauri, (Ref.)

			s.	″
April	22	N.	. .	+ 1.2
Div.			. .	+ 0.08
Flex., etc.			. .	− 0.90

α Camelopardalis.

			s.	″
Feb.	15	N.	+ .21	+ 0.4
Div.			. .	− 0.02
Flex., etc.			. .	− 0.22

α Camelopardalis, S. P.

			s.	″
May	17	N.	+ .10	− 1.4
Div.			. .	+ 0.18
Flex., etc.			. .	+ 0.11

ι Aurigæ.

			s.	″
Feb.	15	N.	+ .02	− 0.4
	19	F.	− .10	+ 0.3
April	16	F.	. .	+ 1.3
	22	N.	+ .03	+ 3.6
	29	N.	− .05	+ 1.3
May	4	F.	− .06	+ 0.8
Mean			− .032	+ 1.15
Div.			. .	− 0.03
Flex., etc.			. .	− 0.06

11 Orionis.

			s.	″
Feb.	15	N.	− .07	− 0.2
Div.			. .	+ 0.22
Flex., etc.			. .	0.00

α Aurigæ.

			s.	″
Feb.	16	F.	− .23	− 1.5
Div.			. .	+ 0.07
Flex., etc.			. .	− 0.25

α Aurigæ, (Ref.)

			s.	″
Feb.	11	N.	− .19	+ 1.8
	15	N.	− .01	+ 0.4
Mean			− .100	+ 1.10
Div.			. .	+ 0.04
Flex., etc.			. .	− 0.80

β Orionis.

			s.	″
April	17	Ha.	+ .05	+ 2.6
May	18	F.	. .	− 1.6
Mean			. .	+ 0.50
Div.			. .	− 0.30
Flex., etc.			. .	+ 0.15

β Tauri.

			s.	″
Jan.	16	F.	− .11	− 1.2
Feb.	11	N.	− .03	− 0.4
	16	F.	+ .01	− 1.1
	20	T.	.00	− 0.4
April	16	F.	− .09	+ 0.8
May	4	F.	+ .06	+ 1.2
Mean			− .017	− 0.18
Div.			. .	− 0.01
Flex., etc.			. .	− 0.05

δ Orionis.

			s.	″
Jan.	12	F.	.00	+ 0.6
	16	F.	− .05	+ 0.5
	20	T.	.00	− 0.6
April	16	F.	− .04	− 0.5
	17	Ha.	+ .02	0.0
Mean			− .014	0.00
Div.			. .	− 0.20
Flex., etc.			. .	+ 0.24

α Leporis.

			s.	″
Feb.	11	N.	− .05	+ 0.7
	16	F.	+ .21	+ 1.2
Mean			+ .080	+ 0.95
Div.			. .	− 0.13
Flex., etc.			. .	+ 0.24

ε Orionis.

			s.	″
Feb.	20	T.	+ .06	− 0.8
May	4	F.	.00	+ 0.8
	8	F.	. .	− 0.2
Mean			+ .030	− 0.07
Div.			. .	− 0.26
Flex., etc.			. .	+ 0.10

α Columbæ.

			s.	″
Jan.	16	F.	− .03	+ 1.3
Feb.	11	N.	+ .06	+ 2.5
	16	F.	+ .15	+ 0.7
Mean			.060	+ 1.50
Div.			. .	− 0.03
Flex., etc.			. .	+ 0.39

α Orionis.

			s.	″
Jan.	7	F.	+ .05	+ 0.5
	12	F.	+ .01	+ 1.0
	16	F.	.00	0.0
	30	F.	. .	+ 0.3
Feb.	5	F.	.00	− 3.6
	19	F.	. .	+ 0.3
May	4	F.	− .06	+ 1.3
	18	F.	. .	− 0.3
Mean			.000	− 0.06
Div.			. .	− 0.06
Flex., etc.			. .	+ 0.04

α Orionis, (Ref.)

			s.	″
Feb.	13	T.	− .07	+ 0.5
Div.			. .	+ 0.10
Flex., etc.			. .	− 0.84

22 CAMELOPARDALIS.

				s.		″
Jan.	7	F.		. .	+	6.0 r
	12	F.	−	.01	+	1.5
	16	F.	+	.29	+	0.6
Feb.	5	F.	−	.09	−	0.6
	13	T.	+	.53	+	1.5
	19	F.	+	.10	+	1.9
Mean			+	.164	+	0.98
Div.				. .	−	0.10
Flex., etc. . . .				. .	−	0.21

μ GEMINORUM.

March	20	T.		. .	−	1.3
May	8	F.		. .	−	1.0
Mean				. .	−	1.15
Div.				. .	+	0.25
Flex., etc. . . .				. .	−	0.03

γ GEMINORUM.

Jan.	6	N.	−	.01	−	0.4
	12	F.	−	.03	−	0.1
	13	N.	−	.04	−	0.3
	16	F.	+	.01	−	0.9
	23	F.	−	.02	−	0.1
	27	F.	+	.01	+	0.1
Feb.	5	F.	+	.07	−	2.2
	6	T.	+	.03	−	1.5
	11	N.	−	.03	−	0.7
	13	T.		.00	+	0.9
	15	N.	−	.02	−	0.2
	19	F.	−	.07	−	0.7
	24	T.	−	.09	+	0.8
	27	T.	−	.03	−	0.1
March	12	F.	+	.03	−	1.3
	31	T.		.00	+	0.7
May	8	F.		. .	+	0.2
Mean			−	.012	−	0.34
Div.				. .	+	0.21
Flex., etc. . . .				. .	−	0.01

51 CEPHEI.

Jan.	7	F.		. .	+	0.5
	19	F.		. .	+	2.4
Feb.	1	N.		. .	−	0.7
	5	F.		. .	+	2.3
	16	F.		. .	+	0.2
March	31	T.		. .	+	2.3
Mean				. .	+	1.17
Div.				. .	−	0.37
Flex., etc. . . .				. .	−	0.11

α CANIS MAJORIS.

Jan.	6	N.	−	.03	+	2.2
	13	N.	−	.12	+	2.6
	20	N.	−	.06	+	2.8
	23	F.	−	.05	+	2.7
Feb.	11	N.	+	.02	+	2.2
	13	T.	−	.05	+	2.9
	15	N.	−	.12	+	1.6
	24	T.	−	.12	+	2.3
	27	T.	−	.13	+	2.1
March	5	F.	−	.20	−	0.3
	11	N.	−	.21		. .
	12	F.	−	.08	+	2.1
	23	F.	−	.08	+	1.3
	31	T.	−	.14	+	2.7
Mean			−	.098	+	2.09
Div.				. .	−	0.15
Flex., etc. . . .				. .	+	0.23

ε CANIS MAJORIS.

Jan.	6	N.	−	.04	−	0.3
	16	F.	−	.04	−	2.3
	19	F.	+	.04	+	0.4

ε CANIS MAJORIS—Continued.

				s.		″
Jan.	23	F.	−	.06	−	0.6
Feb.	1	N.		. .	−	2.0
	5	F.	+	.03	−	2.1
	11	N.	+	.15	−	3.5
	13	T.		. .	+	0.3
	16	F.	−	.18	−	0.7
	19	F.	+	.05	−	0.9
	27	T.		.00	−	1.6
March	12	F.	+	.03	−	1.2
	31	F.	−	.08		0.0
Mean			−	.009	−	1.12
Div.				. .	−	0.08
Flex., etc. . . .				. .	+	0.34

δ CANIS MAJORIS.

March	12	F.	+	.03		. .
	23	F.	+	.04		. .
	31	T.	−	.09	+	1.1
Mean			−	.007	+	1.10
Div.				. .	−	0.06
Flex., etc. . . .				. .	+	0.31

δ GEMINORUM.

Jan.	6	N.	−	.02		0.0
	23	F.	−	.07	−	0.7
Feb.	5	F.	−	.10	−	1.5
	6	T.	−	.04	−	1.2
	8	N.		. .	−	0.5
	10	T.		. .	−	2.2
	16	F.	−	.02	+	0.5
	19	F.	+	.03	−	1.3
	20	T.	−	.07	−	1.6
March	1	F.	−	.03	−	1.4
	11	N.	−	.06		. .
	13	T.	−	.02	−	0.5
	31	T.	−	.08	+	1.3
Mean			−	.044	−	0.76
Div.				. .	+	0.26
Flex., etc. . . .				. .	−	0.03

67 PIAZZI.

Jan.	23	F.	−	.08	−	1.8
Feb.	5	F.		. .	−	0.8
March	12	F.	−	.35	−	2.5
	31	T.	−	.01	+	0.1
Mean			−	.147	−	1.00
Div.				. .	−	0.08
Flex., etc. . . .				. .	−	0.21

α² GEMINORUM.

Jan.	12	F.	+	.28	+	0.5
	19	F.	+	.19	−	2.1
	20	N.	+	.37	+	1.2
Feb.	1	N.	+	.19	+	1.1
	5	F.	+	.23	−	2.3
	10	T.		. .	+	0.5
March	31	T.	+	.26	+	1.5
Mean			+	.245	+	0.04
Div.				. .	−	0.03
Flex., etc. . . .				. .	−	0.06

α CANIS MINORIS.

Jan.	13	N.	−	.01	+	0.6
	19	F.	−	.17	−	1.1
	20	N.	−	.09	+	1.0
Feb.	1	N.	−	.06	+	0.7
	5	F.	−	.08	+	0.5
March	12	F.	−	.07	−	0.7
	13	T.	−	.03	+	0.1
	18	N.	−	.16	−	0.2
	31	T.	−	.12	+	1.9
Mean			−	.088	+	0.31
Div.				. .	−	0.11
Flex., etc. . . .				. .	+	0.05

β GEMINORUM.

				s.		″
Jan.	7	F.	+	.06	+	0.5
	12	F.	−	.03		. .
	13	N.	+	.04	+	0.7
	19	F.	+	.02	+	1.1
Feb.	1	N.	−	.06	+	0.5
	5	F.	−	.05	−	1.8
March	5	F.	−	.08	+	0.3
	12	F.	+	.08		. .
	13	T.	+	.08	−	0.6
	18	N.	−	.04	−	0.2
	31	T.	−	.01	+	1.1
Mean			+	.001	+	0.18
Div.				. .	−	0.01
Flex., etc. . . .				. .	−	0.05

φ GEMINORUM.

Jan.	12	F.	−	.07	−	1.0
	19	F.	+	.03	+	0.4
	30	F.	−	.05	−	0.6
Feb.	5	F.	−	.16	−	1.7
	8	N.		. .	+	0.1
	19	F.	−	.14	−	1.7
	24	T.	−	.04	−	0.4
March	1	F.	−	.13	−	2.9
	5	F.	−	.04	−	1.1
	23	F.	−	.11	−	2.9
	31	T.	−	.07	−	0.1
Mean			−	.031	+	0.76
Div.				. .	−	0.07
Flex., etc. . . .				. .	+	0.04

3 URSÆ MAJORIS.

Jan.	20	N.	+	.05	−	0.6
Div.				. .	−	0.99
Flex., etc. . . .				. .	−	0.21

15 ARGUS.

Jan.	16	F.	−	.01	−	1.9
	20	N.	−	.03	+	0.1
Feb.	5	F.	−	.02	−	0.2
	6	T.	+	.06	+	0.1
	15	N.	−	.05	+	0.5
	19	F.	−	.05	+	2.0
	24	T.	−	.06	−	0.4
March	1	F.	−	.03	−	0.8
	5	F.	+	.02	−	2.1
	16	F.	−	.01	−	2.3
	17	T.	−	.01	−	1.4
	27	T.	−	.12	−	2.0
	31	T.	−	.03	−	0.7
April	3	T.	+	.05	+	1.1
Mean			−	.021	−	0.57
Div.				. .	−	0.02
Flex., etc. . . .				. .	+	0.29

ε HYDRÆ.

Jan.	23	F.	−	.03		0.0
	27	F.	−	.04	+	2.5
Feb.	5	F.		.00		0.0
	6	T.	+	.02	+	1.7
	19	F.	+	.06		. .
March	1	F.		.00	−	0.4
	5	F.	+	.02	+	0.4
	12	F.	−	.10	−	0.1
	15	N.	−	.01	+	1.7
	16	F.	−	.01	−	0.2
	17	T.	−	.07	+	0.1
	18	N.	−	.09	+	0.7
	23	F.	−	.05		0.0
	24	T.	−	.06	+	1.1
April	3	T.	−	.04	+	2.4
	8	N.	−	.06	+	0.9
	19	N.	−	.07	+	1.3
Mean			−	.031	+	0.76
Div.				. .	−	0.07
Flex., etc. . . .				. .	+	0.04

ι Ursæ Majoris.

Date		Obs.	s.	″
Jan.	23	F.	+.05	0.0
March	12	F.	−.23	−1.2
	18	N.	+.02	−0.2
	27	T.	+.21	−0.2
Mean			+.012	−0.40
Div.			. .	+0.14
Flex., etc.			. .	−0.25

ι Ursæ Majoris, (Ref.)

Date		Obs.	s.	″
March	24	T.	+.19	−0.8
April	8	N.	+.19	−0.1
Mean			+.190	−0.45
Div.			. .	+0.01
Flex., etc.			. .	−0.80

σ^2 Ursæ Majoris.

Date		Obs.	s.	″
Jan.	23	F.	+.03	−2.3
March	5	F.	−.09	−0.5
	12	F.	−.20	−3.1
	18	N.	+.04	−1.3
Mean			−.055	−1.80
Div.			. .	−0.05
Flex., etc.			. .	−0.21

σ^2 Ursæ Majoris, (Ref.)

Date		Obs.	s.	″
Jan.	20	N.	+.10	−1.6
April	8	N.	+.11	−0.5
Mean			+.105	−1.05
Div.			. .	−0.03
Flex., etc.			. .	−0.78

κ Cancri.

Date		Obs.	s.	″
Jan.	27	F.	−.05	. .
	28	H.	. .	+1.5
Feb.	6	T.	+.02	−1.8
	11	N.	+.04	−2.1
	13	T.	+.02	−0.6
	16	F.	+.02	. .
	26	F.	−.02	−0.4
March	17	T.	+.08	+0.2
	23	F.	+.01	−0.4
	24	T.	−.02	+0.8
	27	T.	+.08	−0.7
April	7	T.	.00	−0.9
	19	N.	+.04	−0.9
Mean			+.018	−0.48
Div.			. .	+0.11
Flex., etc.			. .	+0.02

α Hydræ.

Date		Obs.	s.	″
Jan.	20	N.	−.02	+1.5
Feb.	26	F.	+.09	+7.0r
March	5	F.	+.02	−0.8
	17	T.	−.03	+1.2
	24	T.	+.04	+0.2
	31	T.	−.01	. .
April	16	F.	.00	+0.2
May	17	N.	−.07	+3.6
Mean			+.002	+0.98
Div.			. .	−0.30
Flex., etc.			. .	+0.15

d Ursæ Majoris.

Date		Obs.	s.	″
Feb.	5	F.	+.05	+10.8r
Div.			. .	−0.11
Flex., etc.			. .	−0.20

ε Leonis.

Date		Obs.	s.	″
Jan.	27	F.	−.07	−0.4
	28	H.	. .	+0.3

ε Leonis—Continued.

Date		Obs.	s.	″
Feb.	16	F.	−.11	. .
	19	F.	−.08	−0.9
	20	T.	−.06	−1.0
	27	T.	+.04	. .
March	15	N.	+.03	+0.1
	24	T.	.00	−0.3
	31	T.	−.05	+0.3
April	8	N.	+.05	. .
	13	F.	−.06	−0.6
	16	F.	+.04	−1.5
Mean			−.026	−0.44
Div.			. .	+0.14
Flex., etc.			. .	−0.03

μ Leonis.

Date		Obs.	s.	″
Jan.	19	F.	+.04	+1.5
	28	H.	. .	+1.6
Feb.	11	N.	+.22	+0.7
	15	N.	+.03	+0.7
	16	F.	+.10	+0.2
	24	T.	+.05	+1.3
	26	F.	−.10	+2.9
March	15	N.	+.09	+0.7
	24	T.	−.05	+1.3
	31	T.	+.09	+1.0
April	16	F.	+.09	+0.4
	22	N.	−.03	+0.9
Mean			+.048	+1.10
Div.			. .	0.00
Flex., etc.			. .	−0.04

α Leonis.

Date		Obs.	s.	″
Jan.	19	F.	−.05	+0.4
	20	N.	+.01	+0.5
	23	F.	+.02	+0.5
Feb.	13	T.	−.01	+0.2
	15	N.	−.08	+1.3
	16	F.	−.11	−0.9
	19	F.	−.04	−0.9
March	23	F.	+.02	−0.2
	24	T.	−.05	+0.4
	31	T.	+.01	+1.8
April	13	F.	.00	+0.3
Mean			−.025	+0.31
Div.			. .	+0.14
Flex., etc.			. .	+0.01

α Leonis, (Ref.)

Date		Obs.	s.	″
April	19	N.	+.01	+1.7
	21	Ha.	+.01	+2.8
	22	N.	. .	+2.5
Mean			+.010	+2.33
Div.			. .	+0.05
Flex., etc.			. .	−0.87

32 Ursæ Majoris.

Date		Obs.	s.	″
Jan.	19	F.	+.20	−0.9
March	31	T.	+.04	−0.4
April	9	F.	−.24	−0.4
	13	F.	−.40	−0.5
Mean			−.100	−0.55
Div.			. .	−0.03
Flex., etc.			. .	−0.22

γ^1 Leonis.

Date		Obs.	s.	″
Jan.	19	F.	+.09	−3.6
	20	N.	+.07	−0.2
	23	F.	+.03	. .
Feb.	6	T.	+.04	−1.1
	11	N.	−.03	−0.5
March	23	F.	+.02	−0.7
	31	T.	−.01	−0.1
April	8	N.	+.13	+0.4
	13	F.	+.05	−2.5

γ^1 Leonis—Continued.

Date		Obs.	s.	″
April	14	T.	−.06	−0.2
	16	F.	+.06	−0.3
	19	N.	+.01	−0.2
Mean			+.033	−0.82
Div.			. .	+0.26
Flex., etc.			. .	−0.02

γ^2 Leonis.

Date		Obs.	s.	″
April	9	F.	+.24	+0.5
Div.			. .	+0.26
Flex., etc.			. .	−0.02

9 Draconis.

Date		Obs.	s.	″
March	23	F.	−.41	−0.7
	31	T.	+.21	−1.0
April	9	F.	−.66	−0.5
	19	N.	−.94	0.0
	22	N.	+1.70	−1.4
Mean			−.020	−0.72
Div.			. .	−0.18
Flex., etc.			. .	−0.17

ρ Leonis.

Date		Obs.	s.	″
Jan.	16	F.	−.06	−1.3
	28	H.	. .	+1.3
March	15	N.	−.08	−0.2
	31	T.	−.03	−0.1
April	13	F.	−.07	+2.4
	14	T.	+.01	−1.6
Mean			−.046	+0.08
Div.			. .	+0.08
Flex., etc.			. .	+0.02

l Leonis.

Date		Obs.	s.	″
Feb.	20	T.	+.11	−1.1
March	23	F.	+.05	−0.9
	27	T.	+.08	−0.7
April	17	Ha.	+.08	0.0
	19	N.	+.06	−1.2
	21	Ha.	+.07	+0.9
	22	N.	+.04	−1.3
Mean			+.070	−0.61
Div.			. .	+0.11
Flex., etc.			. .	+0.02

α Ursæ Majoris.

Date		Obs.	s.	″
March	23	F.	−.23	−0.7
	27	T.	−.60	−0.9
	31	T.	+.27	−0.9
April	13	F.	+.07	−0.3
	21	Ha.	+.11	−1.3
Mean			−.076	−1.02
Div.			. .	−0.08
Flex., etc.			. .	−0.23

α Ursæ Majoris, (Ref.)

Date		Obs.	s.	″
April	22	N.	−.42	−0.1
Div.			. .	−0.20
Flex., etc.			. .	−0.79

δ Leonis.

Date		Obs.	s.	″
Feb.	27	T.	−.04	. .
March	31	T.	−.16	−1.0
April	13	F.	−.06	−1.3
	14	T.	−.03	−1.2
	16	F.	−.09	+1.4
	17	Ha.	−.05	+0.3
	21	Ha.	−.05	0.0

δ Leonis—Continued.

		s.	″
April 24	F.	− .07	− 1.1
May 5	Ha.	+ .02	+ 1.0
Mean		− .058	+ 0.01
Div.		. .	+ 0.27
Flex., etc.		. .	− 0.03

δ Leonis, (Ref.)

		s.	″
March 24	T.	− .05	+ 1.0
Div.		. .	+ 0.03
Flex., etc.		. .	− 0.92

δ Crateris.

		s.	″
Feb. 26	F.	+ .08	+ 2.2
March 23	F.	+ .11	− 0.5
April 9	F.	+ .14	− 2.1
14	T.	. .	− 0.3
16	F.	− .06	+ 1.3
17	Ha.	− .10	+ 1.9
May 5	Ha.	− .09	− 0.5
Mean		+ .013	+ 0.28
Div.		. .	− 0.18
Flex., etc.		. .	+ 0.20

τ Leonis.

		s.	″
Feb. 20	T.	+ .01	+ 0.8
March 23	F.	+ .06	+ 0.2
27	T.	+ .02	+ 0.2
31	T.	+ .06	+ 2.7
April 9	F.	.00	+ 0.5
13	F.	− .05	+ 0.4
14	T.	+ .03	− 2.2
17	Ha.	+ .05	+ 2.1
May 5	Ha.	− .01	− 0.1
Mean		+ .019	+ 0.51
Div.		. .	− 0.18
Flex., etc.		. .	+ 0.06

τ Leonis, (Ref.)

		s.	″
March 24	T.	+ .03	+ 1.7
Div.		. .	+ 0.15
Flex., etc.		. .	− 0.82

λ Draconis.

		s.	″
March 27	T.	+ .44	− 0.8
31	T.	+ .30	− 0.3
April 21	Ha.	− .36	− 0.7
Mean		+ .127	− 0.60
Div.		. .	− 0.11
Flex., etc.		. .	− 0.20

υ Leonis.

		s.	″
March 23	F.	+ .01	− 0.3
24	T.	− .06	+ 0.8
27	T.	− .03	− 1.3
31	T.	− .06	+ 0.8
April 7	T.	− .05	+ 0.6
9	F.	+ .04	+ 0.2
13	F.	+ .01	+ 0.3
17	Ha.	− .04	+ 0.5
May 5	Ha.	− .04	− 0.7
Mean		− .024	+ 0.10
Div.		. .	− 0.18
Flex., etc.		. .	+ 0.09

β Leonis.

		s.	″
March 23	F.	.00	− 0.4
April 7	T.	+ .03	+ 1.2
8	N.	− .04	+ 1.6
9	F.	+ .12	+ 0.7
13	F.	+ .08	+ 0.6
17	Ha.	+ .02	+ 2.9
21	Ha.	+ .04	− 0.4
24	F.	+ .07	− 0.2
May 5	Ha.	− .06	0.0
Mean		+ .029	+ 0.67
Div.		. .	+ 0.22
Flex., etc.		. .	0.00

β Leonis, (Ref.)

		s.	″
March 24	T.	+ .06	+ 1.8
27	T.	. .	+ 1.7
Mean		. .	+ 1.75
Div.		. .	+ 0.08
Flex., etc.		. .	− 0.89

γ Ursæ Majoris.

		s.	″
March 24	T.	+ .21	+ 1.2
27	T.	+ .32	− 0.6
April 9	F.	− .09	− 0.3
22	N.	+ .04	+ 0.1
Mean		+ .120	+ 0.10
Div.		. .	+ 0.01
Flex., etc.		. .	− 0.25

ο Virginis.

		s.	″
March 15	N.	− .09	− 1.1
23	F.	− .01	− 1.0
27	T.	− .07	+ 0.1
April 7	T.	− .04	− 0.9
9	F.	− .11	− 1.9
13	F.	− .05	+ 0.4
21	Ha.	− .07	− 0.8
May 4	F.	− .09	− 0.1
Mean		− .066	− 0.66
Div.		. .	+ 0.04
Flex, etc.		. .	+ 0.03

ο Virginis, (Ref.)

		s.	″
April 19	N.	− .25	+ 1.6
Div.		. .	+ 0.05
Flex., etc.		. .	− 0.85

4 Draconis.

		s.	″
March 27	T.	+ 0.76	− 3.7
April 9	F.	− 1.14	+ 0.8
19	N.	− 0.31	− 1.7
Mean		− .230	− 1.53
Div.		. .	− 0.19
Flex., etc.		. .	− 0.16

4 Draconis, (Ref.)

		s.	″
April 22	N.	+ 1.33	− 0.8
Div.		. .	+ 0.28
Flex., etc.		. .	− 0.72

η Virginis.

		s.	″
Feb. 27	T.	+ .04	+ 1.3
March 15	N.	+ .05	+ 0.8
24	T.	− .08	0.0
April 7	T.	+ .03	+ 1.0
19	N.	+ .05	+ 0.4
22	N.	+ .01	+ 1.3
May 24	N.	− .03	− 0.7
Mean		− .010	+ 0.58
Div.		. .	− 0.18
Flex., etc.		. .	+ 0.09

η Virginis, (Ref.)

		s.	″
March 27	T.	+ .12	+ 2.5
Div.		. .	+ 0.18
Flex., etc.		. .	− 0.79

β Corvi.

		s.	″
March 18	N.	+ .13	− 1.2
24	T.	+ .09	− 1.3
27	T.	+ .16	+ 0.3
April 7	T.	+ .09	− 2.9
14	T.	+ .18	+ 2.2
16	F.	+ .13	− 0.2

β Corvi—Continued.

		s.	″
April 24	F.	.00	− 2.9
May 4	F.	+ .13	− 0.5
20	N.	+ .08	0.0
22	F.	+ .05	− 1.6
Mean		+ .104	− 0.81
Div.		. .	− 0.04
Flex., etc.		. .	+ 0.28

κ Draconis.

		s.	″
March 23	F.	− .19	− 2.3
April 9	F.	− .18	− 1.1
19	N.	− .18	− 0.7
Mean		− .183	− 1.37
Div.		. .	− 0.11
Flex., etc.		. .	− 0.20

32¹ Camelopardalis.

		s.	″
March 24	T.	− 6.37	− 17.6
31	T.	− 8.27	− 21.1
Mean		− 7.320	− 19.35
Div.		. .	− 0.36
Flex., etc.		. .	− 0.13

32¹ Camelopardalis, (Ref.)

		s.	″
May 24	N.	− 7.48	− 19.1
Div.		. .	+ 0.30
Flex., etc.		. .	− 0.69

32² Camelopardalis.

		s.	″
March 24	T.	+ 1.40	− 0.6
31	T.	− 0.41	− 2.0
Mean		− .905	− 1.30
Div.		. .	− 0.36
Flex., etc.		. .	− 0.13

32² Camelopardalis, (Ref.)

		s.	″
May 20	N.	− .40	− 1.1
24	N.	− .14	− 2 2
Mean		− .270	− 1.65
Div.		. .	+ 0.30
Flex., etc.		. .	− 0.69

α Canum Venaticorum.

		s.	″
March 18	N.	− .02	+ 1.0
April 19	F.	− .19	+ 1.6
24	F.	+ .12	− 0.8
May 4	F.	+ .08	− 1.8
15	F.	− .05	+ 1.8
22	F.	− .05	+ 0.8
Mean		− .035	+ 0.43
Div.		. .	+ 0.04
Flex., etc.		. .	− 0.15

θ Virginis.

		s.	″
March 18	N.	+ .02	+ 1.0
27	T.	− .06	+ 0.9
April 21	Ha.	+ .03	+ 2.6
22	N.	− .03	+ 0.4
24	F.	− .07	− 0.8
May 3	N.	− .07	. .
4	F.	− .04	+ 0.3
15	F.	− .04	− 0.5
17	N.	− .12	+ 0.3
20	N.	− .06	− 0.4
22	F.	− .13	− 2.0
Mean		− .052	+ 0.18
Div.		. .	− 0.41
Flex., etc.		. .	+ 0.13

α Virginis.

			s.		″
March 23	F.		.00	—	1.5
24	T.	—	.04	+	0.8
27	T.	—	.01	+	0.4
April 8	N.	—	.05		. .
9	F.	—	.05	+	0.4
16	F.	—	.02	—	0.4
May 4	F.	—	.02	+	0.3
15	F.	—	.04	+	0.9
22	F.	—	.07	—	0.6
24	N.		.00	—	0.7
25	F.	+	.04	—	0.2
Mean		—	.026	—	0.14
Div.			. .	—	0.25
Flex., etc. . . .			. .	+	0.17

ζ Virginis.

			s.		″
March 24	T.	+	.01	+	0.4
27	T.	+	.01	+	0.2
31	T.	—	.06	+	1.4
April 16	F.	—	.01	+	1.9
21	Ha.	+	.02	+	1.7
May 22	F.	—	.06	+	1.6
Mean		—	.015	+	1.20
Div.			. .	—	0.18
Flex., etc. . . .			. .	+	0.09

η Ursæ Majoris.

			s.		″
March 24	T.	—	.30	+	0.7
31	T.	+	.13	+	0.8
May 20	N.	+	.39	+	2.4
Mean		+	.073	+	1.30
Div.			. .	+	0.16
Flex., etc. . . .			. .	—	0.25

η Ursæ Majoris, (Ref.)

			s.		″
March 27	T.	+	.05	+	0.2
May 3	N.	—	.01	+	1.4
10	N.		. .	+	1.8
22	F.	—	.10	—	0.4
Mean		—	.020	+	0.75
Div.			. .	+	0.01
Flex., etc. . . .			. .	—	0.80

η Bootis.

			s.		″
March 27	T.	—	.01	+	0.2
31	T.	—	.04	—	0.2
April 22	N.	—	.02	—	0.4
May 17	N.	—	.09	—	2.1
20	N.	—	.10	—	0.4
24	N.	—	.02	—	0.4
Mean		—	.047	—	0.55
Div.			. .	+	0.20
Flex., etc. . . .			. .	—	0.02

η Bootis, (Ref.)

			s.		″
March 27	T.	—	.01	+	0.2
Div.			. .	+	0.06
Flex., etc. . . .			. .	—	0.91

α Draconis.

			s.		″
April 13	F.	—	.18	—	1.8
May 15	F.	—	.02	—	0.2
17	N.	—	.14	—	2.1
26	Ha.	+	.02	—	1.4
June 3	N.		. .	—	1.6
Mean		—	.080	—	1.42
Div.			. .	—	0.04
Flex., etc. . . .			. .	—	0.22

α Draconis, (Ref.)

			s.		″
March 27	T.	+	.24	—	0.1
May 10	N.	—	.11	—	0.9
20	N.	+	.03	—	0.2
24	N.	—	.28	—	0.4
Mean		—	.030	—	0.40
Div.			. .	—	0.13
Flex., etc. . . .			. .	—	0.78

α Bootis.

			s.		″
April 13	F.	+	.07	—	0.2
16	F.	+	.06	+	1.6
May 3	N.	+	.02	+	1.5
4	F.	+	.08	+	3.1
17	N.	—	.01	+	1.8
20	N.	+	.04	+	1.2
22	F.	+	.11	+	2.7
26	Ha.	—	.04	+	1.3
June 3	N.		. .	+	0.2
Mean		+	.041	+	1.47
Div.			. .	+	0.24
Flex., etc. . . .			. .	—	0.02

α Bootis, (Ref.)

			s.		″
March 24	T.	—	.05	+	1.8
27	T.	—	.05	+	3.0
May 10	N.	—	.12	+	2.1
24	N.	+	.03	+	2.6
25	F.	+	.18	+	3.0
Mean		—	.002	+	2.50
Div.			. .	+	0.04
Flex., etc. . . .			. .	—	0.91

θ Bootis.

			s.		″
March 31	T.	+	.18	+	1.4
May 25	F.	+	.77	—	3.0
Mean		+	.475	—	0.80
Div.			. .	+	0.10
Flex., etc. . . .			. .	—	0.25

θ Bootis, (Ref.)

			s.		″
June 3	N.		. .	+	0.2
Div.			. .	—	0.13
Flex., etc. . . .			. .	—	0.80

5 Ursæ Minoris.

			s.		″
March 24	T.	+	0.60	—	0.8
27	T.	+	1.27	+	0.7
31	T.	+	1.14	—	1.5
May 25	F.	—	1.56	+	1.8
26	Ha.	+	0.29	—	0.3
Mean		+	.348	—	0.02
Div.			. .	—	0.18
Flex., etc. . . .			. .	—	0.17

ε Bootis.

			s.		″
March 24	T.	+	.02	+	0.3
27	T.	+	.05	+	0.9
31	T.	+	.03	+	1.3
May 4	F.		.00	+	0.9
5	Ha.		. .	—	0.2
10	N.	—	.02	+	0.4
22	F.	+	.07		0.0
26	Ha.	+	.02	—	0.7
Mean		+	.024	+	0.36
Div.			. .	—	0.01
Flex., etc. . . .			. .	—	0.05

ε Bootis, (Ref.)

			s.		″
May 25	F.	+	.12		. .
Div.			. .		. .
Flex., etc. . . .			. .		. .

α² Libræ.

			s.		″
March 24	T.	+	.01	+	0.9
27	T.	—	.02	+	1.7
31	T.	—	.01	+	0.9
May 3	N.	+	.10	+	1.3
5	Ha.	+	.08	—	0.8
15	F.	+	.10	—	0.1
22	F.	+	.04	+	2.6
24	N.	+	.01	+	0.8
Mean		+	.039	+	0.91
Div.			. .	—	0.17
Flex., etc. . . .			. .	+	0.22

β Ursæ Minoris.

			s.		″
March 24	T.	+	.31	—	0.4
27	T.	+	1.11	+	1.0
May 15	F.	—	.08	—	0.3
17	N.	—	.15	—	1.8
22	F.	+	.09	—	0.1
24	N.	+	.20	—	1.3
June 3	N.	+	.16	—	0.8
5	F.	—	.50	—	2.0
Mean		+	.142	—	0.71
Div.			. .	—	0.17
Flex., etc. . . .			. .	—	0.18

β Ursæ Minoris, (Ref.)

			s.		″
May 3	N.	+	.29	—	0.4
Div.			. .	+	0.17
Flex., etc. . . .			. .	—	0.74

β Bootis.

			s.		″
March 24	T.	+	.03	—	0.1
27	T.	+	.16	—	1.0
May 5	Ha.	—	.06	+	2.3
15	F.	+	.01	—	1.2
26	Ha.	+	.12	—	0.9
Mean		+	.032	—	0.18
Div.			. .	+	0.14
Flex., etc. . . .			. .	—	0.19

β Libræ.

			s.		″
March 24	T.	—	.03	—	0.1
27	T.	—	.04	+	1.4
May 5	Ha.	+	.05	—	0.5
10	N.	—	.17	—	0.4
15	F.	+	.04	+	0.4
22	F.	+	.05		0.0
25	F.	+	.02	+	0.8
26	Ha.	—	.05	+	1.4
Mean		—	.016	+	0.38
Div.			. .	—	0.30
Flex., etc. . . .			. .	+	0.16

β Libræ, (Ref.)

			s.		″
May 4	F.	+	.03		. .
Div.			. .		. .
Flex., etc. . . .			. .		. .

μ¹ Bootis.

			s.		″
May 3	N.	+	.01	+	0.3
17	N.	+	.03	+	0.1
26	Ha.	+	.02	+	0.5
June 5	F.		. .	+	1.2
Mean		+	.020	+	0.52
Div.			. .	—	0.04
Flex., etc. . . .			. .	—	0.13

γ² Ursæ Minoris.

			s.		″
March 24	T.	+	.25	+	1.9
27	T.	+	.85	+	2.2
Mean		+	.550	+	2.05
Div.			. .	—	0.14
Flex., etc. . . .			. .	—	0.19

α Coronæ Borealis.

			s.	″
March	24	T.	+ .02	+ 2.2
May	20	N.	+ .05	+ 2.0
	22	F.	+ .04	+ 2.6
	24	N.	+ .02	+ 1.6
	25	F.	− .04	+ 2.1
	26	Ha.	+ .01	+ 2.3
June	3	N.	. .	+ 1.8
	5	F.	. .	+ 2.3
Mean			+ .017	+ 2.11
Div.			. .	− 0.01
Flex., etc.			. .	− 0.04

α Coronæ Borealis, (Ref.)

			s.	″
May	10	N.	. .	+ 2.7
Div.			. .	− 0.16
Flex., etc.			. .	− 0.93

α Serpentis.

			s.	″
March	24	T.	+ .08	+ 2.0
May	15	F.	+ .03	+ 1.0
	17	N.	+ .05	+ 2.1
	25	F.	+ .08	+ 1.8
	26	Ha.	+ .01	+ 1.6
June	3	N.	. .	+ 1.7
	5	F.	. .	+ 1.2
Mean			+ .050	+ 1.63
Div.			. .	− 0.07
Flex., etc.			. .	+ 0.04

α Serpentis, (Ref.)

			s.	″
May	5	Ha.	+ .04	+ 3.0
	20	N.	.00	+ 2.8
	24	N.	+ .10	+ 2.9
Mean			+ .047	+ 2.90
Div.			. .	+ 0.11
Flex., etc.			. .	− 0.84

ε Serpentis.

			s.	″
March	24	T.	+ .02	+ 0.5
May	22	F.	− .01	− 1.5
	25	F.	− .10	+ 0.6
	26	Ha.	− .03	+ 1.3
Mean			− .030	+ 0.22
Div.			. .	− 0.13
Flex., etc.			. .	+ 0.06

ζ Ursæ Minoris.

			s.	″
March	24	T.	+ .30	+ 1.0
May	20	N.	+ .29	− 0.2
	25	F.	− .65	+ 1.3
Mean			− .020	+ 0.70
Div.			. .	− 0.19
Flex., etc.			. .	− 0.16

ε Coronæ Borealis.

			s.	″
May	15	F.	− .11	+ 1.1
	22	F.	− .02	+ 0 4
Mean			− .065	+ 0.75
Div.			. .	− 0.01
Flex., etc.			. .	− 0.04

δ Scorpii.

			s.	″
March	24	T.	+ .01	− 0.7
Div.			. .	− 0.05
Flex., etc.			. .	+ 0.27

β¹ Scorpii.

			s.	″
March	24	T.	+ .01	+ 0.4
May	17	N.	+ .13	+ 1.3
	25	F.	+ .12	+ 0.6
June	5	F.	. .	− 0.6
Mean			+ .087	+ 0.42
Div.			. .	− 0.12
Flex., etc.			. .	+ 0.24

Groombridge 2320.

			s.	″
May	4	F.	+ .36	− 0.6
	15	F.	+ .05	+ 0.4
Mean			+ .205	− 0.10
Div.			. .	− 0.26
Flex., etc.			. .	− 0.21

δ Ophiuchi.

			s.	″
March	24	T.	+ .01	+ 2.1
	30	F.	. .	+ 1.5
May	3	N.	+ .09	+ 0.4
	22	F.	+ .13	+ 1.6
	25	F.	− .02	+ 0.8
Mean			+ .052	+ 1.28
Div.			. .	− 0.40
Flex., etc.			. .	+ 0.11

τ Herculis.

			s.	″
March	30	F.	. .	+ 0.2
	31	T.	+ .24	+ 0.5
May	17	N.	+ .26	+ 0.2
	25	F.	+ .05	+ 1.6
June	5	F.	. .	− 0.4
Mean			+ .183	+ 0.42
Div.			. .	+ 0.09
Flex., etc.			. .	− 0.25

α Scorpii.

			s.	″
Feb.	4	F.	− .05	+ 0.1
March	30	F.	. .	+ 0.2
	31	T.	+ .02	+ 0.8
May	10	N.	+ .03	+ 0.5
Mean			.000	+ 0.46
Div.			. .	− 0.06
Flex., etc.			. .	+ 0.31

15 Draconis.

			s.	″
May	17	N.	− .06	− 0.1
Div.			. .	− 0.09
Flex., etc.			. .	− 0.21

ζ Ophiuchi.

			s.	″
March	31	T.	− .01	+ 1.5
May	10	N.	− .24	+ 0.5
	24	N.	− .07	+ 1.0
Mean			− .107	+ 1.00
Div.			. .	− 0.26
Flex., etc.			. .	+ 0.17

η Herculis.

			s.	″
March	31	T.	+ .14	+ 1.6
Div.			. .	+ 0.05
Flex., etc.			. .	− 0.15

κ Ophiuchi.

			s.	″
Feb.	4	F.	+ .10	+ 1.4
March	31	T.	+ .11	+ 5.2*r*
April	29	N.	+ .05	+ 0.2
May	3	N.	+ .10	− 0.6
	4	F.	− .04	+ 1.3

κ Ophiuchi—Continued.

			s.	″
May	15	F.	.00	+ 1.3
	17	N.	+ .13	+ 0.8
Mean			+ .064	+ 0.73
Div.			. .	+ 0.05
Flex., etc.			. .	+ 0.06

d Herculis.

			s.	″
March	30	F.	. .	− 0.2
Div.			. .	− 0.05
Flex., etc.			. .	− 0.06

ε Ursæ Minoris.

			s.	″
Jan.	12	N.	− .39	+ 0.4
Feb.	4	F.	− .22	+ 0.5
Mean			− .305	+ 0.45
Div.			. .	− 0.30
Flex., etc.			. .	− 0.14

a¹ Herculis.

			s.	″
Jan.	12	N.	+ .04	+ 0.5
May	26	Ha.	+ .04	− 0.6
Mean			+ .040	− 0.05
Div.			. .	+ 0.20
Flex., etc.			. .	0.00

a¹ Herculis, (Ref.)

			s.	″
April	29	N.	+ .06	+ 1.1
Div.			. .	+ 0.08
Flex., etc.			. .	− 0.89

b Ophiuchi.

			s.	″
March	4	N.	+ .10	− 4.4
April	29	N.	+ .20	− 0.6
Mean			+ .150	− 2.50
Div.			. .	− 0.02
Flex., etc.			. .	+ 0.29

α Ophiuchi.

			s.	″
Jan.	6	F.	− .06	+ 2.1
	12	N.	+ .10	+ 0.8
	19	N.	− .01	+ 0.6
Mean			+ .010	+ 1.17
Div.			. .	+ 0.14
Flex., etc.			. .	+ 0.01

α Ophiuchi, (Ref.)

			s.	″
April	29	N.	+ .08	+ 2.1
Div.			. .	+ 0.05
Flex., etc.			. .	− 0.88

μ Herculis.

			s.	″
Jan.	19	N.	− .05	− 0.4
March	4	N.	− .06	− 1.0
	5	F.	+ .14	− 0.8
May	25	F.	− .04	+ 0.5
Mean			− .013	− 0.57
Div.			. .	− 0.01
Flex., etc.			. .	− 0.05

ψ¹ Draconis, (Ref.)

			s.	″
April	29	N.	− .09	+ 1.0
Div.			. .	+ 0.14
Flex., etc.			. .	− 0.95

μ^1 Sagittarii.

			s.		″
March 4	N.	—	.07	—	1.0
April 29	N.	+	.02	—	2.8
Mean		—	.035	—	1.90
Div.			. .	—	0.09
Flex., etc.			. .	+	0.26

δ Ursæ Minoris.

			s.		″
Jan. 12	N.	+	.23	—	0.8
19	N.	—	.28	—	1.6
March 4	N.		. .	+	5.3r
5	F.		. .	—	0.7
Mean		—	.025	—	1.03
Div.			. .	—	0.40
Flex., etc.			. .	—	0.11

δ Ursæ Minoris, S. P.

			s.		″
Jan. 7	F.		. .	+	2.1
12	F.		. .	+	0.3
13	N.	+	.27	+	0.9
16	F.		. .	+	1.7
20	N.	—	.49	+	1.7
Feb. 5	F.		. .	—	1.6
6	T.		. .	+	0.3
11	N.		. .	+	0.8
13	T.		. .	+	2.3
19	F.		. .	—	0.5
20	T.		. .	+	1.2
24	T.		. .	—	0.7
27	T.		. .	+	2.2
March 12	F.		. .	+	0.5
13	T.		. .	+	1.7
18	N.		. .	+	1.0
Mean		—	.110	+	0.87
Div.			. .	—	0.18
Flex., etc.			. .	—	0.07

ι Aquilæ.

			s.		″
Jan. 19	N.	+	.02	—	0.6
Div.			. .	—	0.30
Flex., etc.			. .	+	0.15

α Lyræ.

			s.		″
Jan. 6	F.	—	.09	+	1.4
12	N.	+	.05	+	0.8
15	F.	+	.07	+	0.1
19	N.	+	.02	+	1.3
25	F.	+	.05	+	1.1
27	F.	+	.17	+	1.2
Feb. 4	F.	—	.03	+	0.6
5	T.	—	.13	+	0.1
March 6	T.		. .	—	0.5
Mean		+	.014	+	0.76
Div.			. .	+	0.01
Flex., etc.			. .	—	0.14

β Lyræ.

			s.		″
Jan. 25	F.	+	.07	—	0.4
31	N.	—	.07	+	0.9
Feb. 14	N.	+	.03	—	2.1
April 3	T.	—	.02	—	0.2
Mean		+	.002	+	0.45
Div.			. .	—	0.04
Flex., etc.			. .	—	0.06

50 Draconis, S. P.

			s.		″
Feb. 11	N.	+	.12	+	1.1
Div.			. .	+	0.21
Flex., etc.			. .	+	0.03

ζ Aquilæ.

			s.		″
April 3	T.	+	.12	+	2.2
Div.			. .	+	0.17
Flex., etc.			. .		0.00

δ Draconis.

			s.		″
Feb. 18	F.	—	.12	—	2.6
Div.			. .	—	0.04
Flex., etc.			. .	—	0.21

δ Draconis, S. P.

			s.		″
Feb. 11	N.	+	.02	+	0.3
Div.			. .	—	0.25
Flex., etc.			. .	+	0.11

τ Draconis, S. P.

			s.		″
Jan. 13	N.	—	.10	—	1.4
Feb. 1	N.	+	.05	+	0.1
Mean		—	.025	—	0.65
Div.			. .	+	0.20
Flex., etc.			. .	+	0.05

γ Aquilæ.

			s.		″
Jan. 31	N.	+	.04	+	2.3
Feb. 14	N.	+	.16	+	1.1
18	F.		. .	+	2.2
23	T.	+	.10	+	1.4
Mean		+	.100	+	2.23
Div.			. .	+	0.09
Flex., etc.			. .	+	0.02

α Aquilæ.

			s.		″
Jan. 31	N.	+	.08	+	2.4
Feb. 4	F.	+	.02	+	1.9
23	T.	+	.13	+	1.9
Mean		+	.077	+	2.07
Div.			. .	—	0.01
Flex., etc.			. .	+	0.03

β Aquilæ.

			s.		″
Jan. 31	N.	+	.13	+	2.0
Div.			. .	—	0.09
Flex., etc.			. .	+	0.05

λ Ursæ Minoris, S. P.

			s.		″
Jan. 7	F.		. .	+	0.3
12	F.		. .	+	0.6
16	F.		. .	+	0.3
19	F.		. .	+	2.5
23	F.		. .	+	0.7
27	F.		. .	—	0.4
30	F.		. .	—	0.6
Feb. 5	F.		. .	—	2.0
8	N.		. .	+	1.1
March 1	F.		. .	—	1.1
5	F.		. .	+	0.2
17	T.		. .	—	2.1
18	N.		. .	—	0.5
23	F.		. .	—	0.9
27	T.		. .	+	0.5
31	T.		. .		0.0
April 3	T.		. .	+	0.1
8	N.		. .	+	0.3
9	F.		. .	+	0.6
Mean			. .	—	0.02
Div.			. .	—	0.15
Flex., etc.			. .	—	0.08

κ Cephei, S. P.

			s.		″
Jan. 20	N.	—	.20	+	1.2
March 15	N.	+	.34	—	1.1
18	N.	+	.25	+	0.2
Mean		+	.130	+	0.10
Div.			. .	+	0.14
Flex., etc.			. .	+	0.01

α Cygni.

			s.		″
Feb. 19	T.	—	.07		. .
March 2	T.		. .	+	0.7
4	F.		. .	+	1.3
Mean			. .	+	1.00
Div.			. .	+	0.06
Flex., etc.			. .	—	0.25

ζ Cygni.

			s.		″
Jan. 8	N.		. .	+	1.2
March 2	T.		. .	+	0.2
17	N.	—	.11	—	0.1
May 2	N.	—	.04		0.0
Mean		—	.075	+	0.35
Div.			. .	—	0.03
Flex., etc.			. .	—	0.05

α Cephei.

			s.		″
March 15	N.	—	.03	—	2.6
17	N.	—	.11	—	1.6
April 4	N.		. .	—	1.1
May 2	N.		.00	—	0.5
Mean		—	.047	—	1.45
Div.			. .	—	0.08
Flex., etc.			. .	—	0.23

β Aquarii.

			s.		″
Jan. 13	N.	+	.02	+	0.5
March 17	N.	+	.02	+	0.6
April 4	N.		. .	—	0.3
May 2	N.	—	.04	+	0.7
Mean			.000	+	0.38
Div.			. .	—	0.34
Flex., etc.			. .	+	0.14

β Cephei.

			s.		″
Jan. 20	N.	+	.18	—	1.5
April 4	N.		. .	—	0.9
Mean			. .	—	1.20
Div.			. .	—	0.11
Flex., etc.			. .	—	0.20

β Cephei, S. P.

			s.		″
March 24	T.	+	.01	+	2.6
31	T.	+	.11	+	3.6
April 8	N.	+	.07	—	1.7
Mean		+	.063	+	1.50
Div.			. .	+	0.25
Flex., etc.			. .	+	0.07

ε Pegasi.

			s.		″
Jan. 13	N.	—	.07	—	0.2
20	N.	—	.02	—	0.5
Feb. 15	N.	+	.05	+	0.3
March 8	F.		. .	+	0.9
17	N.	—	.09	+	0.5
23	T.	—	.08	+	1.5
26	T.	—	.01	+	0.1
April 4	N.		. .	—	1.0
5	N.		. .	—	1.4
Mean		—	.037	+	0.14
Div.			. .	+	0.03
Flex., etc.			. .	+	0.03

79 DRACONIS, S.P.

			s.		″
April 22	N.		. .	−	0.6
Div.			. .	+	0.20
Flex., etc. . . .			. .	+	0.05

α AQUARII.

			s.		″
March 10	N.	+	.16		. .
26	T.	−	.06	+	3.4
April 6	T.		. .	+	0.1
May 3	F.	+	.03	−	0.7
Mean		+	.043	+	0.93
Div.			. .	−	0.24
Flex., etc. . . .			. .	+	0.10

η AQUARII.

			s.		″
May 2	N.	−	.09	+	0.7
Div.			. .	−	0.23
Flex., etc. . . .			. .	+	0.10

ζ PEGASI.

			s.		″
May 2	N.	−	.08	+	0.7
Div.			. .	+	0.09
Flex., etc. . . .			. .	+	0.02

α PEGASI.

			s.		″
Jan. 26	F.	−	.02	+	0.8
Feb. 5	F.	+	.04	+	2.0
11	N.	−	.09	+	1.8
19	F.	+	.13	−	0.4
March 22	F.	+	.34	+	1.7
30	T.	+	.20	+	1.7
April 4	N.		. .	+	1.5
5	F.		. .	−	2.6
6	T.	−	.05	+	0.4
13	T.	−	.11	+	0.7
Mean		+	.055	+	0.76
Div.			. .	+	0.20
Flex., etc. . . .			. .		0.00

ο CEPHEI, S. P.

			s.		″
March 24	T.	−	.02	+	2.3
27	T.	−	.06	−	1.3
31	T.	−	.23	+	1.1
April 21	Ha.	−	.12	+	1.2
Mean		−	.108	+	0.82
Div.			. .	+	0.25
Flex., etc. . . .			. .	+	0.10

γ CEPHEI.

			s.		″
April 7	N.	+	.40		. .
Div.			. .		. .
Flex., etc. . . .			. .		. .

ι PISCIUM.

			s.		″
April 25	N.		. .	−	2.2
Div.			. .	−	0.13
Flex., etc. . . .			. .	+	0.06

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OF

STARS OBSERVED

WITH THE

TRANSIT INSTRUMENT.

1869.

MEAN RIGHT ASCENSIONS FOR 1870.0.

TRANSIT INSTRUMENT.

Date	h.	m.	s.	Mag.
Lacaille 9724, −23° 51′.				
Sept. 14 . .	0	0	10.90	6.0
(*)−23° 51′.				
Sept. 14 . .	0	0	33.33	8.5
4 Ceti, −3° 16′.				
Oct. 4 . .	0	0	34.50	
Weisse 1230, −2° 6′.				
Oct. 5 . .	0	0	47.60	9.5
Weisse 1240, −2° 5′.				
Oct. 5 . .	0	1	6.14	8.5
Lalande 47307, +37° 59′.				
Sept. 18 . .	0	1	8.79	7.5
30 . .			8.82	7.7
Lalande 47310, +36° 32′.				
Sept. 29 . .	0	1	20.51	
Lalande 26, +39° 1′.				
Nov. 11 . .	0	4	10.00	8.3
θ Sculptoris, −35° 52′.				
Sept. 9 . .	0	5	7.08	5.0
O. Arg. S. 48, −15° 53′.				
Sept. 28 . .	0	5	36.27	8.3
30 . .			36.20	8.2
Lalande 81, +38° 33′.				
Sept. 18 . .	0	5	53.32	
Oct. 20 . .			53.34	6.0
Lacaille 9766, −27° 35′.				
Oct. 1 . .	0	6	0.33	
O. Arg. S. 52, −19° 55′.				
Sept. 27 . .	0	6	2.36	
Lalande 89, +36° 57′.				
Sept. 29 . .	0	6	5.25	
Oct. 26 . .			5.16	7.0
Lalande 100, +36° 41′.				
Sept. 29 . .	0	6	19.46	
Weisse 97, +6° 12′.				
Sept. 14 . .	0	6	21.33	
γ Pegasi, +14° 28′.				
Nov. 11 . .	0	6	32.53	
25 . .			32.63	
Dec. 3 . .			32.65	
(*)−17° 55′.				
Oct. 1 . .	0	6	35.14	
5 . .			35.13	
(*)−17° 55′.				
Oct. 1 . .	0	6	36.51	
5 . .			36.35	
Lacaille 5, −27° 3′.				
Dec. 7 . .	0	6	39.52	7.7
B. A. C. 27, −38° 38′.				
Sept. 28 . .	0	6	40.13	7.0
30 . .			40.14	6.0
23 Andromedæ, +40° 19′.				
Sept. 18 . .	0	6	45.92	6.0
Oct. 20 . .			46.08	5.0
Harvard Z. 97, 22, +0° 12′.				
Sept. 27 . .	0	6	52.43	
Lacaille 9, −27° 1′.				
Oct. 29 . .	0	7	8.79	6.0
Dec. 7 . .			8.78	7.7
Weisse 115, +2° 33′.				
Sept. 9 . .	0	8	9.07	8.2
Lalande 202, +37° 58′.				
Oct. 4 . .	0	9	11.22	8.0
20 . .			11.19	8.0
O. Arg. S. 87, −15° 15′.				
Oct. 26 . .	0	9	34.00	9.3
O. Arg. S. 90, −15° 12′.				
Sept. 14 . .	0	9	41.57	8.0
26 . .			41.42	
Lalande 221, +35° 53′.				
Nov. 11 . .	0	9	56.19	7.5
Dec. 7 . .			56.53	7.8
23 . .			56.39	7.5
B. A. C. 47, +1° 7′.				
Sept. 20 . .	0	9	59.59	
Oct. 29 . .			59.62	
(*)+35° 50′.				
Dec. 23 . .	0	10	1.19	7.5
(*)+37° 29′.				
Nov. 25 . .	0	10	2.51	9.0
Lalande 231, +39° 4′.				
Sept. 28 . .	0	10	7.65	7.5
(*)+0° 3′.				
Sept. 9 . .	0	10	9.89	
27 . .			10.22	
θ Andromedæ, +37° 57′.				
Sept. 18 . .	0	10	18.21	6.0
Weisse (2) 256, +35° 49′.				
Oct. 5 . .	0	10	19.49	8.8
Dec. 23 . .			19.35	8.5
Lalande 251, +35° 49′.				
Oct. 5 . .	0	10	45.23	7.7
Dec. 23 . .			45.25	7.0
Weisse 164, −0° 25′.				
Dec. 3 . .	0	10	49.14	8.0
Groombridge 34, +43° 16′.				
Dec. 9 . .	0	10	58.25	8.0
B. A. C. 57, +0° 58′.				
Sept. 30 . .	0	11	7.04	6.0
(*)−0° 25′.				
Oct. 1 . .	0	11	24.04	
(*)+44° 13′.				
Sept. 28 . .	0	12	44.65	8.0
Radcliffe 65, +44° 13′.				
Sept. 28 . .	0	13	36.10	8.0
Oct. 6 . .			36.09	
d Piscium, +7° 28′.				
Sept. 20 . .	0	13	54.48	
ρ Andromedæ, +37° 14′.				
Nov. 11 . .	0	14	16.55	6.0
Radcliffe 73, +44° 13′.				
Sept. 28 . .	0	14	17.99	7.0
Oct. 1 . .			17.82	
Lacaille 50, −39° 58′.				
Sept. 14 . .	0	14	25.80	7.0
30 . .			25.63	6.5
Weisse 236, −5° 55′.				
Nov. 25 . .	0	15	36.29	8.5
Lacaille 61, −39° 59′.				
Sept. 14 . .	0	16	19.68	6.0
30 . .			19.50	6.0
O. Arg. S. 169, −24° 10′.				
Sept. 27 . .	0	18	16.67	
44 Piscium, +1° 12′.				
Sept. 20 . .	0	18	44.31	
Lalande 508, +35° 45′.				
Nov. 11 . .	0	18	45.37	8.0
Weisse 305, +3° 12′.				
Oct. 20 . .	0	19	15.53	8.0
Weisse 308, +3° 10′.				
Oct. 20 . .	0	19	21.10	8.3
(*)+0° 26′.				
Sept. 30 . .	0	19	32.38	8.0
O. Arg. N. 362, +49° 16′.				
Oct. 4 . .	0	19	41.81	
Groombridge 64, +49° 16′.				
Oct. 4 . .	0	20	10.04	
Weisse 321, −4° 39′.				
Sept. 28 . .	0	20	18.72	8.5
Weisse 337, +3° 53′.				
Dec. 3 . .	0	21	2.57	8.0
7 . .			2.59	8.0
Weisse 341, +6° 23′.				
Nov. 25 . .	0	21	49.04	9.0
Dec. 9 . .			49.07	8.5
Lalande 631, +36° 10′.				
Nov. 11 . .	0	22	2.71	6.0
Weisse 377, −1° 6′.				
Dec. 9 . .	0	23	51.91	8.5
Lalande 736, +36° 14′.				
Nov. 11 . .	0	24	54.02	8.0
(*)+36° 6′.				
Nov. 11 . .	0	28	11.70	9.0

Date	h. m. s.	Mag.
Lalande 849, +36° 6'.		
Nov. 11 . .	0 28 12.36	7.5
ζ Cassiopeæ, +53° 10'.		
Nov. 25 . .	0 29 44.36	
π Andromedæ, +33° 0'.		
Sept. 9 . .	0 29 56.54	4.0
Weisse (2) 749, +33° 0'.		
Sept. 9 . .	0 29 56.78	8.5
(*)+7° 18'.		
Sept. 28 . .	0 30 30.35	9.0
Weisse 503, −1° 35'.		
Sept. 27 . .	0 30 31.02	
Weisse 511, +4° 24'.		
Oct. 4 . .	0 31 20.88	8.5
O. Arg. S. 312, −30° 13'.		
Sept. 14 . .	0 31 37.35	8.2
Lalande 975, +35° 52'.		
Sept. 9 . .	0 31 43.81	8.2
Oct. 5 . .	43.86	8.0
Lacaille 155, −42° 19'.		
Sept. 30 . .	0 31 50.23	
Oct. 1 . .	50.25	6.5
(*)−32° 45'.		
Sept. 28 . .	0 31 57.67	8.5
Dec. 8 . .	57.77	
δ Andromedæ, +30° 9'.		
Sept. 20 . .	0 32 22.74	
Lalande 1003, +36° 4'.		
Nov. 11 . .	0 32 35.69	7.7
Weisse 563, −5° 4'.		
Oct. 1 . .	0 34 1.19	
5 . .	1.29	
B. A. C. 174, −5° 5'.		
Oct. 1 . .	0 34 5.27	
5 . .	5.39	
(*)−7° 7'.		
Dec. 9 . .	0 34 59.17	9.5
30 . .	59.04	9.3
Weisse 572, +6° 33'.		
Oct. 20 . .	0 35 17.22	8.5
26 . .	17.28	9.0
(*)+2° 8'.		
Dec. 23 . .	0 35 18.02	9.0
(*)+2° 3'.		
Dec. 23 . .	0 35 24.39	9.0

Date	h. m. s.	Mag.
(*)+10° 5'.		
Nov. 11 . .	0 35 26.36	8.8
Dec. 30 . .	26.49	8.8
(*)−35° 3'.		
Sept. 27 . .	0 35 31.44	
(*)+4° 1'.		
Sept. 14 . .	0 35 38.09	8.5
(*)+4° 2'.		
Sept. 14 . .	0 35 38.23	8.5
Oct. 29 . .	37.90	9.0
(*)+4° 5'.		
Sept. 27 . .	0 35 38.53	
(*)−35° 3'.		
Sept. 27 . .	0 35 40.82	8.5
β Ceti, −18° 42'.		
Sept. 9 . .	0 37 3.74	
20 . .	3.67	
28 . .	3.76	
30 . .	3.76	
Oct. 4 . .	3.75	
26 . .	3.75	
29 . .	3.73	
Dec. 7 . .	3.71	
23 Cassiopeæ, +74° 8'.		
Nov. 25 . .	0 39 8.06	
(*)+9° 51'.		
Oct. 29 . .	0 40 2.05	9.0
Nov. 11 . .	1.90	
61 Piscium, +20° 12'.		
Sept. 9 . .	0 41 1.22	6.0
i Piscium, (1st *,) +26° 59'.		
Nov. 11 . .	0 42 54.16	7.5
i Piscium, (2d *,) +26° 59'.		
Nov. 11 . .	0 42 54.59	7.5
Rumker, N. F., 340, +2° 2'.		
Sept. 9 . .	0 44 23.57	7.0
Weisse 762, −1° 14'.		
Sept. 28 . .	0 44 37.66	8.2
Weisse 772, −1° 12'.		
Sept. 28 . .	0 44 59.22	7.7
Lacaille 234, −39° 14'.		
Sept. 14 . .	0 45 11.68	6.5
Weisse 800, (1st *,) +4° 18'.		
Sept. 30 . .	0 46 36.18	9.3
Weisse 800, (2d *,) +4° 18'.		
Sept. 30 . .	0 46 36.50	8.8
(*)+1° 13'.		
Oct. 4 . .	0 46 58.32	

Date	h. m. s.	Mag.
Weisse 808, +6° 34'.		
Sept. 9 . .	0 47 5.18	8.0
Lalande 1492, +38° 21'.		
Oct. 5 . .	0 47 6.33	7.5
26 . .	6.41	7.5
(*)+1° 19'.		
Oct. 4 . .	0 47 19.06	
Lalande 1904, +38° 27'.		
Oct. 5 . .	0 47 26.99	8.5
(*)+1° 35'.		
Sept. 14 . .	0 48 38.84	9.0
(*)+1° 35'.		
Sept. 14 . .	0 48 48.94	8.5
μ Andromedæ, +37° 47'.		
Dec. 9 . .	0 49 32.71	
Lalande 1702, +34° 59'.		
Dec. 9 . .	0 53 9.82	7.7
Weisse 917, +4° 11'.		
Sept. 14 . .	0 53 24.95	9.0
Lacaille 277, −39° 37'.		
Sept. 9 . .	0 55 13.67	5.0
(*)+3° 43'.		
Dec. 29 . .	0 55 50.16	9.3
(*)+3° 42'.		
Dec. 29 . .	0 55 56.73	8.0
Weisse 969, +1° 31'.		
Oct. 20 . .	0 56 3.29	9.0
(*)−32° 47'.		
Sept. 28 . .	0 56 7.93	8.8
ε Piscium, +7° 11'.		
Oct. 4 . .	0 56 11.83	
Dec. 3 . .	11.88	
10 . .	11.78	
28 . .	11.85	
σ Sculptoris, −32° 15'.		
Sept. 30 . .	0 56 13.61	5.0
Radcliffe 316, +57° 17'.		
Sept. 29 . .	0 56 33.65	
Radcliffe 317, +57° 15'.		
Sept. 29 . .	0 56 36.46	
B. A. C. 290, +53° 27'.		
Oct. 1 . .	0 56 37.14	
26 . .	36.90	6.0
Anonymous, −24° 31'.		
Oct. 5 . .	0 56 37.39	9.0
20 . .	37.21	9.0
Dec. 9 . .	37.49	9.0
23 . .	37.49	9.0

Date	h. m. s.	Mag.
Radcliffe 319, +57° 20'.		
Sept. 29 . .	0 56 42.78	8.5
O. Arg. S. 596, −28° 35'.		
Sept. 14 . .	0 57 3.11	7.5
Oct. 29 . .	2.83	7.0
B. A. C. 296, −30° 14'.		
Sept. 27 . .	0 57 5.41	
Lacaille 290, −32° 47'.		
Sept. 9 . .	0 57 13.13	7.0
28 . .	13.09	6.5
Weisse 989, +14° 28'.		
Dec. 29 . .	0 57 14.99	
30 . .	15.02	8.2
(*)+9° 50'.		
Sept. 30 . .	0 58 49.80	8.5
μ Cassiopeæ, +54° 17'.		
Oct. 29 . .	0 59 38.25	
Nov. 25 . .	38.29	
Weisse 1043, +7° 40'.		
Sept. 9 . .	0 59 51.97	6.5
Weisse (2) 1490, +37° 19'.		
Jan. 7 . .	1 0 6.21	
O. Arg. N. 1118, +54° 28'.		
Sept. 27 . .	1 0 24.27	
ψ² Piscium, +20° 0'.		
Sept. 14 . .	1 0 59.07	
Rumker, N. F., 538, +3° 44'.		
Sept. 28 . .	1 1 3.61	8.5
Oct. 5 . .	3.45	8.5
Weisse 1078, +8° 41'.		
Oct. 4 . .	1 1 39.66	9.0
Weisse 1085, +9° 2'.		
Sept. 9 . .	1 2 8.00	6.5
45 Andromedæ, +37° 1'.		
Nov. 11 . .	1 3 55.22	
88 Piscium, +6° 17'.		
Nov. 25 . .	1 7 56.76	
Weisse 144, +12° 51'.		
Nov. 25 . .	1 10 49.99	8.0
Weisse 162, +3° 58'.		
Sept. 9 . .	1 12 8.80	7.0
20 . .	8.71	7.5
Rumker, N. F., 585, +4° 21'.		
Oct. 5 . .	1 12 19.98	7.7
29 . .	20.01	7.5

	h. m. s.	Mag.
O. Arg. S. 752, −29° 25′.		
Sept. 14 . .	1 12 23.23	7.5
28 . .	23.09	7.5
(*)+2° 52′.		
Oct. 20 . .	1 12 50.54	9.2
Nov. 11 . .	50.67	9.0
42 Ceti, −1° 12′.		
Dec. 9 . .	1 13 9.54	
Weisse 188, (1st *,) +13° 4′.		
Sept. 9 . .	1 13 21.29	
Oct. 5 . .	21.58	9.2
Weisse 188, (2d *,) +13° 4′.		
Sept. 9 . .	1 13 22.02	
Oct. 5 . .	21.96	9.0
(*)+2° 17′.		
Dec. 23 . .	1 13 35.55	10.0
ξ Andromedæ, +44° 51′.		
Jan. 7 . .	1 14 41.82	6.0
Oct. 29 . .	41.75	5.0
(*)−1° 11′.		
Dec. 9 . .	1 15 10.62	9.0
Lalande 2484, −1° 10′.		
Dec. 9 . .	1 15 55.97	7.0
44 Ceti, −8° 41′.		
Nov. 25 . .	1 17 30.08	6.0
θ Ceti, −8° 52′.		
Jan. 7 . .	1 17 31.56	
Sept. 28 . .	31.48	
29 . .	31.45	
30 . .	31.56	
Oct. 26 . .	31.59	
Nov. 4 . .	31.53	
11 . .	31.57	
Dec. 9 . .	31.48	
23 . .	31.64	
29 . .	31.63	
30 . .	31.63	
Lalande 2603, +38° 59′.		
Oct. 5 . .	1 19 44.37	7.5
94 Piscium, +18° 34′.		
Sept. 14 . .	1 20 40.60	5.8
(*)+6° 20′.		
Oct. 4 . .	1 21 22.25	
B. A. C. 440, +7° 15′.		
Oct. 5 . .	1 21 33.92	7.0
Weisse 348, +7° 15′.		
Oct. 5 . .	1 21 38.51	8.2
O. Arg. S. 850, (1st *,) −17° 56′.		
Oct. 1 . .	1 21 44.89	
O. Arg. S. 850, (2d *,) −17° 56′.		
Oct. 1 . .	1 21 45.76	

	h. m. s.	Mag.
Weisse 336, +8° 6′.		
Sept. 14 . .	1 21 55.56	8.5
μ Piscium, +5° 27′.		
Aug. 25 . .	1 23 22.57	
η Piscium, +14° 40′.		
Sept. 14 . .	1 24 31.81	
Oct. 1 . .	31.75	
20 . .	31.75	
29 . .	31.79	
Nov. 11 . .	31.78	
25 . .	31.80	
Dec. 3 . .	31.82	
28 . .	31.75	
30 . .	31.64	
Lacaille 436, −24° 20′.		
Jan. 7 . .	1 25 57.20	7.0
Lacaille 438, (1st *,) −27° 14′.		
Sept. 29 . .	1 26 13.42	8.5
Lacaille 438, (2d *,) −27° 14′.		
Sept. 29 . .	1 26 14.63	
Weisse 441, −2° 28′.		
Sept. 28 . .	1 26 31.35	
30 . .	31.33	
Weisse 450, −2° 32′.		
Sept. 30 . .	1 26 59.64	7.8
Weisse (2) 575, +15° 2′.		
Oct. 4 . .	1 27 2.51	
5 . .	2.40	8.5
B. A. C. 469, +17° 48′.		
Oct. 26 . .	1 27 47.21	5.5
B. A. C. 471, +7° 36′.		
Oct. 1 . .	1 28 3.64	
B. A. C. 472, +0° 17′.		
Nov. 4 . .	1 28 6.68	6.0
Lacaille 458, −30° 24′.		
Jan. 7 . .	1 28 59.57	7.0
Sept. 28 . .	59.52	7.0
(*)−30° 22′.		
Sept. 28 . .	1 29 3.41	8.3
Nov. 4 . .	3.37	8.3
51 Andromedæ, +47° 57′.		
Sept. 9 . .	1 30 1.26	
(*)−3° 27′.		
Sept. 14 . .	1 30 59.32	9.0
B. A. C. 503, −37° 11′.		
Oct. 1 . .	1 30 40.68	
Lacaille 477, −32° 50′.		
Oct. 4 . .	1 32 43.77	
O. Arg. N. 1812, +67° 20′.		
Sept. 29 . .	1 32 44.83	
30 . .	44.84	

	h. m. s.	Mag.
Weisse 559, +0° 20′.		
Oct. 6 . .	1 32 50.86	9.0
(*)+13° 49′.		
Sept. 9 . .	1 33 15.01	8.8
(*)+13° 52′.		
Sept. 9 . .	1 33 23.75	9.3
Weisse 582, −2° 16′.		
Sept. 14 . .	1 33 49.75	
Oct. 5 . .	49.65	8.5
Weisse 557, +14° 35′.		
Aug. 25 . .	1 33 55.68	
Weisse 558, +14° 35′.		
Aug. 25 . .	1 33 56.48	
Weisse 601, +3° 3′.		
Oct. 26 . .	1 34 0.69	9.0
Weisse 601, +3° 2′.		
Oct. 26 . .	1 34 23.71	8.3
Weisse 598, +9° 26′.		
Jan. 7 . .	1 34 24.39	
B. A. C. 494, +86° 17′.		
Nov. 4 . .	1 34 24.49	
Dec. 29 . .	24.66	
Weisse 600, +9° 26′.		
Jan. 7 . .	1 34 25.74	8.5
Weisse 607, +3° 50′.		
Sept. 9 . .	1 34 35.34	8.8
(*)+5° 8′.		
Sept. 30 . .	1 36 0.85	8.0
Weisse 643, −9° 20′.		
Sept. 28 . .	1 36 3.50	7.0
B. A. C. 527, −32° 59′.		
Sept. 14 . .	1 36 16.43	5.5
Weisse 655, +5° 8′.		
Sept. 30 . .	1 36 51.87	7.5
	51.94	
Weisse 672, −9° 20′.		
Sept. 28 . .	1 37 23.29	8.0
τ Ceti, −16° 38′.		
Jan. 7 . .	1 38 2.12	4.5
o Piscium, +8° 30′.		
Jan. 16 . .	1 38 31.88	
Sept. 9 . .	31.82	
(*)+2° 46′.		
Oct. 1 . .	1 39 11.50	
O. Arg. S. 1049, −27° 1′.		
Sept. 28 . .	1 39 12.12	8.0

	h. m. s.	Mag.
B. A. C. 539, −6° 23′.		
Oct. 4 . .	1 39 27.70	
(*)−26° 58′.		
Sept. 28 . .	1 39 31.28	9.0
(*)+10° 13′.		
Sept. 30 . .	1 40 3.05	8.5
Weisse 709, +10° 12′.		
Sept. 14 . .	1 40 15.42	6.5
20 . .	15.45	6.5
(*)+0° 20′.		
Sept. 29 . .	1 40 20.22	9.0
Weisse 713, +10° 14′.		
Sept. 30 . .	1 40 27.63	8.0
4 Arietis, +16° 17′.		
Oct. 5 . .	1 41 8.02	5.5
26 . .	7.90	6.0
Weisse 755, +0° 19′.		
Jan. 7 . .	1 43 20.14	8.7
Weisse 800, −12° 58′.		
Dec. 29 . .	1 45 30.30	8.0
β Arietis, +20° 10′.		
Sept. 30 . .	1 47 27.68	
Oct. 1 . .	27.76	
5 . .	27.70	
Weisse 843, −1° 51′.		
Jan. 7 . .	1 47 51.02	8.5
λ Arietis, (1st *,) +22° 55′.		
Sept. 29 . .	1 50 41.25	
Oct. 1 . .	41.34	
λ Arietis, (2d *,) +22° 55′.		
Sept. 29 . .	1 50 43.30	
Oct. 1 . .	43.31	
57 Ceti, −21° 27′.		
Oct. 4 . .	1 53 39.26	
5 . .	39.19	5.8
B. A. C. 619, −41° 21′.		
Oct. 26 . .	1 55 1.65	7.5
Dec. 29 . .	1.90	7.5
γ Andromedæ, (1st *,) +41° 42′.		
Sept. 29 . .	1 55 55.35	
Oct. 4 . .	55.49	
γ Andromedæ, (2d *,) +41° 42′.		
Sept. 29 . .	1 55 56.41	
Oct. 4 . .	56.59	
Weisse 1043, +13° 56′.		
Jan. 7 . .	1 59 39.56	8.2
Sept. 29 . .	39.61	
Oct. 5 . .	39.43	8.2

	h. m. s.	Mag.
α Arietis, +22° 50'.		
Jan. 26 . .	1 59 50.95	
Nov. 4 . .	50.93	
Weisse 1071, +8° 13'.		
Nov. 15 . .	2 0 44.34	
(*)+38° 58'.		
Jan. 16 . .	2 2 5.03	9.3
(*)+8° 17'		
Oct. 5 . .	2 5 0.82	
Weisse 44, +8° 16'.		
Oct. 5 . .	2 5 6.64	8.8
Weisse 52, +3° 46'.		
Oct. 20 . .	2 5 13.10	9.0
O. Arg. S. 1376, −18° 22'		
Jan. 7 . .	2 5 23.65	6.5
Lalande 4070, +19° 12'.		
Nov. 15 . .	2 5 41.11	8.5
25 . .	41.15	8.5
O. Arg. S. 1384, −18° 21'.		
Jan. 7 . .	2 5 54.60	7.0
(*)+19° 12'.		
Nov. 24 . .	2 5 54.61	9.5
ξ1 Ceti, +8° 14'.		
Sept. 29 . .	2 6 6.73	
Oct. 20 . .	6.61	
29 . .	6.69	
Dec. 10 . .	6.78	5.0
29 . .	6.65	
O. Arg. S. 1388, −27° 35'.		
Oct. 6 . .	2 6 14.27	8.0
26 . .	14.31	
(*)−29° 36'.		
Oct. 26 . .	2 6 25.53	
(*)+38° 33'.		
Jan. 16 . .	2 6 54.28	9.2
O. Arg. N. 2546, +49° 4'.		
Nov. 4 . .	2 7 18.44	
Dec. 3 . .	18.60	8.0
Weisse (2) 147, +38° 35'.		
Jan. 16 . .	2 7 24.11	7.5
O. Arg. S. 1404, −27° 35'.		
Oct. 6 . .	2 7 37.20	9.0
20 Arietis, +25° 9'.		
Jan. 26 . .	2 8 19.76	6.0
O. Arg. S. 1424, −23° 53'.		
Oct. 20 . .	2 9 17.02	8.0
Weisse 188, +13° 0'.		
Jan. 7 . .	2 13 34.24	8.5

	h. m. s.	Mag.
Lalande 4342, −37° 6'.		
Jan. 26 . .	2 14 28.31	7.5
Weisse 231, −11° 23'.		
Aug. 26 . .	2 15 40.07	7.5
Oct. 4 . .	39.93	
Lalande 4504, +5° 40'.		
Jan. 7 . .	2 19 25.33	7.0
Weisse 305, +9° 57'.		
Jan. 26 . .	2 19 47.38	7.5
Weisse 306, +9° 58'.		
Jan. 26 . .	2 19 49.99	8.5
O. Arg. S. 1555, −24° 28'.		
Jan. 28 . .	2 20 22.15	8.5
ξ2 Ceti, +7° 52'.		
Aug. 26 . .	2 21 14.86	
Oct. 20 . .	14.73	
(*)+61° 13'.		
Jan. 16 . .	2 22 32.28	8.0
Dec. 20 . .	31.94	9.0
(*)+61° 9'.		
Dec. 10 . .	2 22 48.48	8.0
20 . .	49.07	8.0
(*)−36° 39'.		
Jan. 7 . .	2 23 14.11	9.5
14 Trianguli, +35° 34'.		
Jan. 16 . .	2 24 10.55	5.5
Weisse (2) 587, +21° 45'.		
Jan. 26 . .	2 25 0.60	8.2
B. A. C. 790, (1st *,) −28° 47'.		
Aug. 26 . .	2 28 6.79	
B. A. C. 790, (2d *,) −28° 47'.		
Aug. 26 . .	2 28 8.01	
Weisse 455, +3° 33'.		
Jan. 26 . .	2 28 22.34	8.3
30 Arietis, +24° 4'.		
Jan. 7 . .	2 29 28.07	6.5
30 . .	28.09	6.5
B. A. C. 797, +24° 4'.		
Jan. 7 . .	2 29 30.85	6.0
30 . .	30.83	6.0
Weisse (2) 711, +25° 38'.		
Jan. 16 . .	2 30 27.16	
O. Arg. S. 1735, −31° 12'.		
Oct. 5 . .	2 34 28.90	7.0
(*)+37° 36'.		
Jan. 16 . .	2 35 18.05	8.0
28 . .	18.10	

	h. m. s.	Mag.
Weisse (2) 815, +23° 57'.		
Jan. 7 . .	2 35 36.54	9.0
26 . .	36.70	9.0
γ Ceti, +2° 41'.		
Jan. 7 . .	2 36 33.94	
30 . .	34.02	
Oct. 4 . .	33.94	
5 . .	33.97	
26 . .	33.95	
Nov. 2 . .	34.01	
4 . .	34.00	
25 . .	33.94	
μ Ceti, +9° 33'.		
Aug. 26 . .	2 37 55.01	
π Ceti, −14° 25'.		
Jan. 28 . .	2 37 56.21	6.0
O. Arg. S. 1780, −29° 0'.		
Nov. 24 . .	2 38 19.13	9.0
Dec. 29 . .	19.31	9.0
Lalande 5112, +37° 15'.		
Jan. 16 . .	2 39 20.91	7.0
η Persei, +55° 21'.		
Jan. 28 . .	2 41 13.81	5.0
Weisse 694, +12° 24'.		
Jan. 7 . .	2 41 17.28	9.0
Weisse 702, +12° 29'.		
Jan. 7 . .	2 41 40.18	8.0
π Arietis, +16° 55'.		
Aug. 27 . .	2 42 3.19	
O. Arg. S. 1834, −25° 9'.		
Jan. 26 . .	2 43 9.56	9.0
β Fornacis, −32° 58'.		
Jan. 16 . .	2 43 39.03	5.0
Lacaille 891, −31° 22'.		
Dec. 31 . .	2 43 55.15	
Lalande 5315, −23° 34'.		
Jan. 26 . .	2 45 0.00	8.5
20 Persei, +37° 47'.		
Nov. 2 . .	2 45 30.94	6.0
Lacaille 900, −30° 59'.		
Jan. 16 . .	2 45 51.49	7.2
Weisse 831, −0° 6'.		
Jan. 7 . .	2 48 34.15	7.0
Weisse 855, +14° 36'.		
Jan. 26 . .	2 50 0.46	9.0
(*)+38° 17'.		
Jan. 16 . .	2 50 31.68	8.0
28 . .	31.82	8.0

	h. m. s.	Mag.
47 Arietis, +20° 8'.		
Feb. 6 . .	2 50 38.97	
24 Persei, +34° 39'.		
Jan. 28 . .	2 51 0.82	6.0
30 . .	0.68	5.7
Weisse 881, +14° 41'.		
Jan. 7 . .	2 51 27.48	8.3
B. A. C. 908, +80° 57'.		
Nov. 2 . .	2 51 44.32	
4 . .	44.45	6.0
(*)+14° 41'.		
Jan. 26 . .	2 51 57.85	9.0
(*)+14° 39'.		
Jan. 26 . .	2 52 4.20	8.8
30 . .	4.21	8.7
(* 132) Washington, +13° 45'.		
Dec. 29 . .	2 52 40.43	9.5
30 . .	40.44	10.0
Lacaille 951, −34° 43'.		
Nov. 25 . .	2 54 44.43	6.0
α Ceti, +3° 34'.		
Jan. 26 . .	2 55 29.13	
Feb. 6 . .	29.15	
Dec. 10 . .	29.01	
23 . .	29.18	
30 . .	29.19	
(*)−34° 54'.		
Jan. 16 . .	2 59 0.67	
Weisse 1059, +0° 54'.		
Jan. 7 . .	3 0 57.69	7.0
28 . .	57.84	7.5
Lacaille 981, −30° 30'.		
Jan. 26 . .	3 1 12.97	8.0
Weisse 20, +11° 22'.		
Jan. 28 . .	3 3 32.98	6.5
Weisse 23, −10° 5'.		
Dec. 20 . .	3 3 24.20	9.0
23 . .	23.91	8.5
Weisse 30, +9° 29'.		
Jan. 7 . .	3 3 47.47	7.5
O. Arg. S. 2073, −28° 50'.		
Jan. 30 . .	3 3 49.47	8.0
48 Cephei, +77° 14'.		
Jan. 16 . .	3 3 55.17	5.0
Nov. 4 . .	55.33	
Weisse 33, +8° 13'.		
Feb. 6 . .	3 4 7.45	8.0
(*)+38° 27'.		
Dec. 9 . .	3 4 41.14	9.0

Star	Date	h. m. s.	Mag.
Weisse (2) 59, +38° 28'.			
	Dec. 9	3 4 45.34	8.2
Lacaille 996, −24° 14'.			
	Jan. 30	3 4 57.37	6.5
Weisse (2) 75, +16° 48'.			
	Nov. 2	3 4 57.79	8.5
Weisse (2) 69, +38° 28'.			
	Dec. 9	3 5 2.41	8.2
12 Eridani, −29° 31'.			
	Jan. 26	3 6 32.92	4.5
Weisse 95, +3° 8'.			
	Jan. 28	3 6 43.34	8.8
Lalande 5997, −18° 7'.			
	Jan. 7	3 7 10.85	7.7
Lacaille 1004, −32° 53'.			
	Dec. 9	3 7 12.19	6.5
Weisse 101, +12° 34'.			
	Feb. 6	3 7 18.55	8.0
ζ Arietis, +20° 33'.			
	Feb. 11	3 7 25.96	
	Nov. 2	26.11	
	4	25.95	
(*)−18° 7'.			
	Jan. 7	3 7 28.77	9.0
(*)−29° 23'.			
	Jan. 16	3 7 55.76	7.5
(*)+12° 39'.			
	Jan. 30	3 8 46.18	9.0
Weisse 144, −9° 15'.			
	Nov. 25	3 9 12.53	7.5
	Dec. 23	12.69	7.5
Weisse (2) 173, +38° 45'.			
	Jan. 28	3 9 20.61	7.0
Weisse (2) 209, +23° 50'.			
	Jan. 26	3 10 42.95	9.0
Weisse (2) 216, +17° 41'.			
	Jan. 7	3 10 58.96	7.5
O. Arg. S. 2173, −18° 52'.			
	Jan. 16	3 11 28.41	8.5
	30	28.17	9.0
Lacaille 1048, −26° 50'.			
	Nov. 25	3 12 16.06	7.0
15 Eridani, −22° 59'.			
	Feb. 6	3 12 37.41	5.7
60 Arietis+25° 11'.			
	Feb. 4	3 12 43.43	5.5
	Dec. 23	43.41	7.0
Weisse (2) 255, +15° 11'.			
	Jan. 28	3 12 46.97	8.0
(*)+22° 44'.			
	Nov. 2	3 13 10.61	8.5
τ^4 Eridani, −22° 14'.			
	Jan. 6	3 13 44.08	4.5
	30	44.10	4.5
Weisse 233, +10° 9'.			
	Jan. 28	3 14 14.84	8.0
Rumker 845, +24° 17'.			
	Nov. 25	3 14 30.62	9.0
(*)+8° 52'.			
	Feb. 6	3 14 32.94	9.0
Lacaille 1055, −24° 35'.			
	Jan. 7	3 14 47.77	7.0
	16	47.67	7.2
τ^2 Arietis, +20° 16'.			
	Feb. 4	3 15 16.55	5.0
B. A. C. 1054, −26° 3'.			
	Jan. 22	3 16 40.91	
65 Arietis, +20° 20'.			
	Jan. 26	3 16 56.57	5.5
Lalande 6326, −18° 56'.			
	Jan. 7	3 18 27.35	8.0
Weisse 316, +7° 2'.			
	Jan. 16	3 18 57.55	
Weisse 334, +12° 16'.			
	Jan. 22	3 20 9.11	
Weisse 343, +8° 16'.			
	Jan. 16	3 20 39.87	7.0
(*)+12° 17'.			
	Jan. 26	3 21 11.16	9.0
(*)+36° 58'.			
	Feb. 4	3 21 30.53	
	11	30.63	
Weisse (2) 420, +36° 57'.			
	Feb. 4	3 21 33.25	
	11	33.24	8.5
Lacaille 1108, −36° 7'.			
	Jan. 30	3 22 31.17	5.5
(*)+5° 27'.			
	Feb. 6	3 22 34.87	9.0
(*)+5° 29'.			
	Feb. 6	3 22 43.64	9.0
Rumker, N. F., 875, +12° 26'.			
	Jan. 28	3 23 5.59	8.0
(*)−18° 18'.			
	Jan. 7	3 23 10.27	9.5
Lacaille 1111, −36° 16'.			
	Jan. 30	3 23 10.55	6.0
O. Arg. S. 2302, −18° 16'.			
	Jan. 7	3 23 26.55	9.0
Weisse (2) 469, +18° 21'.			
	Jan. 28	3 23 29.65	7.0
Lacaille 1114, −22° 57'.			
	Jan. 22	3 24 6.60	
(*)+7° 8'.			
	Nov. 25	3 24 16.29	9.0
Weisse (2) 493, +18° 21'.			
	Jan. 28	3 24 18.52	7.6
Lacaille 1121, −28° 22'.			
	Feb. 4	3 25 13.43	7.5
	5	13.55	
(*)−26° 3'.			
	Feb. 5	3 25 56.80	
Lacaille 1124, −26° 3'.			
	Jan. 7	3 26 20.17	6.0
Weisse (2) 528, +38° 9'.			
	Jan. 30	3 26 36.84	
7 Tauri, +24° 1'.			
	Jan. 26	3 26 44.85	
O. Arg. S. 2343, −26° 6'.			
	Jan. 22	3 26 50.43	
(*)+31° 17'.			
	Jan. 28	3 27 16.82	8.5
(*)+31° 25'.			
	Nov. 25	3 27 25.83	9.0
B. A. C. 1101, +31° 16'.			
	Jan. 28	3 27 32.98	7.2
(*)−9° 4'.			
	Dec. 9	3 29 39.66	9.5
10 Tauri, −0° 0'.			
	Feb. 11	3 30 13.43	5.0
(*)−18° 57'.			
	Feb. 4	3 30 20.60	7.5
	8	20.57	
O. Arg. S. 2388, −23° 57'.			
	Feb. 6	3 30 22.15	9.0
	Nov. 25	21.88	8.5
(*)+27° 43'.			
	Jan. 16	3 30 22.43	8 5
	26	22.39	
(*)+38° 42'.			
	Jan. 30	3 31 48.31	8.2
(*)+38° 42'.			
	Jan. 30	3 32 2.95	9.0
Weisse 569, +13° 28'.			
	Jan. 7	3 32 3.23	6.5
	28	3 32	7.3
(*)−22° 31'.			
	Dec. 23	3 32 12.38	9.5
	29	12.34	9.0
(*)+38° 39'.			
	Jan. 30	3 32 15.96	9.0
Weisse (2) 669, +38° 39'.			
	Jan. 30	3 32 16.47	8.0
B. A. C. 1123, +37° 7'.			
	Jan. 22	3 32 40.35	
Weisse (2) 721, +18° 58'.			
	Jan. 26	3 33 57.79	
Radcliffe 1041, +48° 6'.			
	Feb. 6	3 34 47.30	6.0
Lacaille 1176, −34° 58'.			
	Jan. 7	3 35 1.34	7.0
(*)+13° 23'.			
	Jan. 16	3 35 24.07	9.0
	Feb. 5	24.21	
	8	23.99	
	Dec. 30	24.01	
Weisse (2) 750, +37° 57'.			
	Jan. 28	3 35 27.65	
	Feb. 4	27.55	
Weisse (2) 751, +37° 51'.			
	Jan. 28	3 35 30.19	
	Feb. 4	30.08	
(*)+13° 26'.			
	Feb. 5	3 35 53.46	
Rumker 945, +23° 43'.			
	Feb. 11	3 35 59.64	8.0
	Dec. 9	59.71	7.8
Lalande 6820, +36° 3'.			
	Nov. 2	3 36 7.01	
	25	6.97	5.5

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o Persei, +31° 52'.		
Feb. 13	3 36 10.15	4.5
Dec. 20	10.18	6.0
Rumker 952, +23° 43'.		
Jan. 30	3 36 40.59	
δ Eridani, −10° 13'.		
Dec. 3	3 37 1.24	6.5
16 Tauri, +23° 51'.		
Jan. 22	3 37 4.70	
26	4.72	6.0
(*)+23° 40'.		
Jan. 30	3 37 9.50	
18 Tauri, +24° 26'.		
Feb. 6	3 37 24.55	5.0
11	24.41	
19 Tauri, +24° 4'.		
Feb. 4	3 37 28.30	5.0
13	28.35	5.5
1 Pleiadum, +23° 37'.		
Jan. 30	3 37 43.21	
(*)+24° 4'.		
Feb. 4	3 37 50.18	
20 Tauri, +23° 56'.		
Jan. 22	3 38 5.70	
26	5.63	5.0
7 Pleiadum, +23° 37'.		
Jan. 30	3 38 8.61	
21 Tauri, +24° 9'.		
Jan. 7	3 38 9.91	6.0
28	10.07	
Dec. 4	9.82	
O. Arg. S. 2488, −22° 21'.		
Dec. 28	3 38 13.50	9.0
29	13.32	9.0
22 Tauri, +24° 7'.		
Jan. 28	3 38 18.45	
Feb. 4	18.38	
8 Pleiadum, +23° 48'.		
Feb. 6	3 38 30.19	
11	30.13	
9 Pleiadum, +23° 48'.		
Feb. 6	3 38 32.44	
11	32.41	
23 Tauri, +23° 34'.		
Jan. 16	3 38 36.76	
Feb. 13	36.68	
10 Pleiadum, +23° 48'.		
Feb. 6	3 38 43.49	
11	43.47	
(*)+23° 42'.		
Jan. 30	3 38 55.97	
B. A. C. 1163, +24° 8'.		
Feb. 4	3 39 14.62	
O. Arg. S. 2504, −23° 47'.		
Dec. 29	3 39 15.40	7.5
30	15.44	7.7
(*)+23° 30'.		
Feb. 13	3 39 21.12	
(*)+24° 1'.		
Jan. 28	3 39 26.15	
(*)+23° 42'.		
Jan. 30	3 39 33.02	
18 Pleiadum, +23° 43'.		
Jan. 30	3 39 35.81	
Feb. 6	35.81	
24 Tauri, +23° 42'.		
Jan. 16	3 39 37.58	
30	37.47	
Feb. 6	37.45	
11	37.52	
(*)+23° 40'.		
Feb. 4	3 39 39.53	8.5
(*)+11° 17'.		
Dec. 23	3 39 41.26	8.5
(*)+23° 30'.		
Feb. 13	3 39 41.52	
(*)+24° 1'.		
Jan. 28	3 39 45.54	
(*)+24° 1'.		
Jan. 16	3 39 45.62	
Feb. 5	45.58	
11	45.56	
η Tauri, +23° 41'.		
Jan. 16	3 39 45.72	4.5
Feb. 5	45.61	
8	45.61	
20	45.62	
(*)+23° 30'.		
Feb. 13	3 39 46.43	
Weisse 751, +12° 3'.		
Nov. 25	3 40 12.61	9.0
Weisse 752, +12° 6'.		
Nov. 25	3 40 13.70	8.3
(*)+23° 43'.		
Jan. 30	3 40 23.41	
Feb. 6	23.22	
11	23.44	
Rumker 989, +23° 56'.		
Jan. 30	3 40 30.97	
B. A. C. 1171, +23° 56'.		
Jan. 7	3 40 45.69	6.5
26	45.73	
28	45.82	
41 Pleiadum, +23° 48'.		
Feb. 6	3 40 50.86	
11	50.84	
e Tauri, +10° 44'.		
Aug. 28	3 41 8.57	
Nov. 2	8.86	
18	8.76	
B. A. C. 1179, −29° 45'.		
Dec. 28	3 41 9.59	8.0
Weisse (2) 980, +34° 31'.		
Dec. 9	3 41 9.43	8.0
(*)+23° 30'.		
Feb. 13	3 41 13.63	
Weisse (2) 901, +15° 11'.		
Dec. 23	3 41 19.93	
27 Tauri, +23° 37'.		
Jan. 30	3 41 26.08	
Feb. 6	26.04	
8	25.99	
20	26.12	
28 Tauri, +23° 41'.		
Jan. 30	3 41 27.26	
Feb. 6	27.19	
8	27.41	
(*)+23° 30'.		
Feb. 13	3 41 29.03	
Weisse (2) 896, +37° 28'.		
Dec. 20	3 41 31.29	
31 Pleiadum, +23° 59'.		
Jan. 26	3 41 32.08	
28	32.13	
Weisse 774, +15° 11'.		
Nov. 25	3 41 33.43	8.0
Dec. 23	33.22	
B. A. C. 1182, +23° 59'.		
Jan. 26	3 41 37.11	
28	37.10	
33 Pleiadum, +23° 59'.		
Jan. 7	3 41 41.67	7.3
Feb. 5	41.76	
11	41.70	
(*)+23° 47'.		
Jan. 16	3 41 41.76	
Weisse (2) 906, +34° 25'.		
Dec. 9	3 41 53.22	6.0
(*)+23° 48'.		
Feb. 4	3 42 1.60	8.5
6	1.75	
11	1.79	
36 Pleiadum, +23° 48'.		
Feb. 4	3 42 10.48	8.5
6	10.55	
11	10.57	
37 Pleiadum, +23° 57'.		
Jan. 28	3 42 12.07	
(*)+23° 35'.		
Jan. 28	3 42 14.83	
Weisse (2) 917, +34° 41'.		
Dec. 30	3 42 30.33	
O. Arg. S. 2548, −26° 44'.		
Dec. 29	3 42 31.99	7.0
Lalande 7069, +9° 1'.		
Jan. 22	3 42 43.21	
(*)−32° 39'.		
Jan. 7	3 45 9.50	6.5
Weisse (2) 972, +38° 9'.		
Feb. 5	3 45 29.02	
8	28.64	
(*)+38° 9'.		
Feb. 5	3 45 30.16	
ζ Persei, +31° 29'.		
Feb. 13	3 45 57.82	
20	57.84	
Aug. 28	57.93	
Nov. 2	57.94	
18	57.91	
Lalande 7184, +22° 49'.		
Jan. 26	3 47 2.76	7.0
B. A. C. 1211, +80° 20'.		
Jan. 28	3 48 24.74	
30	24.64	
Lalande 7238, +22° 46'.		
Jan. 16	3 48 45.92	7.0
B. A. C. 1222, −28° 3'.		
Jan. 7	3 48 55.19	
22	55.23	
(*)+19° 43'.		
Feb. 4	3 49 19.68	8.3
O. Arg. S. 2663, −26° 35'.		
Feb. 5	3 50 10.47	8.0
B. A. C. 1229, −13° 59'.		
Dec. 20	3 50 24.58	

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ξ Persei, +35° 23'.				
Jan. 16	3	50	32.13	5.5
26			32.12	5.0
Weisse (2) 1082, +22° 43'.				
Feb. 6	3	50	38.64	8.2
11			38.71	8.0
(*)−18° 56'.				
Jan. 30	3	51	13.08	8.0
Feb. 8			13.13	
Weisse 975, +14° 43'.				
Jan. 22	3	51	16.10	
28			16.25	
Feb. 4			16.02	8.0
γ Eridani, −13° 53'.				
Jan. 7	3	51	57.91	
Nov. 2			57.90	
18			57.89	
25			57.86	
Dec. 3			57.81	
9			57.93	
23			57.80	
28			57.81	
30			57.97	
λ Tauri, +12° 7'.				
Aug. 28	3	53	28.71	
Nov. 18			28.65	
O. Arg. S. 2710, −29° 8'.				
Jan. 30	3	54	9.79	9.0
(*)−21° 24'.				
Feb. 8	3	55	28.04	
Lalande 7492, −22° 38'				
Jan. 7	3	55	34.53	7.0
13			34.72	7.0
B. A. C. 1235, +85° 12'.				
Jan. 26	3	56	34.71	
28			33.54	
Feb. 20			33.29	
Lacaille 1326, −34° 50'.				
Jan. 30	3	57	4.01	
Weisse (2) 1210, +16° 14'.				
Jan. 16	3	57	13.60	9.0
Feb. 11			13.51	8.0
A² Tauri, +21° 39'.				
Feb. 13	3	57	38.59	
(*)−26° 50'.				
Feb. 8	3	58	7.54	9.0
Dec. 29			7.54	8.5
B. A. C. 1247, +83° 29'.				
Feb. 4	3	58	20.25	
5			19.47	
Weisse (2) 1275, +20° 55'.				
Feb. 6	4	0	4.88	
(*)+14° 49'.				
Jan. 7	4	0	20.46	9.0
16			20.60	9.2
Rumker 1089, +14° 49'.				
Jan. 7	4	0	20.63	
16			20.78	7.0
Lacaille 1346, −31° 23'.				
Jan. 30	4	0	28.73	6.5
Feb. 5			28.73	8.0
O. Arg. S. 2803, −23° 37'.				
Nov. 18	4	0	39.05	9.0
(*)−7° 50'.				
Dec. 29	4	2	0.30	9.3
O. Arg. S. 2828, −27° 47'.				
Feb. 13	4	2	1.46	
(*)−7° 48'.				
Dec. 29	4	2	9.98	8.8
Weisse 24, +14° 54'.				
Jan. 7	4	3	20.34	8.2
22			20.38	
Weisse (2) 22, +15° 37'.				
Jan. 13	4	3	32.44	
28			32.49	6.5
Feb. 6			32.37	
8			32.48	
20			32.44	7.0
O. Arg. S. 2844, −25° 21'.				
Jan. 30	4	3	32.48	8.0
(*)−9° 9'.				
Jan. 28	4	4	2.09	8.5
O. Arg. S. 2858, −28° 9'.				
Dec. 30	4	4	5.22	
O. Arg. S. 2867, −25° 20'.				
Jan. 30	4	4	31.01	6.0
Lalande 7819, −9° 9'.				
Jan. 28	4	4	32.12	6.0
Feb. 5			32.18	
Nov. 18			32.10	7.5
Lalande 7773, +44° 27'.				
Dec. 9	4	5	1.65	8.0
Rumker 1110, +16° 57'.				
Jan. 16	4	5	4.15	6.5
Lacaille 1374, −34° 49'.				
Dec. 29	4	5	9.80	6.5
(*)−26° 56'.				
Feb. 11	4	5	11.60	8.3
13			11.60	8.5
μ Persei, +48° 5'.				
Jan. 26	4	5	21.71	
Feb. 4			21.57	5.0
Weisse 81, −9° 10'.				
Feb. 5	4	5	40.44	8.0
Lalande 7817, +44° 25'.				
Dec. 9	4	6	3.67	8.5
(*)−6° 52'.				
Jan. 7	4	6	9.77	9.2
22			9.79	9.0
Lalande 7833, +44° 22'.				
Dec. 9	4	6	34.23	8.0
(*)−28° 16'.				
Feb. 6	4	7	16.49	9.0
Weisse 114, −10° 43'.				
Jan. 30	4	7	18.88	7.5
Lalande 7931, −23° 28'.				
Feb. 1	4	7	30.26	
Weisse (2) 121, +23° 42'.				
Jan. 13	4	7	35.96	
Lacaille 1378, −23° 7'.				
Feb. 11	4	8	2.83	6.0
Weisse (2) 130, +22° 27'.				
Feb. 8	4	8	3.65	
15			3.67	8.0
(*)−31° 36'.				
Feb. 13	4	8	9.13	8.0
A Eridani, −10° 34'.				
Jan. 16	4	8	12.66	6.0
(*)+15° 58'.				
Jan. 7	4	8	52.32	9.0
Dec. 9			52.46	9.0
Weisse (2) 137, +44° 21'.				
Jan. 28	4	9	6.91	7.5
Feb. 4			6.70	7.5
o² Eridani, −7° 50'.				
Jan. 30	4	9	17.53	5.0
(*)+16° 17'.				
Dec. 30	4	9	26.46	
(*)+45° 45'.				
Nov. 18	4	9	28.23	6.0
Dec. 20			28.45	
(*)−6° 52'.				
Jan. 22	4	9	38.69	9.0
Weisse (2) 160, +20° 14'.				
Dec. 28	4	9	41.93	
Weisse (2) 166, +20° 12'.				
Dec. 28	4	9	49.95	
Lalande 7987, +16° 17'.				
Dec. 29	4	10	2.35	7.5
30			2.39	
O. Arg. S. 2939, −22° 28'.				
Feb. 6	4	10	15.98	7.2
Weisse (2) 203, +17° 31'.				
Feb. 8	4	11	8.79	
11			8.99	
Weisse (2) 204, +17° 31'.				
Feb. 8	4	11	9.39	
11			9.32	
B. A. C. 1327, −39° 12'.				
Feb. 4	4	11	55.43	7.0
5			54.81	
γ Tauri, +15° 18'.				
Jan. 7	4	12	23.82	
16			23.92	
26			23.87	
30			23.80	
Feb. 27			23.84	
Nov. 18			23.80	
Dec. 3			23.80	
10			23.83	
55 Tauri, +26° 12'.				
Feb. 13	4	12	28.38	6.5
(*)+46° 46'.				
Feb. 19	4	12	36.72	7.5
(*)+16° 15'.				
Dec. 30	4	12	46.49	8.0
58 Tauri, +14° 45'.				
Feb. 1	4	13	14.14	
(*)−7° 50'.				
Dec. 29	4	13	43.24	
Weisse (2) 267, +17° 57'.				
Dec. 9	4	13	53.16	7.5
30			53.18	8.0
Rumker 1163, +16° 29'.				
Jan. 28	4	14	6.30	8.5
Feb. 4			6.06	8.5
O. Arg. S. 2997, −27° 7'.				
Feb. 15	4	14	21.04	9.0
(*)+17° 39'.				
Feb. 11	4	14	34.64	9.0
Rumker 1167, +16° 29'.				
Jan. 28	4	15	17.12	7.5
Feb. 4			16.99	7.5
5			17.11	
Weisse 286, +14° 44'.				
Jan. 30	4	15	21.84	

63 Tauri, +16° 28'.

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Jan. 22 . .	4 15 57.69	
23 . .	57.58	7.5
Feb. 4 . .	57.58	7.0
5 . .	57.68	

55 Persei, +33° 50'.

Jan. 16 . .	4 16 3.33	6.0
26 . .	3.25	

B. A. C. 1355, −26° 2'.

Feb. 8 . .	4 16 7.62	

O. Arg. S. 3022, −26° 1'.

Feb. 8 . .	4 16 9.88	

Weisse (2) 344, +16° 31'.

Jan. 13 . .	4 17 0.29	
Feb. 5 . .	0.38	
Dec. 9 . .	0.46	8.0
29 . .	0.26	7.5
30 . .	0.34	8.0

(*)−28° 28'.

Feb. 11 . .	4 17 52.19	8.0

Weisse (2) 363, +18° 35'.

Jan. 13 . .	4 17 54.84	8.2

(*)−25° 42'.

Jan. 30 . .	4 17 55.51	7.8
Feb. 8 . .	56.67	

Second uncertain.

Weisse (2) 387, +16° 32'.

Jan. 22 . .	4 18 56.69	
Feb. 5 . .	56.68	
Dec. 9 . .	56.73	8.0
29 . .	56.59	7.5
30 . .	56.64	8.0

Weisse (2) 391, +16° 29'.

Jan. 22 . .	4 19 12.38	
28 . .	12.50	
Feb. 4 . .	12.42	

B. A. C. 1374, −35° 3'.

Jan. 30 . .	4 20 7.51	6.0

(*)+16° 28'.

Feb. 4 . .	4 20 14.64	9.0
11 . .	14.67	

Weisse (2) 420, +23° 49'.

Jan. 16 . .	4 20 30.01	
Feb. 13 . .	30.00	

(*)+14° 49'.

Feb. 15 . .	4 21 0.04	
20 . .	20 59.95	8.5

ε Tauri, +18° 53'.

Feb. 6 . .	4 21 1.51	
8 . .	1.65	
Dec. 9 . .	1.72	

δ Tauri, +15° 40'.

Jan. 26 . .	4 21 9.01	5.5
Feb. 27 . .	8.93	5.0

(*)+14° 48'.

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Feb. 15 . .	4 21 9.56	9.5
20 . .	9.47	9.0

Lalande 8431, −11° 24'.

Nov. 18 . .	4 21 39.71	7.0

Lacaille 1463, −32° 41'.

Feb. 1 . .	4 22 42.41	
Dec. 28 . .	42.41	

O. Arg. S. 3108, −23° 24'.

Jan. 30 . .	4 22 43.85	9.0

Weisse 471, −10° 45'.

Jan. 16 . .	4 23 11.46	8.3

(*)−26° 34'.

Feb. 11 . .	4 23 17.06	7.7

Lalande 8455, +36° 45'.

Jan. 28 . .	4 23 37.37	6.5
Feb. 13 . .	37.14	7.0

84 Tauri, +14° 49'.

Jan. 13 . .	4 23 44.62	
Feb. 6 . .	44.61	
15 . .	44.74	

Lacaille 1483, −23° 19'.

Jan. 30 . .	4 25 2.70	6.0

B. A. C. 1404, −30° 43'.

Feb. 20 . .	4 25 17.24	7.5

(*)+15° 42'.

Feb. 4 . .	4 25 24.10	8.5

(*)+15° 32'.

Dec. 20 . .	4 25 34.10	9.0
30 . .	34.06	8.0

(*)+28° 27'.

Jan. 28 . .	4 25 35.82	8.5

Weisse (2) 538, +21° 57'.

Feb. 6 . .	4 25 53.39	

Weisse 533, +14° 54'.

Jan. 16 . .	4 26 35.03	7.5
Feb. 6 . .	34.99	7.5

Weisse (2) 562, +22° 6'.

Feb. 8 . .	4 26 56.18	

Weisse 554, +5° 16'.

Feb. 11 . .	4 27 13.58	6.0
16 . .	13.63	6.0

Lacaille 1504, −25° 28'.

Feb. 5 . .	4 27 14.63	
20 . .	14.40	7.5

Weisse 572, +0° 7'.

Jan. 13 . .	4 26 46.51	
22 . .	46.48	

α Tauri, +16° 14'.

	h. m. s.	Mag.
Jan. 26 . .	4 28 27.75	
Nov. 18 . .	27.76	

Weisse (2) 600, +26° 58'.

Feb. 15 . .	4 28 42.90	9.0

(*)+5° 54'.

Feb. 8 . .	4 28 43.13	

Weisse (2) 618, +15° 37'.

Jan. 16 . .	4 29 14.87	6.5

Lacaille 1521, −25° 19'.

Feb. 5 . .	4 29 31.01	

B. A. C. 1427, −3° 52'.

Feb. 6 . .	4 29 32.86	5.5

(*)+5° 54'.

Feb. 4 . .	4 29 36.74	
8 . .	36.92	9.5

Weisse 646, +7° 3'.

Jan. 22 . .	4 30 4.39	

(*)−26° 50'.

Jan. 30 . .	4 31 3.52	8.5
Feb. 11 . .	3.50	9.0

Lacaille 1537, −38° 4'.

Feb. 13 . .	4 31 42.26	7.5

53 Eridani, −14° 33'.

Jan. 28 . .	4 32 13.72	4.5
Dec. 20 . .	13.77	6.5

(*)−27° 2'.

Jan. 16 . .	4 32 25.78	
Feb. 11 . .	25.91	9.5

c^2 Tauri, +11° 56'.

Feb. 4 . .	4 32 49.25	5.5
5 . .	49.28	

Weisse 705, +7° 0'.

Feb. 15 . .	4 32 59.98	
20 . .	59.94	8.0

Weisse (2) 694, +38° 1'.

Feb. 1 . .	4 33 0.39	
6 . .	0.12	5.5

Lacaille 1541, −28° 9'.

Feb. 13 . .	4 33 43.42	7.0

Weisse 722, +14° 34'.

Dec. 30 . .	4 34 4.68	9.0

Weisse 725, +8° 1'.

Jan. 13 . .	4 34 9.05	9.0

Weisse 721, −8° 4'.

Feb. 20 . .	4 34 11.59	9.0
Dec. 28 . .	11.57	

(*)−25° 54'.

	h. m. s.	Mag.
Jan. 30 . .	4 34 52.12	

Lalande 8870, +22° 40'.

Feb. 1 . .	4 36 5.90	

(*)−1° 41'.

Jan. 16 . .	4 36 34.94	9.3

Lacaille 1557, −39° 48'.

Feb. 11 . .	4 36 39.17	8.0

(*)−23° 26'.

Feb. 4 . .	4 36 53.14	6.0
5 . .	53.16	

B. A. C. 1460, +10° 54'.

Feb. 8 . .	4 37 13.65	
Dec. 28 . .	13.65	7.0

β Cœli, −27° 24'.

Feb. 20 . .	4 37 27.72	5.5

B. A. C. 1459, +55° 22'.

Jan. 28 . .	4 37 27.88	

O. Arg. S. 3325, −24° 5'.

Feb. 13 . .	4 37 41.85	8.5

Weisse 806, +2° 59'.

Feb. 6 . .	4 37 54.58	7.7

Lacaille 1564, −30° 59'.

Dec. 29 . .	4 38 7.96	5.5

Lacaille 1568, −39° 6'.

Jan. 30 . .	4 38 13.51	8.2
Dec. 30 . .	13.46	8.2

Weisse (2) 866, +29° 32'.

Jan. 13 . .	4 40 9.50	
Feb. 1 . .	9.56	

Weisse (2) 886, +24° 30'.

Feb. 4 . .	4 40 40.35	

Lacaille 1580, −25° 23'.

Dec. 28 . .	4 40 41.12	8.0

1 Aurigæ, +37° 15'.

Jan. 28 . .	4 41 9.77	5.0

(*)+10° 42'.

Feb. 11 . .	4 41 13.95	

(*)+10° 45'.

Feb. 5 . .	4 41 15.63	

(*)+10° 45'.

Jan. 16 . .	4 41 16.97	8.5
Feb. 11 . .	16.94	

Weisse (2) 904, +24° 34'.

Feb. 4 . .	4 41 16.98	8.8

	h. m. s.	Mag.
(*)+10° 45′.		
Jan. 16 . .	4 41 18.64	8.5
Feb. 6 . .	18.51	
11 . .	18.59	
(*)+10° 43′.		
Feb. 6 . .	4 41 21.01	
(*)+10° 45′.		
Jan. 16 . .	4 41 23.62	8.5
(*)−1° 35′.		
Feb. 20 . .	4 41 26.22	9.5
(*)+10° 43′.		
Feb. 11 . .	4 41 30.65	
O. Arg. S. 3383, −26° 32′.		
Jan. 30 . .	4 41 31.32	7.2
Feb. 13 . .	31.43	7.5
(*)+10° 40′.		
Feb. 11 . .	4 41 31.44	
Lacaille 1595, −36° 1′.		
Dec. 30 . .	4 41 46.14	7.2
(*)+1° 15′.		
Feb. 20 . .	4 43 37.46	8.5
Weisse 925, +1° 20′.		
Feb. 20 . .	4 43 45.73	8.2
2 Aurigæ, +36° 29′.		
Jan. 28 . .	4 43 56.18	5.0
Feb. 13 . .	55.87	6.0
Weisse 926, +10° 52′.		
Jan. 16 . .	4 44 0.34	7.6
Lacaille 1611, −35° 19′.		
Jan. 30 . .	4 44 25.60	7.0
(*)−23° 31′.		
Dec. 28 . .	4 45 6.84	8.7
30 . .	6.82	9.0
Lacaille 1617, −35° 20′.		
Jan. 30 . .	4 45 9.58	
Feb. 4 . .	9.56	7.5
Lalande 9106, +43° 52′.		
Jan. 13 . .	4 45 31.41	
(*)+22° 35′.		
Dec. 29 . .	4 45 42.03	9.2
Groombridge 892, +52° 40′.		
Feb. 11 . .	4 45 49.21	6.5
B. A. C. 1496, +74° 4′.		
Feb. 15 . .	4 45 52.24	6.5
(*)+22° 35′.		
Dec. 29 . .	4 46 3.10	9.0

	h. m. s.	Mag.
ω Eridani, −5° 40′.		
Feb. 27 . .	4 46 30.43	5.0
(*)+1° 19′.		
Feb. 5 . .	4 46 38.53	
8 . .	38.60	
B. A. C. 1513, −24° 27′.		
Feb. 13 . .	4 47 7.13	6.5
Lalande 9207, +1° 21′.		
Feb. 6 . .	4 47 12.07	7.5
8 . .	12.06	
B. A. C. 1510, +73° 52′.		
Feb. 20 . .	4 48 18.03	7.0
B. A. C. 1518, +24° 22′.		
Dec. 28 . .	4 48 20.51	7.0
ι Aurigæ, +32° 57′.		
Jan. 16 . .	4 48 31.82	
(*)+30° 1′.		
Dec. 30 . .	4 48 58.02	9.0
o² Orionis, +13° 18′.		
Jan. 30 . .	4 49 3.76	4.5
Feb. 11 . .	3.77	5.0
Weisse (2) 1079, +29° 59′.		
Dec. 30 . .	4 49 11.11	8.5
Lalande 9261, +1° 25′.		
Feb. 8 . .	4 49 17.09	
O. Arg. S. 3488, −26° 55′.		
Feb. 27 . .	4 49 17.20	8.0
(*)+43° 56′.		
Jan. 13 . .	4 49 29.49	
O. Arg. S. 3516, −23° 29′.		
Dec. 20 . .	4 49 59.31	9.0
(*)+1° 22′.		
Dec. 28 . .	4 50 6.31	8.0
Schjellerup 1589, +1° 22′.		
Feb. 5 . .	4 50 51.45	
Dec. 29 . .	51.32	9.0
Weisse 1105, +1° 25′.		
Feb. 8 . .	4 51 21.71	
Weisse (2) 1138, +22° 23′.		
Feb. 15 . .	4 51 26.68	8.5
(*)+60° 15′.		
Feb. 20 . .	4 51 46.58	8.0
β Camelopardi, +60° 15′.		
Feb. 13 . .	4 51 51.50	5.0
20 . .	51.70	

	h. m. s.	Mag.
(*)+38° 36′.		
Jan. 16 . .	4 52 26.41	
28 . .	26.46	
ε Aurigæ, +43° 38′.		
Feb. 6 . .	4 52 38.63	4.5
Lacaille 1666, −35° 4′.		
Feb. 11 . .	4 53 3.23	7.5
(*)+6° 0′.		
Feb. 8 . .	4 54 14.72	
Lalande 9474, −25° 15′.		
Jan. 30 . .	4 54 36.76	7.0
(*)−28° 46′.		
Dec. 30 . .	4 54 37.71	10.0
(*)+45° 36′.		
Feb. 5 . .	4 54 44.76	8.0
(*)+5° 50′.		
Feb. 8 . .	4 54 45.98	
O. Arg. S. 3576, −29° 45′.		
Feb. 20 . .	4 54 52.37	7.7
(*)−31° 36′.		
Dec. 20 . .	4 55 24.58	8.0
(*)−31° 36′.		
Dec. 20 . .	4 55 35.97	9.0
Weisse (2) 1249, +30° 19′.		
Feb. 27 . .	4 55 56.48	7.0
(*)+45° 18′.		
Feb. 11 . .	4 56 43.47	8.5
13 . .	43.37	8.2
11 Orionis, +15° 13′.		
Jan. 30 . .	4 57 8.50	
Dec. 29 . .	8.46	
(*)+45° 11′.		
Jan. 16 . .	4 57 41.17	8.5
Feb. 11 . .	40.86	9.0
13 . .	40.76	8.2
B. A. C. 1562, +26° 16′.		
Feb. 27 . .	4 57 50.58	6.0
(*)+45° 5′.		
Feb. 5 . .	4 57 55.33	9.0
(*)+45° 5′.		
Feb. 5 . .	4 58 2.94	8.0
8 . .	2.67	
11 . .	2.80	7.5
13 . .	2.78	8.2
(*)+45° 5′.		
Feb. 8 . .	4 58 24.95	

	h. m. s.	Mag.
γ¹ Cœli, −35° 39′.		
Dec. 30 . .	4 59 44.05	4.5
B. A. C. 1578, −26° 20′.		
Dec. 28 . .	4 59 59.77	7.0
(*)−23° 48′.		
Feb. 20 . .	5 0 2.90	8.0
l Tauri, +20° 14′.		
Feb. 6 . .	5 0 6.82	5.5
O. Arg. S. 3662, −20° 40′.		
Jan. 16 . .	5 0 54.43	7.5
30 . .	54.45	7.5
Weisse 1397, −12° 38′.		
Feb. 20 . .	5 1 21.90	7.3
(*)+29° 39′.		
Feb. 27 . .	5 1 22.34	8.5
Dec. 29 . .	22.33	
O. Arg. S. 3670, −28° 43′.		
Feb. 19 . .	5 1 24.61	
Weisse (2) 1414, +29° 39′.		
Feb. 27 . .	5 1 27.12	
Dec. 29 . .	27.01	7.7
Weisse 1394, −12° 45′.		
Feb. 5 . .	5 1 48.51	7.8
8 . .	48.50	
O. Arg. S. 3680, −28° 49′.		
Feb. 19 . .	5 1 52.01	
Rumker 2553, +30° 8′.		
Feb. 6 . .	5 2 45.49	
(*)+29° 45′.		
Feb. 1 . .	5 3 2.15	
Weisse (2) 22, +29° 45′.		
Jan. 30 . .	5 3 21.74	6.0
Feb. 27 . .	21.72	6.5
O. Arg. S. 3710, −25° 39′.		
Dec. 30 . .	5 3 31.69	8.3
O. Arg. S. 3720, −35° 32′.		
Dec. 30 . .	5 4 8.64	8.7
Weisse (2) 49, +30° 13′.		
Feb. 4 . .	5 4 17.46	8.5
11 . .	17.34	8.5
13 . .	17.44	8.0
Weisse 56, +4° 10′.		
Feb. 5 . .	5 4 52.59	8.0
(*)−25° 32′.		
Feb. 20 . .	5 4 58.27	9.3
(*)−25° 22′.		
Feb. 20 . .	5 5 33.91	9.5

(*)+30° 17'.

	h. m. s.	Mag.
Feb. 4	5 5 43.53	9.0
Dec. 29	43.56	9.0

WEISSE (2) 111, +30° 15'.

Feb. 4	5 5 55.85	8.0

LACAILLE 1754, −37° 32'.

Feb. 11	5 6 6.38	6.5

LACAILLE 1779, 25° 27'.

Feb. 13	5 6 19.38	7.0

WEISSE 145, +2° 25'.

Feb. 6	5 7 50.17	9.0

WEISSE 153, +2° 26'.

Feb. 6	5 8 14.08	9.0

WEISSE 156, +2° 27'.

Feb. 6	5 8 18.39	

(*)+30° 14'.

Jan. 16	5 8 27.89	8.0
28	27.92	8.0

O. ARG. S. 3790, −27° 27'.

Feb. 5	5 9 1.92	9.0
8	2.09	

(*)+30° 14'.

Jan. 16	5 10 9.69	7.5
28	9.62	7.0

(*)−36° 47'.

Feb. 11	5 10 34.26	8.5

O. ARG. S. 3812, −27° 31'.

Feb. 8	5 10 34.59	
20	34.39	9.0

LACAILLE 1780, −36° 47'.

Feb. 11	5 10 35.97	6.0

B. A. C. 1641, −35° 5'.

Jan. 30	5 11 6.86	5.5
Feb. 1	6.98	

WEISSE (2) 287, +30° 22'.

Feb. 27	5 11 41.20	9.0

WEISSE (2) 296, +26° 7'.

Feb. 4	5 11 43.38	9.0
6	43.31	

o COLUMBÆ, −35° 2'.

Feb. 11	5 12 47.27	5.0

O. ARG. S. 3846, −27° 36'.

Feb. 20	5 12 50.46	9.0
Dec. 30	50.44	

(*)+26° 7'.

Feb. 5	5 13 1.42	9.0

(*)−27° 22'.

	h. m. s.	Mag.
Feb. 20	5 13 24.44	9.5

(*)+37° 34'.

Jan. 16	5 13 44.08	6.5
Feb. 4	44.02	7.0
13	43.96	7.0

(*)−25° 23'.

Feb. 27	5 14 11.99	7.0

B. A. C. 1661, +3° 27'.

Feb. 6	5 15 15.48	7.0
Dec. 29	15.51	8.0

(*)+3° 36'.

Dec. 29	5 15 42.12	9.5

m ORIONIS, +3° 24'.

Feb. 19	5 16 0.12	7.0

(*)+3° 25'.

Feb. 19	5 16 1.17	9.0
Dec. 29	1.16	8.0

B. A. C. 1673, −34° 28'.

Feb. 11	5 16 34.46	5.5

WEISSE (2) 430, +37° 56'.

Jan. 28	5 16 45.18	8.0
Feb. 4	45.02	8.2

WEISSE (2) 431, +37° 56'.

Jan. 28	5 16 45.36	7.5
Feb. 4	45.27	7.7

β TAURI, +28° 30'.

Feb. 5	5 18 4.46	
8	4.48	
Aug. 30	4.52	
Dec. 30	4.40	

O. ARG. S. 3917, −16° 10'.

Feb. 13	5 18 16.01	9.3

O. ARG. S. 3920, −16° 10'.

Feb. 6	5 18 24.36	8.3
13	24.40	8.2

(*)+38° 56'.

Feb. 1	5 18 30.14	

(*)+38° 56'.

Feb. 1	5 18 46.54	

(*)+38° 57'.

Jan. 16	5 18 48.72	9.0

WEISSE (2) 530, +30° 32'.

Feb. 4	5 19 50.44	7.5
5	50.39	

(*)+38° 58'.

Feb. 11	5 20 29.78	9.5
19	30.76	9.5

Uncertainty about the second.

B. A. C. 1662, +85° 7'.

	h. m. s.	Mag.
Feb. 20	5 20 35.40	7.2

B. A. C. 1711, +20° 26'.

Mar. 1	5 21 14.41	7.0

(*)−0° 24'.

Dec. 20	5 21 15.45	8.5

GROOMBRIDGE 980, +38° 13'.

Jan. 13	5 22 31.40	
16	31.56	6.0

(*)+26° 37'.

Feb. 13	5 22 33.05	9.0

(*)−29° 42'.

Feb. 11	5 22 50.02	

(*)−26° 41'.

Feb. 11	5 22 56.08	

O. ARG. N. 5930, +70° 17'.

Feb. 27	5 24 2.71	7.5

O. ARG. S. 4003, −30° 14'.

Feb. 15	5 24 7.30	8.5

χ AURIGÆ, +32° 5'.

Feb. 15	5 24 15.96	4.5

δ ORIONIS, −0° 24'.

Jan. 16	5 25 21.92	
Feb. 11	21.98	
13	22.01	
20	21.97	

120 TAURI, +18° 26'.

Mar. 1	5 25 54.57	

LALANDE 10426, −0° 5'.

Feb. 15	5 25 58.48	7.0

(*)−13° 19'.

Jan. 28	5 25 22.41	8.5
30	22.46	

(*)−5° 27'.

Dec. 20	5 26 44.28	9.0

α LEPORIS, −17° 55'.

Dec. 28	5 26 59.95	

(*)+21° 2'.

Mar. 1	5 27 39.22	7.5

(*)−17° 53'.

Feb. 19	5 27 55.39	7.5

θ¹ ORIONIS, −5° 28'

Feb. 13	5 28 53.50	5.5

θ² ORIONIS, −5° 30'.

Feb. 13	5 28 59.99	5.5

(*)+26° 35'.

	h. m. s.	Mag.
Jan. 28	5 29 24.39	8.5
Feb. 1	24.35	
20	24.29	8.5

LALANDE 10567, −5° 43'.

Feb. 4	5 29 31.76	7.0
11	31.75	6.0

(*)+26° 41'.

Feb. 8	5 29 34.10	

ε ORIONIS, −1° 17'.

Feb. 6	5 29 37.14	
Dec. 29	37.09	

(*)+26° 38'.

Feb. 8	5 29 44.71	

(*)−5° 43'.

Jan. 30	5 29 52.70	5.5
Feb. 4	52.73	6.5

O. ARG. S. 4102, −27° 15'.

Feb. 19	5 30 13.76	8.0

(*)+26° 36'.

Feb. 8	5 30 39.49	

WEISSE (2) 912, +26° 32'.

Feb. 20	5 30 51.25	

B. A. C. 1775, −28° 48'.

Feb. 15	5 31 5.32	

125 TAURI, +25° 50'.

Feb. 11	5 31 40.71	5.5

(*)+26° 35'.

Mar. 1	5 31 52.37	9.5
Dec. 26	52.25	9.3

B. A. C. 1786, −28° 48'.

Feb. 15	5 32 34.48	

B. A. C. 1787, −28° 47'.

Feb. 15	5 32 40.28	6.5

O. ARG. N. 6082, +70° 13'.

Feb. 27	5 32 50.90	8.5

(*)−13° 36'.

Jan. 30	5 32 53.42	
Feb. 4	53.41	8.0

LACAILLE 1913, −27° 17'.

Feb. 19	5 32 56.57	

(*)+21° 16'.

Feb. 20	5 33 20.47	8.0
Mar. 1	20.53	9.0

LALANDE 10650, +38° 7'.

Feb. 6	5 33 23.42	
11	23.38	6.0

	h. m. s.	Mag.
(*)+26° 33'.		
Jan. 28 . .	5 33 30.87	7.0
Feb. 1 . .	30.77	
Lalande 10666, +38° 8'.		
Feb. 6 . .	5 33 51.90	
11 . .	51.90	6.0
(*)+38° 18'.		
Jan. 30 . .	5 34 35.79	7.0
Feb. 6 . .	35.82	
B. A. C. 1803, −32° 42'.		
Feb. 8 . .	5 35 1.50	
(*)+38° 8'.		
Feb. 1 . .	5 35 35.72	
(*)+38° 8'.		
Feb. 1 . .	5 36 2.64	
(*)+38° 8'.		
Feb. 1 . .	5 36 7.04	
(*)+31° 16'.		
Feb. 13 . .	5 36 17.14	
(*)+31° 17'.		
Feb. 13 . .	5 36 17.22	
B. A. C. 1809, −33° 28'.		
Feb. 19 . .	5 36 41.75	
Lacaille 1964, −34° 43'.		
Feb. 20 . .	5 37 35.44	5.5
Lacaille 1964, −34° 1'.		
Feb. 13 . .	5 38 10.66	7.2
O. Arg. S. 4264, −27° 36'.		
Feb. 6 . .	5 39 3.44	6.5
(*)+35° 7'.		
Jan. 28 . .	5 39 12.67	8.5
Lalande 10871, +35° 7'.		
Jan. 28 . .	5 39 14.93	6.0
Feb. 11 . .	14.80	7.0
Weisse (2) 1296, +38° 42'.		
Jan. 30 . .	5 40 23.21	7.0
Feb. 1 . .	23.22	
(*)+29° 42'.		
Feb. 4 . .	5 40 36.70	8.0
5 . .	36.80	
Weisse (2) 1301, +38° 40'.		
Jan. 30 . .	5 40 43.10	7.5
Feb. 1 . .	43.12	
O. Arg. S. 4282, −23° 41'.		
Feb. 19 . .	5 40 53.13	8.5

	h. m. s.	Mag.
Weisse (2) 1325, +29° 41'.		
Feb. 4 . .	5 40 58.81	8.0
5 . .	58.81	
κ Orionis, −9° 43'.		
Feb. 6 . .	5 41 35.62	4.0
(*)+23° 40'.		
Feb. 11 . .	5 41 47.49	9.0
Weisse 1045, −13° 35'.		
Dec. 20 . .	5 41 54.61	
(*)−13° 35'.		
Mar. 1 . .	5 42 3.19	9.0
υ Aurigæ, +37° 16'.		
Feb. 8 . .	5 42 10.38	
13 . .	10.40	5.0
Lacaille 1993, −35° 23'.		
Feb. 19 . .	5 42 43.89	7.0
(*)+9° 50'.		
Feb. 20 . .	5 42 55.62	8.5
(*)+71° 38'.		
Feb. 27 . .	5 42 57.10	9.0
(*)+71° 41'.		
Feb. 27 . .	5 43 29.64	9.0
Lacaille 2015, −32° 50'.		
Feb. 5 . .	5 45 21.98	
19 . .	21.97	
Lacaille 2018, −22° 58'.		
Feb. 11 . .	5 46 2.65	5.5
(*)+26° 27'.		
Feb. 6 . .	5 46 3.29	8.5
8 . .	3.54	
Weisse 1176, −14° 35'.		
Feb. 13 . .	5 46 38.19	8.0
Weisse (2) 1534, +26° 27'.		
Feb. 15 . .	5 47 33.41	8.0
α Orionis, +7° 23'.		
Aug. 30 . .	5 48 8.07	
Weisse 1220, −4° 4'.		
Jan. 20 . .	5 48 49.02	
28 . .	49.05	
(*)+7° 26'.		
Feb. 5 . .	5 48 55.76	9.0
(*)+7° 18'.		
Dec. 28 . .	5 49 12.52	
139 Tauri, +25° 55'.		
Feb. 4 . .	5 49 55.68	

	h. m. s.	Mag.
β Aurigæ, +44° 55'.		
Feb. 8 . .	5 49 59.51	
O. Arg. N. 6356, +72° 23'.		
Feb. 20 . .	5 50 11.66	8.3
(*)+72° 27'.		
Jan. 30 . .	5 50 11.91	8.0
Feb. 1 . .	11.92	
Weisse (2) 1621, +22° 4'.		
Jan. 28 . .	5 50 15.67	8.3
Feb. 13 . .	15.60	8.8
η Leporis, −14° 12'.		
Feb. 6 . .	5 50 29.04	4.5
(*)+19° 44'.		
Feb. 11 . .	5 50 33.71	8.5
(*)+19° 44'.		
Feb. 11 . .	5 50 35.61	9.0
O. Arg. S. 4458, −29° 13'.		
Feb. 19 . .	5 50 36.74	8.0
O. Arg. N. 6362, +72° 37'.		
Jan. 30 . .	5 50 49.39	7.0
Feb. 1 . .	48.96	
(*)+7° 26'.		
Feb. 5 . .	5 50 51.18	9.0
θ Aurigæ, +37° 12'.		
Dec. 20 . .	5 50 51.30	4.5
(*)+20° 10'.		
Feb. 27 . .	5 51 4.30	
Mar. 1 . .	4.21	
36 Aurigæ, +47° 53'.		
Feb. 15 . .	5 51 6.77	7.0
(*)+20° 4'.		
Feb. 27 . .	5 51 34.32	9.5
(*)+19° 46'.		
Jan. 20 . .	5 51 47.76	
Feb. 11 . .	47.55	8.0
(*)+20° 4'.		
Feb. 27 . .	5 52 19.62	8.5
(*)+20° 3'.		
Feb. 27 . .	5 52 27.08	8.0
(*)+36° 20'.		
Mar. 1 . .	5 52 49.15	8.0
(*)+36° 20'.		
Mar. 1 . .	5 52 49.68	9.0
γ Columbæ, −35° 18'.		
Dec. 20 . .	5 52 55.74	6.5

	h. m. s.	Mag.
(*)+23° 16'.		
Feb. 19 . .	5 53 11.48	9.0
(*)+19° 48'.		
Feb. 11 . .	5 53 12.40	8.2
13 . .	12.51	8.2
Lalande 11343, +23° 18'.		
Feb. 19 . .	5 53 13.44	8.0
Weisse 1368, −14° 0'.		
Jan. 30 . .	5 54 6.74	
Lacaille 2090, −34° 22'.		
Feb. 8 . .	5 54 16.58	
(*)+26° 26'.		
Feb. 20 . .	5 54 21.63	7.8
Weisse 1378, −14° 1'.		
Feb. 5 . .	5 54 26.05	
Lacaille 2092, −33° 49'.		
Feb. 15 . .	5 54 27.22	7.5
Lacaille 2094, −35° 22'.		
Feb. 1 . .	5 55 2.97	
μ Orionis, +9° 38'.		
Feb. 6 . .	5 55 13.85	4.5
13 . .	13.88	5.0
Weisse (2) 1795, +26° 30'.		
Jan. 20 . .	5 55 27.84	
28 . .	27.79	
B. A. C. 1935, +37° 58'.		
Feb. 11 . .	5 56 7.32	6.5
Mar. 1 . .	7.41	
Lalande 11471, +35° 24'.		
Jan. 30 . .	5 57 26.90	6.0
Feb. 5 . .	26.96	
(*)+20° 7'.		
Jan. 20 . .	5 57 59.41	
Rumker 1700, +26° 33'.		
Jan. 28 . .	5 58 17.93	7.0
Feb. 1 . .	17.84	
(*)−14° 46'.		
Feb. 15 . .	5 58 31.31	
B. A. C. 1947, +38° 6'.		
Feb. 6 . .	5 58 35.67	6.0
11 . .	35.66	7.0
Weisse 1487, −14° 2'.		
Feb. 8 . .	5 58 39.33	
13 . .	39.26	
Weisse 1500, −14° 7'.		
Feb. 20 . .	5 58 57.90	7.8

	h. m. s.	Mag.
(*)+20° 7'.		
Feb. 19 . .	5 58 59.32	
Lalande 11529, +38° 0'.		
Feb. 6 . .	5 59 16.50	
27 . .	16.56	6.5
Lacaille 2124, −32° 10'.		
Feb. 5 . .	5 59 30.23	
Lacaille 2126, −24° 9'.		
Feb. 11 . .	6 0 24.14	6.0
Lacaille 2130, −29° 44'.		
Feb. 13 . .	6 1 5.30	6.0
(*)−23° 32'.		
Jan. 30 . .	6 1 15.08	7.0
Feb. 1 . .	15.10	
Lacaille 2131, −24° 55'.		
Feb. 5 . .	6 1 25.98	
π^1 Columbæ, −42° 17'.		
Feb. 6 . .	6 2 39.97	5.5
27 . .	39.81	5.5
Lacaille 2151, −36° 17'.		
Feb. 11 . .	6 2 58.85	8.0
Mar. 1 . .	58.74	
Weisse 55, −9° 23'.		
Jan. 20 . .	6 3 40.83	9.0
28 . .	40.81	8.3
Feb. 19 . .	40.73	
(*)+31° 27'.		
Feb. 15 . .	6 3 50.78	8.0
(*)+31° 27'.		
Feb. 15 . .	6 3 59.86	8.5
Weisse 73, −9° 22'.		
Jan. 20 . .	6 4 14.22	8.0
28 . .	14.09	8.3
22 Camelopardi, −9° 22'.		
Feb. 20 . .	6 4 30.80	5.5
(*)+22° 32'.		
Feb. 13 . .	6 4 44.31	9.0
(*)+22° 32'.		
Feb. 13 . .	6 5 2.25	8.5
B. A. C. 1994, −6° 31'.		
Feb. 5 . .	6 5 32.31	
Lacaille 2178, −34° 46'.		
Feb. 8 . .	6 5 53.20	
Lacaille 2177, −27° 1'.		
Feb. 11 . .	6 6 17.16	6.0
19 . .	17.22	

	h. m. s.	Mag.
Lacaille 2183, −33° 50'.		
Mar. 1 . .	6 6 32.28	7.0
Weisse (2) 136, +31° 30'.		
Dec. 20 . .	6 6 49.65	9.0
Lacaille 2180, −26° 0'.		
Feb. 8 . .	6 6 53.26	
(*)+38° 53'.		
Jan. 30 . .	6 7 9.61	
Feb. 6 . .	9.65	
(*)−27° 43'.		
Feb. 15 . .	6 7 38.66	7.0
(*)−27° 43'.		
Feb. 15 . .	6 7 40.13	9.0
(*)−27° 43'.		
Feb. 15 . .	6 7 52.75	8.0
5 Monocerotis, −6° 14'.		
Jan. 30 . .	6 8 30.97	
Feb. 11 . .	30.99	5.0
B. A. C. 2014, +35° 11'.		
Feb. 5 . .	6 8 51.33	
O. Arg. S. 4851, −28° 36'.		
Feb. 19 . .	6 9 22.79	
20 . .	22.79	8.5
Lacaille 2198, −29° 34'.		
Dec. 20 . .	6 9 29.51	8.0
O. Arg. S. 4861, −28° 42'.		
Feb. 8 . .	6 9 50.49	
(*)−28° 10'.		
Mar. 1 . .	6 9 54.01	8.5
B. A. C. 2021, +35° 15'.		
Jan. 30 . .	6 10 11.78	5.5
Feb. 5 . .	11.87	
B. A. C. 2023, +27° 16'.		
Feb. 13 . .	6 10 11.93	6.5
Mar. 12 . .	12.04	
Lalande 11959, +38° 29'.		
Feb. 27 . .	6 10 46.11	7.0
Lacaille 2208, −24° 1'.		
Mar. 1 . .	6 11 50.57	
Lacaille 2211, −26° 52'.		
Dec. 20 . .	6 12 2.78	9.0
Weisse 334, −14° 17'.		
Feb. 11 . .	6 12 17.78	8.0
13 . .	17.72	9.0
Weisse 348, −14° 18'.		
Feb. 11 . .	6 12 40.67	7.5

	h. m. s.	Mag.
(*)−28° 57'.		
Feb. 20 . .	6 13 9.83	
O. Arg. S. 4961, −28° 57'.		
Feb. 20 . .	6 14 6.63	
μ Geminorum, +22° 35'.		
Feb. 27 . .	6 15 5.79	
Mar. 18 . .	5.79	
Aug. 31 . .	5.79	
(*)−29° 33'.		
Feb. 20 . .	6 15 17.37	9.0
(*)−29° 33'.		
Feb. 20 . .	6 15 17.83	8.0
Lalande 12134, +37° 23'.		
Feb. 11 . .	6 15 37.41	7.0
13 . .	37.52	6.5
Lacaille 2232, −29° 36'.		
Feb. 20 . .	6 15 55.11	7.0
Lalande 12173, +38° 7'.		
Feb. 6 . .	6 16 47.88	7.5
13 . .	47.89	6.5
8 Monocerotis, +4° 39'.		
Feb. 27 . .	6 16 52.79	
B. A. C. 2060, +4° 39'.		
Feb. 27 . .	6 16 53.22	
Lalande 12237, +25° 35'.		
Jan. 30 . .	6 18 4.77	7.5
Feb. 5 . .	4.75	
(*)+24° 18'.		
Feb. 1 . .	6 18 19.43	
(*)+24° 18'.		
Jan. 20 . .	6 18 57.12	
O. Arg. N. 6888, +46° 26'.		
Feb. 8 . .	6 19 1.72	
Mar. 18 . .	1.93	
Weisse (2) 533, +24° 20'.		
Feb. 20 . .	6 20 2.01	8.0
(*)+20° 20'.		
Feb. 8 . .	6 20 10.65	8.5
48 Aurigæ, +30° 34'.		
Feb. 27 . .	6 20 12.69	5.0
O. Arg. N. 6886, +75° 48'.		
Feb. 11 . .	6 20 46.02	7.5
13 . .	45.77	7.0
ν Geminorum, +20° 20'.		
Feb. 8 . .	6 21 14.59	4.0

	h. m. s.	Mag.
(*)+25° 31'.		
Feb. 5 . .	6 21 48.55	9.0
15 . .	48.52	9.0
B. A. C. 2100, −25° 46'.		
Mar. 18 . .	6 21 57.04	5.5
(*)−25° 48'.		
Jan. 20 . .	6 22 52.85	
Weisse (2) 631, +25° 30'.		
Feb. 5 . .	6 22 54.14	
15 . .	54.09	8.0
(*)−25° 48'.		
Jan. 20 . .	6 23 50.57	
O. Arg. S. 5176, −25° 48'.		
Jan. 30 . .	6 23 52.91	7.5
B. A. C. 2095, +79° 42'.		
Feb. 16 . .	6 23 59.63	
20 . .	59.36	6.0
(*)−25° 48'.		
Jan. 20 . .	6 24 1.57	
O. Arg. N. 7006, +48° 3'.		
Mar. 18 . .	6 25 23.35	7.5
Groombridge 1183, +38° 10'.		
Feb. 6 . .	6 25 24.47	
11 . .	24.44	6.5
O. Arg. S. 5215, −29° 56'.		
Feb. 19 . .	6 25 36.97	
O. Arg. N. 7009, +49° 59'.		
Feb. 13 . .	6 25 46.28	7.5
(*)+37° 49'.		
Jan. 20 . .	6 26 29.47	
Feb. 1 . .	29.04	8.0
(*)+37° 49'.		
Jan. 20 . .	6 26 29.63	
Feb. 1 . .	29.49	9.5
(*)+61° 7'.		
Feb. 16 . .	6 26 39.16	8.2
Lalande 12507, +24° 44'.		
Feb. 8 . .	6 27 4.33	
15 . .	4.29	8.0
20 . .	4.26	7.7
B. A. C. 2139, +38° 33'.		
Jan. 30 . .	6 27 36.48	5.5
23 Geminorum, +16° 52'.		
Feb. 6 . .	6 28 30.35	
13 . .	30.48	6.5
Weisse (2) 809, +24° 32'.		
Feb. 1 . .	6 28 38.36	
5 . .	38.24	

Date	h. m. s.	Mag.
Weisse (2) 826, +24° 30'.		
Feb. 1	6 29 10.08	
5	10.09	
Weisse (2) 838, +24° 42'.		
Feb. 8	6 29 29.03	
15	29.04	7.5
20	28.96	7.0
Lacaille 2342, −25° 44'.		
Feb. 27	6 29 56.66	7.2
Mar. 18	56.74	
γ Geminorum, +16° 39'.		
Jan. 30	6 30 12.17	
Feb. 5	12.08	
6	12.09	
8	12.14	
Aug. 31	12.10	
O. Arg. S. 5343, (1st *,) −24° 0'.		
Feb. 27	6 30 40.13	
O. Arg. S. 5343, (2d *,) −24° 0'.		
Feb. 11	6 30 42.36	8.0
27	42.23	
Weisse (2) 891, +16° 31'.		
Feb. 8	6 30 51.54	
19	51.58	9.0
24	51.54	9.0
Weisse (2) 909, +24° 42'.		
Feb. 20	6 31 32.95	
Lacaille 2372, −28° 24'.		
Mar. 18	6 32 52.79	7.2
Lalande 12768, +32° 44'.		
Jan. 30	6 33 18.35	7.5
Feb. 16	18.47	7.8
B. A. C. 2185, +10° 0'.		
Feb. 11	6 33 49.09	5.0
13	49.15	5.0
O. Arg. S. 5450, −23° 34'.		
Feb. 15	6 34 11.77	7.0
Lalande 12805, +32° 41'.		
Jan. 30	6 34 15.95	6.0
(*)−28° 20'.		
Mar. 18	6 34 19.59	7.0
Lalande 12798, +37° 17'.		
Feb. 6	6 34 23.86	
O. Arg. S. 5463, −23° 34'.		
Feb. 15	6 34 31.46	8.5
(*)−23° 34'.		
Feb. 15	6 34 36.12	9.0
Weisse (2) 1027, +44° 38'.		
Feb. 20	6 35 18.53	6.5
Mar. 1	18.57	

Date	h. m. s.	Mag.
Lacaille 2392, −28° 8'.		
Feb. 19	6 35 26.85	
Lalande 12849, +36° 15'.		
Feb. 24	6 35 26.94	7.0
Weisse (2) 1044, +36° 12'.		
Feb. 24	6 35 27.83	9.0
Weisse 1069, −14° 21'.		
Feb. 8	6 35 53.25	
16	53.05	7.7
Lacaille 2399, −30° 31'.		
Feb. 13	6 36 9.72	
27	9.59	
(*)−14° 33'.		
Feb. 8	6 36 48.10	
O. Arg. S. 5543, −23° 13'.		
Feb. 19	6 37 5.74	8.0
56 Aurigæ, +43° 43'.		
Feb. 20	6 37 21.91	
Mar. 1	22.02	6.0
(*)+43° 46'.		
Feb. 20	6 37 23.61	8.0
Mar. 1	23.64	9.0
(*)−14° 36'.		
Jan. 30	6 37 56.24	9.0
Feb. 5	56.25	
(*)−14° 34'.		
Jan. 30	6 38 1.75	8.0
Feb. 5	1.70	
Lacaille 5574, −29° 6'.		
Mar. 18	6 38 2.01	6.5
(*)+38° 42'.		
Feb. 6	6 38 25.57	8.2
Lalande 12951, +38° 41'.		
Feb. 6	6 38 27.95	7.2
Weisse 1198, −14° 34'.		
Jan. 30	6 38 45.42	8.5
Feb. 5	45.38	
Weisse (2) 1171, +43° 58'.		
Feb. 16	6 39 25.61	7.7
24	25.76	8.5
Lacaille 2434, −30° 27'.		
Feb. 8	6 40 3.75	
19	3.85	
Weisse 1199, −14° 34'.		
Jan. 30	6 40 6.02	8.5
Feb. 5	6.00	
(*)−23° 36'.		
Feb. 27	6 40 56.93	9.0
Mar. 18	56.73	9.0

Date	h. m. s.	Mag.
Lacaille 2448, (1st *,) −28° 25'.		
Feb. 13	6 42 20.49	8.3
15	20.44	7.0
Lacaille 2448, (2d *,) −28° 25'		
Feb. 13	6 42 21.58	
15	21.48	
Weisse (2) 1254, +43° 48'.		
Feb. 11	6 42 28.32	8.0
16	28.40	8.3
O. Arg. N. 7274, +52° 10'.		
Feb. 24	6 42 41.85	8.5
θ Geminorum, +34° 8'.		
Feb. 27	6 44 13.14	4.0
60 Aurigæ, +38° 37'.		
Jan. 30	6 44 18.21	5.5
O. Arg. S. 5745, −28° 34'.		
Feb. 15	6 44 19.88	
B. A. C. 2244, −27° 10'.		
Feb. 5	6 44 54.05	
19	54.13	7.5
Mar. 1	53.97	
18	54.18	7.5
61 Aurigæ, +38° 40'.		
Jan. 30	6 45 2.02	5.5
O. Arg. S. 5772, −27° 8'.		
Feb. 5	6 45 8.93	
19	8.71	9.0
Mar. 1	8.71	9.0
(*)−28° 33'.		
Feb. 16	6 45 59.15	9.0
(*)−28° 33'.		
Feb. 16	6 45 59.42	
O. Arg. S. 5809, −26° 23'.		
Feb. 13	6 46 22.55	8.3
(*)−28° 30'.		
Feb. 16	6 46 31.91	8.5
(*)−26° 25'.		
Feb. 13	6 46 34.59	8.0
(*)−28° 30'.		
Feb. 16	6 47 10.60	9.0
(*)−28° 30'.		
Feb. 16	6 47 15.29	
(*)−14° 26'.		
Feb. 11	6 47 35.51	8.5
27	35.35	8.3
Lacaille 2496, −24° 17'.		
Feb. 24	6 47 49.24	7.0

Date	h. m. s.	Mag.
2 Canis Majoris, −11° 51'.		
Mar. 1	6 48 8.87	
O. Arg. S. 5864, −24° 4'.		
Feb. 19	6 48 26.38	8.0
(*)−28° 51'.		
Feb. 5	6 49 15.07	
O. Arg. S. 5887, −27° 23'.		
Feb. 15	6 49 21.81	
62 Aurigæ, +38° 15'.		
Feb. 11	6 50 11.06	6.0
13	11.16	5.5
(*)−24° 47'.		
Feb. 24	6 51 15.68	8.0
Weisse 1579, −14° 47'.		
Feb. 16	6 51 54.56	9.0
27	54.57	8.5
Weisse 1587, −14° 47'.		
Feb. 16	6 52 4.33	9.0
27	4.37	9.0
Weisse 1589, −14° 38'.		
Mar. 18	6 52 6.09	
(*)−14° 51'.		
Feb. 16	6 52 13.80	9.0
(*)−30° 44'.		
Mar. 1	6 52 35.92	9.0
ε Canis Majoris, −28° 47'.		
Feb. 5	6 53 31.14	
13	31.19	
(*)−26° 10'.		
Feb. 19	6 53 44.74	9.0
(*)−14° 51'.		
Feb. 16	6 53 57.73	7.5
27	57.76	7.5
Lacaille 2562, −29° 29'.		
Mar. 1	6 54 39.53	7.0
Lacaille 2558, −27° 42'.		
Feb. 24	6 54 43.37	8.5
Lalande 13569, +36° 31'.		
Feb. 11	6 55 19.96	6.0
20	19.81	6.5
Lalande 13601 +35° 43'.		
Feb. 20	6 56 5.44	7.5
Lacaille 2577, −27° 2'.		
Mar. 18	6 56 20.13	6.0
Lacaille 2572, −27° 2'.		
Feb. 19	6 56 21.30	7.0

22 Canis Majoris, −27° 44′.

	h. m. s.	Mag.
Feb. 15 . .	6 56 32.55	

Weisse (2) 1704, +43° 4′.

Feb. 16 . .	6 57 43.77	
24 . .	43.83	8.0

(*)+61° 0′.

Mar. 1 . .	6 57 58.48	7.5
27 . .	58.51	6.0

(*)+61° 0′.

Mar. 1 . .	6 58 5.45	9.0

Weisse (2) 1728, +43° 0′.

Feb. 24 . .	6 58 24.09	9.0
27 . .	24.37	

(*)−30° 2′.

Feb. 11 . .	6 59 20.44	7.0

Piazzi 338, −14° 40′.

Feb. 15 . .	6 59 37.83	

Lacaille 2615, −24° 45′.

Feb. 11 . .	7 1 30.58	5.0

(*)−26° 4′.

Feb. 24 . .	7 2 12.10	9.0

(*)−14° 42′.

Feb. 16 . .	7 2 24.74	

(*)−14° 42′.

Feb. 16 . .	7 2 28.83	

(*)−14° 42′.

Feb. 16 . .	7 2 36.19	

O. Arg. S. 6232, −26° 27′.

Feb. 13 . .	7 2 44.03	7.0

(*)−14° 41′.

Mar. 1 . .	7 3 4.27	8.5

O. Arg. S. 6270, −23° 51′.

Mar. 27 . .	7 3 23.84	6.5

B. A. C. 2326, +82° 39′.

Feb. 20 . .	7 3 33.51	5.0

Lalande 13873, +36° 22′.

Mar. 12 . .	7 3 37.70	
18 . .	37.39	7.0

(*)−14° 33′.

Mar. 1 . .	7 3 54.13	9.0

Lacaille 2641, −24° 59′.

Feb. 19 . .	7 4 21.63	6.0
24 . .	21.55	7.0

O. Arg. S. 6317, −24° 55′.

Feb. 19 . .	7 4 23.59	8.0

(*)−25° 0′.

	h. m. s.	Mag.
Feb. 19 . .	7 4 25.15	9.0

Weisse 93, −14° 36′.

Feb. 16 . .	7 4 25.82	

48 Geminorum, +24° 20′.

Mar. 18 . .	7 4 32.36	

(*)−14° 36′.

Feb. 16 . .	7 5 50.11	

O. Arg. S 6364, −23° 45′.

Feb. 27 . .	7 6 4.08	8.3

Weisse 164, −14° 36′.

Feb. 16 . .	7 6 10.46	
Mar. 1 . .	10.35	8.5

(*)+42° 9′.

Mar. 12 . .	7 6 31.54	7.0

(*)+42° 8′.

Feb. 20 . .	7 6 46.75	7.7

(*)−14° 39′.

Mar. 1 . .	7 7 5.18	8.0

(*)+41° 47′.

Mar. 18 . .	7 9 3.13	8.5

(*)+38° 37′.

Feb. 27 . .	7 9 10.00	7.7

27 Canis Majoris, −26° 7′.

Feb. 19 . .	7 9 12.49	

Weisse 272, −14° 15′.

Feb. 24 . .	7 9 54.23	8.0
Mar. 12 . .	54.31	8.5

Weisse 283, −14° 15′.

Feb. 24 . .	7 10 8.91	

Weisse 290, −14° 39′.

Feb. 16 . .	7 10 18.52	

Weisse 300, −14° 39′.

Feb. 16 . .	7 10 34.87	9.0
Mar. 1 . .	34.79	9.0

Lalande 14120, +36° 55′.

Feb. 20 . .	7 10 39.87	7.0

(*)−14° 38′.

Mar. 1 . .	7 10 51.41	9.0

Weisse 316, −14° 38′.

Feb. 16 . .	7 11 9.58	7.5

(*)−14° 37′.

Mar. 1 . .	7 11 50.31	

δ Geminorum, +22° 13′.

	h. m. s.	Mag.
Feb. 11 . .	7 12 21.47	
Mar. 27 . .	21.46	

Weisse (2) 347, +41° 33′.

Feb. 27 . .	7 12 56.35	7.0

(*)+25° 17′.

Mar. 12 . .	7 13 2.71	8.5
18 . .	2.53	

(*)+25° 14′.

Mar. 12 . .	7 13 11.80	9.0
18 . .	11.56	8.5

Weisse 389, +41° 36′.

Feb. 20 . .	7 14 25.13	7.5
27 . .	25.22	7.5

(*)−14° 38′.

Feb. 16 . .	7 14 28.46	
24 . .	28.47	7.5

(*)−14° 37′.

Feb. 16 . .	7 14 40.70	
24 . .	40.61	

(*)−14° 38′.

Feb. 16 . .	7 15 45.55	

Weisse 500, −14° 37′.

Feb. 24 . .	7 17 17.31	

Weisse 502, −14° 38′.

Feb. 16 . .	7 17 18.07	
24 . .	18.38	

Piazzi 67, +68° 44′.

Mar. 27 . .	7 17 19.73	5.5

(*)−35° 40′.

Feb. 20 . .	7 17 35.05	8.5

Lacaille 2767, −35° 40′.

Feb. 20 . .	7 17 35.25	7.7
Mar. 1 . .	35.00	6.5

(*)−14° 28′.

Mar. 18 . .	7 17 35.58	9.0

(*)−14° 58′.

Feb. 11 . .	7 17 41.86	8.5
Mar. 12 . .	41.82	8.0

s Puppis, −31° 40′.

Feb. 13 . .	7 18 2.51	5.5

O. Arg. S. 6728, −24° 43′.

Feb. 27 . .	7 18 5.69	7.5

(*)−14° 59′.

Mar. 12 . .	7 19 28.99	8.5

(*)−14° 59′.

Mar. 1 . .	7 19 57.01	9.0

(*)−14° 42′.

	h. m. s.	Mag.
Mar. 1 . .	7 20 33.73	9.0

Lalande 14465, +35° 5′.

Mar. 27 . .	7 20 54.51	7.8

Lalande 14484, +38° 26′.

Mar. 18 . .	7 21 22.73	6.5

Weisse (2) 594, +40° 36′.

Feb. 20 . .	7 22 6.26	8.2
27 . .	6.35	7.8

B. A. C. 2472, +28° 11′.

Feb. 11 . .	7 22 34.56	6.5
13 . .	34.51	6.5

Lalande 14619, −14° 43′.

Feb. 24 . .	7 23 26.84	6.0
Mar. 12 . .	27.04	6.0

(*)−24° 54′.

Feb. 11 . .	7 24 38.06	7.5
24 . .	37.94	8.0

Weisse (2) 678, +41° 27′.

Feb. 20 . .	7 24 44.74	8.0
27 . .	44.83	

(*)−24° 0′.

Mar. 27 . .	7 24 56.23	8.5

B. A. C. 2484, −30° 41′.

Feb. 13 . .	7 25 39.38	5.5

Weisse (2) 727, +16° 24′.

Mar. 1 . .	7 25 41.13	

Weisse (2) 728, +40° 39′.

Mar. 18 . .	7 26 19.05	7.0

O. Arg. S. 7026, −28° 3′.

Feb. 27 . .	7 27 48.24	7.5

Weisse (2) 789, +41° 8′.

Feb. 20 . .	7 28 22.41	7.5

Weisse (2) 791, +41° 4′.

Feb. 20 . .	7 28 24.07	8.0

Weisse 871, −14° 40′.

Feb. 24 . .	7 28 57.45	

g Puppis, −25° 49′.

Mar. 1 . .	7 29 7.37	8.0

Groombridge 1343, +38° 33′.

Feb. 11 . .	7 29 21.46	6.5
13 . .	21.41	6.5

O. Arg. S. 7053, −25° 52′.

Feb. 24 . .	7 29 22.21	7.0

Groombridge 1346, +38° 38′.

Feb. 11 . .	7 29 30.01	7.5

Star	Date	h. m. s.	Mag.
Weisse (2) 840, +21° 44'.	Mar. 12 . .	7 29 31.26	
O. Arg. S. 7065, −25° 51'.	Feb. 24 . .	7 29 44.97	9.0
	Mar. 1 . .	44.87	9.0
Groombridge 1356, +38° 38'.	Feb. 13 . .	7 29 59.97	7.5
Lacaille 2864, −25° 52'.	Mar. 1 . .	7 30 10.87	8.0
(*)−14° 43'.	Mar. 1 . .	7 30 36.91	
(*)−14° 14'.	Mar. 18 . .	7 30 37.33	7.5
o Geminorum, +34° 53'.	Feb. 27 . .	7 30 40.55	5.0
(*)−14° 43'.	Mar. 27 . .	7 30 48.64	8.0
Groombridge 1352, +38° 39'.	Feb. 11 . .	7 31 29.42	
	13 . .	29.36	
m Puppis, −25° 5'.	Feb. 27 . .	7 31 53.34	5.0
(*)−14° 43'.	Feb. 24 . .	7 32 18.86	9.0
α Canis Minoris, +5° 33'.	Feb. 20 . .	7 32 28.92	
(*)−14° 43'.	Mar. 18 . .	7 32 37.66	8.5
(*)−14° 42'.	Mar. 27 . .	7 32 52.27	8.0
(*)+21° 44'.	Feb. 16 . .	7 33 30.47	7.5
	Mar. 12 . .	30.57	7.5
(*)−34° 32'.	Feb. 20 . .	7 34 28.02	
(*)−34° 31'.	Feb. 20 . .	7 35 10.42	
Lacaille 2908, −29° 47'.	Mar. 1 . .	7 35 17.85	7.5
O. Arg. S. 7237, −29° 45'.	Mar. 1 . .	7 35 20.49	9.0
Lalande 15006, −23° 59'.	Feb. 11 . .	7 35 21.82	7.0
	Mar. 27 . .	21.65	7.5

Star	Date	h. m. s.	Mag.
Lacaille 2916, −31° 23'.	Feb. 27 . .	7 35 49.81	5.5
O. Arg. S. 7289, −27° 37'.	Feb. 16 . .	7 37 3.22	8.0
Lacaille 2923, −26° 2'.	Apr. 3 . .	7 37 25.26	6.0
Lacaille 2929, −25° 13'.	Feb. 11 . .	7 38 14.29	5.5
Lacaille 2941, −31° 20'.	Feb. 13 . .	7 39 6.61	8.0
4 Puppis, −14° 14'.	Feb. 27 . .	7 39 57.64	4.5
Lacaille 2952, −23° 55'.	Feb. 16 . .	7 40 22.43	6.0
	24 . .	22.40	7.5
B. A. C. 2581, −33° 56'.	Mar. 17 . .	7 40 44.24	
(*)−27° 17'.	Mar. 18 . .	7 40 55.41	9.0
(*)−14° 19'.	Feb. 20 . .	7 41 25.79	8.0
	Mar. 12 . .	25.86	8.0
Rumker 2287, +13° 10'.	Mar. 27 . .	7 42 16.96	6.0
(*)+38° 11'.	Feb. 11 . .	7 42 21.91	9.0
O. Arg. N. 7472, −23° 50'.	Feb. 24 . .	7 42 23.11	9.0
(*)−14° 27'.	Feb. 20 . .	7 42 27.71	8.0
Lalande 15196, +37° 25'.	Feb. 13 . .	7 42 37.82	6.0
(*)−25° 27'.	Feb. 16 . .	7 42 59.47	8.5
(*)+38° 10'.	Feb. 11 . .	7 43 5.02	
	27 . .	5.02	
Lalande 15235, +36° 36'.	Mar. 18 . .	7 43 41.09	7.0
(*)−25° 27'.	Feb. 16 . .	7 43 49.02	8.5
B. A. C. 2590, +79° 49'.	Apr. 8 . .	7 44 13.25	

Star	Date	h. m. s.	Mag.
(*)+0° 26'.	Feb. 20 . .	7 44 13.28	7.0
Rumker 2305, +19° 37'.	Apr. 3 . .	7 44 23.04	6.0
Lalande 15323, +20° 29'.	Mar. 12 . .	7 44 28.18	7.5
(*)+0° 28'.	Mar. 1 . .	7 44 35.63	9.0
φ Geminorum, +27° 6'.	Feb. 13 . .	7 45 32.26	
	27 . .	32.30	
	Mar. 18 . .	32.31	
(*)+0° 29'.	Mar. 1 . .	7 45 58.38	9.5
(*)+35° 12'.	Mar. 27 . .	7 46 13.83	7.0
Weisse 1371, +13° 41'.	Feb. 11 . .	7 46 55.37	7.0
(*)−25° 50'.	Mar. 18 . .	7 48 46.15	7.0
Weisse (2) 1366, +20° 13'.	Feb. 16 . .	7 49 1.18	7.7
	20 . .	1.21	8.0
O. Arg. N. 8445, +47° 9'.	Apr. 3 . .	7 49 6.81	8.0
O. Arg. S. 7636, −27° 46'.	Feb. 24 . .	7 49 7.54	6.5
(*)+12° 3'.	Mar. 12 . .	7 49 16.01	
	27 . .	15.96	
Lacaille 3061, −31° 12'.	Mar. 1 . .	7 49 45.32	
Lacaille 3073, −30° 2'.	Feb. 11 . .	7 50 17.14	6.0
53 Camelopardi, +60° 40'.	Feb. 27 . .	7 50 35.35	5.5
	Apr. 8 . .	34.91	
Weisse 1477, +12° 22'.	Feb. 16 . .	7 50 51.79	
	28 . .	51.74	8.5
(*)+12° 1'.	Mar. 1 . .	7 50 58.81	9.0
B. A. C. 2651, −29° 56'.	Feb. 11 . .	7 51 11.95	
(*)+60° 44'.	Feb. 27 . .	7 51 21.42	8.2

Star	Date	h. m. s.	Mag.
Weisse 1504, +12° 2'.	Mar. 1 . .	7 51 45.98	9.0
(*)−27° 35'.	Feb. 24 . .	7 52 9.32	
Lacaille 3086, −42° 3'.	Mar. 18 . .	7 52 36.25	6.0
	27 . .	36.32	6.0
(*)−27° 35'.	Mar. 12 . .	7 52 39.29	8.0
(*)−37° 16'.	Apr. 3 . .	7 53 21.87	7.5
Lacaille 3093, −36° 41'.	Feb. 16 . .	7 53 51.18	6.5
	20 . .	51.32	6.5
Weisse (2) 1520, +28° 9'.	Feb. 11 . .	7 55 52.04	9.0
Weisse (2) 1521, +28° 9'.	Feb. 11 . .	7 55 52.81	8.5
O. Arg. S. 7865, −25° 43'.	Feb. 16 . .	7 56 51.94	7.0
	20 . .	52.05	7.5
(*)+20° 8'.	Feb. 27 . .	7 56 52.88	7.7
	Mar. 27 . .	52.77	7.7
B. A. C. 2689, −36° 41'.	Mar. 1 . .	7 57 19.43	7.0
	18 . .	19.24	6.0
(*)−25° 40'.	Feb. 20 . .	7 58 16.79	7.8
O. Arg. S. 7882, −24° 16'.	Feb. 24 . .	7 58 38.42	8.0
Weisse (2) 1597, +16° 44'.	Mar. 27 . .	7 58 45.04	
O. Arg. N. 8586, +60° 40'.	Apr. 3 . .	7 58 59.25	8.7
(*)−5° 20'.	Feb. 11 . .	7 59 12.69	
55 Camelopardi, +68° 52'.	Apr. 8 . .	7 59 50.24	5.5
O. Arg. S. 7951, −29° 35'.	Mar. 1 . .	8 0 25.82	
O. Arg. N. 8632, +60° 41'.	Apr. 3 . .	8 0 42.01	8.0
Weisse 1763, +14° 44'.	Mar. 18 . .	8 0 45.68	6.5

Star / Date	h. m. s.	Mag.
Lalande 15868, +42° 0'.		
Feb. 16 . .	8 1 27.99	7.5
27 . .	27.87	
Lalande 15882, +35° 50'.		
Feb. 20 . .	8 1 43.38	7.0
ρ Argus, −23° 56'.		
Feb. 11 . .	8 2 0.54	
Mar. 17 . .	0.54	
Apr. 8 . .	0.56	
Weisse (2) 22, +16° 46'.		
Mar. 18 . .	8 3 32.71	7.5
27 . .	32.56	7.7
Lacaille 3168, −37° 19'.		
Feb. 16 . .	8 3 51.65	5.5
27 . .	51.68	
Carrington 1186, +80° 55'.		
Apr. 3 . .	8 6 9.29	9.0
Carrington 1187, +80° 53'.		
Apr. 3 . .	8 6 12.85	8.8
Lacaille 3192, −29° 32'.		
Feb. 16 . .	8 7 30.34	6.0
20 . .	30.46	6.0
O. Arg. S. 8225, −23° 54'.		
Feb. 27 . .	8 7 42.35	7.0
57 Camelopardi, +62° 54'.		
Mar. 18 . .	8 7 56.82	
(*)−27° 0'.		
Mar. 27 . .	8 9 6.89	8.3
(*)−30° 8'.		
Mar. 27 . .	8 10 31.37	8.5
O. Arg. S. 8291, −24° 52'.		
Apr. 3 . .	8 10 31.80	8.7
O. Arg. S. 8292, −24° 50'.		
Apr. 3 . .	8 10 32.46	8.8
(*)−30° 7'.		
Mar. 27 . .	8 10 35.26	8.5
O. Arg. S. 8295, −30° 32'.		
Feb. 16 . .	8 10 39.83	5.5
20 . .	39.92	6.5
27 . .	39.75	5.5
Lacaille 3241, −25° 54'.		
Mar. 17 . .	8 12 0.54	7.0
O. Arg. S. 8338, −24° 58'.		
Feb. 24 . .	8 12 10.83	7.5
O. Arg. S. 8343, −24° 55'.		
Feb. 24 . .	8 12 14.27	8.0
O. Arg. S. 8345, −24° 58'.		
Feb. 24 . .	8 12 22.94	8.0
B. A. C. 2790, −29° 35'.		
Apr. 8 . .	8 12 41.16	6.0
Lacaille 3258, −36° 59'.		
Feb. 16 . .	8 13 22.65	6.3
20 . .	22.77	6.5
31 Lyncis, +43° 36'.		
Apr. 3 . .	8 13 55.61	5.5
O. Arg. S. 8383, −25° 3'.		
Feb. 27 . .	8 14 9.03	7.5
(*)+24° 25'.		
Mar. 1 . .	8 14 14.21	9.0
18 . .	14.10	8.0
Lacaille 3262, −34° 13'.		
Mar. 12 . .	8 14 28.44	7.0
17 . .	28.50	
Lacaille 3272, −37° 2'.		
Feb. 16 . .	8 14 54.84	6.0
Apr. 8 . .	54.88	6.5
Lacaille 3266, −29° 9'.		
Mar. 27 . .	8 15 59.76	7.0
Lalande 16413, +35° 26'.		
Feb. 20 . .	8 16 45.25	
B. A. C. 2811, −25° 58'.		
Feb. 27 . .	8 17 20.15	6.0
Lalande 16464, +23° 57'.		
Mar. 12 . .	8 17 39.74	7.5
17 . .	39.79	7.7
Lacaille 3293, −27° 22'.		
Mar. 27 . .	8 18 7.71	6.5
Weisse (2) 382, +40° 19'.		
Mar. 1 . .	8 18 8.69	8.5
O. Arg. S. 8484, −30° 23'.		
Feb. 24 . .	8 18 15.18	7.0
(*)−27° 19'.		
Feb. 20 . .	8 19 9.11	
o Ursæ Majoris, +61° 8'.		
Feb. 16 . .	8 19 26.48	5.0
Apr. 17 . .	26.83	
Weisse (2) 429, +19° 44'.		
Apr. 8 . .	8 19 35.70	
(*)+40° 26'.		
Mar. 1 . .	8 20 27.07	9.5
B. A. C. 2827, −23° 37'.		
Apr. 3 . .	8 20 27.09	6.0
(*)+19° 44'.		
Apr. 8 . .	8 20 45.45	
Weisse (2) 458, +24° 58'.		
Mar. 17 . .	8 20 46.26	8.0
B. A. C. 2838, −41° 45'.		
Feb. 27 . .	8 21 18.96	5.5
Mar. 12 . .	18.98	6.0
(*)−24° 33'.		
Feb. 20 . .	8 22 31.80	8.5
24 . .	31.67	8.5
B. A. C. 2844, +53° 33'.		
Feb. 16 . .	8 22 47.12	7.0
v^3 Cancri, +24° 30'.		
Mar. 17 . .	8 23 49.19	6.0
Apr. 17 . .	49.19	
O. Arg. S. 8610, −29° 56'.		
Feb. 27 . .	8 23 59.34	7.5
O. Arg. S. 8620, −29° 53'.		
Feb. 27 . .	8 24 33.17	9.0
Lacaille 3356, −31° 43'.		
Feb. 20 . .	8 25 15.93	5.5
(*)−31° 17'.		
Mar. 12 . .	8 25 47.93	8.0
(*)−31° 10'.		
Feb. 24 . .	8 26 48.25	8.0
(*)−31° 51'.		
Feb. 16 . .	8 27 16.62	7.5
B. A. C. 2883, −31° 6'.		
Mar. 17 . .	8 27 47.11	7.0
Weisse 738, +12° 19'.		
Apr. 3 . .	8 29 23.15	
(*)+20° 1'.		
Feb. 16 . .	8 29 33.72	
(*)+23° 54'.		
Mar. 1 . .	8 29 35.44	9.0
(*)+20° 1'.		
Feb. 16 . .	8 29 59.72	
(*)+20° 1'.		
Feb. 24 . .	8 30 8.49	7.5
(*)+20° 1'.		
Feb. 16 . .	8 30 12.68	
(*)+23° 42'.		
Mar. 1 . .	8 30 18.22	
B. A. C. 2899, +19° 43'.		
Feb. 20 . .	8 30 19.50	7.0
Mar. 18 . .	19.48	5.5
27 . .	19.38	6.0
(*)+20° 39'.		
Mar. 17 . .	8 30 53.01	7.5
Lacaille 3422, −31° 49'.		
Mar. 12 . .	8 31 7.99	7.0
(*)+20° 28'.		
Feb. 27 . .	8 31 8.92	
Weisse 792, +6° 52'.		
Apr. 8 . .	8 31 21.10	8.0
(*)+20° 33'.		
Feb. 27 . .	8 31 34.64	
(*)+20° 1'.		
Feb. 16 . .	8 31 37.99	
(*)+20° 1'.		
Feb. 16 . .	8 31 41.17	
(*)+20° 36'.		
Mar. 17 . .	8 32 3.86	
(*)+20° 33'.		
Feb. 27 . .	8 32 13.69	
Mar. 17 . .	13.72	
(*)+20° 1'.		
Feb. 24 . .	8 32 14.46	7.5
38 Cancri, +20° 14'.		
Apr. 17 . .	8 32 14.47	6.5
(*)+19° 44'.		
Feb. 20 . .	8 32 17.74	7.0
B. A. C. 2914, +20° 1'.		
Feb. 16 . .	8 32 22.92	
24 . .	23.01	
Weisse (2) 790, +20° 1'.		
Feb. 16 . .	8 32 28.73	
24 . .	28.81	
Weisse (2) 793, +20° 1'.		
Feb. 16 . .	8 32 30.04	
(*)+20° 33'.		
Feb. 27 . .	8 32 30.22	
Mar. 17 . .	30.24	
39 Cancri, +20° 28'.		
Feb. 27 . .	8 32 37.54	
Mar. 17 . .	37.60	
(*)+20° 27'.		
Feb. 27 . .	8 32 46.58	
Mar. 17 . .	46.67	
(*)+20° 0'.		
Feb. 16 . .	8 32 50.48	

Date	h. m. s.	Mag.
(*)+19° 48'.		
Feb. 20 . .	8 32 53.13	6.5
Mar. 18 . .	53.09	6.0
Apr. 3 . .	53.03	7.0
ε Cancri, +20° 0'.		
Feb. 16 . .	8 32 59.43	
(*)+19° 45'		
Apr. 3 . .	8 33 6.30	
(*)+19° 47'.		
Apr. 3 . .	8 33 12.58	
(*)+19° 48'.		
Feb. 20 . .	8 33 19.23	
(*)+20° 24'.		
Feb. 27 . .	8 33 28.49	
Mar. 17 . .	28.63	
Weisse (2) 824, +20° 0'.		
Feb. 16 . .	8 33 28.66	
Weisse 885, −14° 14'.		
Mar. 1 . .	8 33 31.02	8.0
12 . .	31.04	8.0
Weisse (2) 829, +20° 23'.		
Feb. 27 . .	8 33 45.41	
Mar. 17 . .	45.47	
(*)+19° 43'.		
Feb. 20 . .	8 33 51.73	7.0
Mar. 18 . .	51.69	
Lacaille 3449, −28° 37'.		
Apr. 8 . .	8 34 15.39	
B. A. C. 2931, +20° 20'.		
Feb. 27 . .	8 34 21.95	
Mar. 17 . .	21.95	
(*)+19° 52'.		
Apr. 15 . .	8 34 39.57	7.7
γ Cancri, +21° 56'.		
Apr. 17 . .	8 35 45.66	5.5
(*)−14° 24'.		
Apr. 14 . .	8 35 58.43	
Weisse (2) 898, +23° 11'.		
Mar. 12 . .	8 36 10.03	
Lalande 17182, +37° 46'.		
Feb. 24 . .	8 37 17.40	
Dorpat 1270, (1st *,) −2° 6'.		
Mar. 1 . .	8 38 46.32	
18 . .	46.33	7.5
27 . .	46.47	7.5
Dorpat 1270, (2d *,) −2° 6'.		
Mar. 1 . .	8 38 46.72	
18 . .	46.74	8.0
27 . .	46.83	7.0

Date	h. m. s.	Mag.
Lacaille 3485, −34° 29'.		
Apr. 15 . .	8 38 52.93	7.0
ε Hydræ, (Comp.,) +6° 54'.		
Apr. 14 . .	8 39 53.21	
17 . .	53.37	
ε Hydræ, +6° 54'.		
Feb. 20 . .	8 39 53.47	
14 . .	53.39	
17 . .	53.47	
Weisse (2) 1012, (1st *,) +11° 38'.		
Feb. 27 . .	8 40 5.16	8.2
Mar. 17 . .	5.14	
Weisse (2) 1012, (2d *,) +11° 38'.		
Feb. 27 . .	8 40 5.24	8.0
Mar. 17 . .	5.27	
Lacaille 3509, −26° 8'.		
Apr. 8 . .	8 40 35.77	7.0
Weisse 1050, +5° 55'.		
Apr. 3 . .	8 41 21.19	9.5
O. Arg. S. 8993, −27° 17'.		
Apr. 15 . .	8 41 48.63	8.3
Lacaille 3511, −26° 7'.		
Apr. 8 . .	8 41 52.42	7.7
Weisse 1077, +5° 56'.		
Apr. 3 . .	8 42 43.33	9.3
(*)+27° 39'.		
Feb. 24 . .	8 43 1.12	7.5
52 Cancri, +16° 29'.		
Feb. 27 . .	8 43 54.07	6.0
c Mali, −27° 14'.		
Mar. 12 . .	8 45 0.95	
18 . .	0.94	4.5
Lacaille 3561, −41° 15'.		
Apr. 8 . .	8 45 2.37	8.0
Weisse (2) 1018, +22° 53'.		
Feb. 16 . .	8 45 2.63	
(*)−35° 23'.		
Apr. 15 . .	8 45 16.63	7.0
B. A. C. 3015, +17° 52'.		
Mar. 27 . .	8 45 52.14	6.0
(*)−32° 6'.		
Mar. 17 . .	8 47 30.95	7.0
(*)−30° 47'.		
Apr. 8 . .	8 47 46.46	8.3
Weisse 1222, +4° 39'.		
Feb. 16 . .	8 48 8.80	7.5

Date	h. m. s.	Mag.
B. A. C. 3031, +14° 41'.		
Mar. 12 . .	8 48 26.89	
18 . .	26.91	6.5
(*)−13° 33'.		
Mar. 27 . .	8 48 48.95	9.0
(*)−37° 47'.		
Mar. 17 . .	8 49 18.36	7.0
(*)−34° 58'.		
Apr. 15 . .	8 49 36.31	8.0
Weisse 1282, −13° 26'.		
Feb. 24 . .	8 50 3.31	8.0
27 . .	3.39	7.0
o^2 Cancri, +16° 5'.		
Mar. 31 . .	8 50 19.38	
Rumker 2702, +54° 17'.		
Apr. 3 . .	8 50 25.74	8.5
14 . .	25.55	8.5
(*)−13° 8'.		
Feb. 24 . .	8 50 43.20	9.0
27 . .	43.18	8.5
ρ Ursæ Majoris, +68° 8'.		
Apr. 17 . .	8 50 47.57	5.0
(*)−29° 57'.		
Mar. 12 . .	8 50 49.64	
Weisse (2) 1252, +21° 40'.		
Feb. 16 . .	8 51 27.80	7.2
Weisse (2) 1253, +23° 14'.		
Mar. 18 . .	8 51 29.98	8.5
Weisse (2) 1258, +23° 17'.		
Mar. 18 . .	8 51 35.63	8.0
O. Arg. N. 9484, +53° 11'.		
Apr. 14 . .	8 51 41.34	9.0
B. A. C. 3076, +6° 9'.		
Feb. 24 . .	8 54 39.39	6.5
Mar. 17 . .	39.44	6.5
Weisse (2) 1322, +21° 30'.		
Feb. 16 . .	8 54 49.27	8.5
B. A. C. 3078, +6° 10'.		
Feb. 24 . .	8 54 57.27	6.5
Mar. 17 . .	57.34	6.5
(*)−35° 9'.		
Mar. 18 . .	8 55 50.14	7.0
(*)−30° 11'.		
Mar. 12 . .	8 55 57.68	8.5
O. Arg. S. 9258, −24° 55'.		
Mar. 27 . .	8 56 2.05	7.2

Date	h. m. s.	Mag.
(*)−27° 19'.		
Apr. 3 . .	8 56 30.06	8.0
ω Hydræ, +5° 37'.		
Mar. 12 . .	8 59 7.65	6.0
B. A. C. 3104, +15° 48'.		
Mar. 31 . .	8 59 8.57	7.0
κ Cancri, +11° 12'.		
Feb. 27 . .	9 0 42.27	
Mar. 17 . .	42.27	
18 . .	42.26	
Apr. 8 . .	42.18	
15 . .	42.23	
17 . .	42.23	
(*)−23° 32'.		
Apr. 7 . .	9 1 49.47	9.0
(*)−31° 22'.		
Apr. 3 . .	9 1 52.46	8.2
78 Cancri, +18° 0'.		
Mar. 31 . .	7 1 55.24	
(*)−27° 38'.		
Apr. 13 . .	9 2 12.81	7.5
20 Hydræ, −8° 15'.		
Feb. 27 . .	9 3 14.15	5.0
Mar. 17 . .	14.16	6.0
(*)−28° 26'.		
Mar. 18 . .	9 3 28.50	7.5
c Ursæ Majoris, +61° 57'.		
Mar. 27 . .	9 4 2.52	
Apr. 8 . .	2.43	5.5
B. A. C. 3127, −25° 16'.		
Apr. 7 . .	9 4 3.50	7.0
Lacaille 3704, −23° 45'.		
Feb. 27 . .	9 4 47.09	
Weisse (2) 79, +20° 33'.		
Mar. 12 . .	9 5 18.29	8.5
(*)−23° 43'.		
Apr. 15 . .	9 6 12.58	9.2
O. Arg. S. 9450, −23° 33'.		
Apr. 7 . .	9 6 13.07	9.5
Weisse (2) 87, +27° 31'.		
Mar. 31 . .	9 6 25.48	
e Ursæ Majoris, +54° 33'.		
Mar. 17 . .	9 6 49.02	5.5
θ Hydræ+2° 52'.		
Mar. 27 . .	9 7 35.93	8.0
Weisse 153, +5° 40'.		
Apr. 14 . .	9 8 49.60	9.0

	h. m. s.	Mag.
Lacaille 3741, −34° 24'.		
Apr. 3 . .	9 9 30.56	7.0
(*)+20° 12'.		
Apr. 8 . .	9 9 15.68	9.5
B. A. C. 3156, −42° 41'.		
Feb. 27 . .	9 9 33.40	5.0
Mar. 18 . .	33.56	5.5
(*)−27° 43'.		
Apr. 7 . .	9 10 15.20	7.0
Lalande 18288, +35° 55'.		
Mar. 27 . .	9 10 24.59	6.0
Lacaille 3751, −28° 20'.		
Apr. 13 . .	9 10 31.33	7.0
14 . .	31.36	6.5
38 Lyncis, +37° 21'.		
Mar. 17 . .	9 10 44.77	5.0
Weisse (2) 198, +18° 16'.		
Apr. 15 . .	9 10 54.35	8.8
O. Arg. S. 9539, −29° 24'.		
Apr. 8 . .	9 11 10.40	9.0
14 . .	10.45	7.5
Weisse (2) 207, +19° 58'.		
Apr. 3 . .	9 11 22.89	8.5
Lalande 18362, +38° 45'.		
Mar. 18 . .	9 12 50.14	6.0
27 . .	50.11	
α Lyncis, +34° 56'.		
Mar. 31 . .	9 13 7.73	
Lacaille 3780, −38° 29'.		
Apr. 15 . .	9 13 24.25	6.5
26 Hydræ, −11° 25'.		
Apr. 8 . .	9 13 30.69	5.5
B. A. C. 3182, (Comp.,) +50° 6'.		
Apr. 16 . .	9 13 39.05	9.0
B. A. C. 3182, +50° 6'.		
Apr. 16 . .	9 13 39.41	6.5
(*)−38° 53'.		
Feb. 27 . .	9 13 46.06	
Apr. 7 . .	46.61	
(*)+19° 57'.		
Apr. 17 . .	9 14 2.92	
27 Hydræ, −8° 59'.		
Mar. 17 . .	9 14 8.15	
Apr. 17 . .	8.21	
(*)−28° 34'.		
Mar. 18 . .	9 14 48.96	

	h. m. s.	Mag.
(*)−28° 48'.		
Apr. 14 . .	9 15 5.18	
h Mali, −25° 25'.		
Mar. 31 . .	9 15 44.24	6.0
Lacaille 3796, −30° 15'.		
Mar. 27 . .	9 15 52.98	7.5
Weisse 325, +8° 13'.		
Apr. 8 . .	9 16 34.37	7.5
(*)−34° 41'.		
Apr. 16 . .	9 16 41.16	7.0
Weisse 337, −14° 55'.		
Apr. 7 . .	9 16 46.95	8.5
Lacaille 3802, −29° 58'.		
Apr. 13 . .	9 17 13.03	7.5
(*)−38° 48'.		
Apr. 15 . .	9 17 20.66	8.0
Lacaille 3810, −34° 40'.		
Mar. 27 . .	9 18 27.78	6.5
O. Arg. S. 9692, −28° 25'.		
Mar. 31 . .	9 19 39.75	8.5
(*)−8° 2'.		
Apr. 3 . .	9 20 1.45	8.8
Lacaille 3834, −33° 20'.		
Mar. 27 . .	8 21 8.76	6.5
α Hydræ, −8° 6'.		
Mar. 17 . .	9 21 11.96	
(*)−27° 49'.		
Apr. 8 . .	9 21 46.56	
Lacaille 3838, −33° 13'.		
Mar. 27 . .	9 21 47.09	6.5
B. A. C. 3235, −34° 25'.		
Apr. 13 . .	9 22 14.40	6.0
14 . .	14.52	6.5
Lacaille 3848, −34° 19'.		
Apr. 13 . .	9 22 50.15	7.0
14 . .	50.08	6.5
Weisse 488, −12° 9'.		
Apr. 3 . .	9 23 33.31	
Weisse 498, −12° 9'.		
Apr. 7 . .	9 24 1.63	9.5
θ Ursæ Majoris, +52° 16'.		
Mar. 12 . .	9 24 8.60	
Lacaille 3874, −32° 48'.		
Apr. 8 . .	9 24 13.87	7.7

	h. m. s.	Mag.
λ Leonis, +23° 32'.		
Mar. 31 . .	9 24 17.94	
O. Arg. S. 8789, −29° 34'.		
Mar. 17 . .	9 24 32.13	6.0
O. Arg. N. 8789, +70° 13'.		
Apr. 15 . .	9 25 15.20	7.5
(*)−36° 7'.		
Apr. 17 . .	9 25 21.38	8.5
ψ Argus, −39° 54'.		
Apr. 16 . .	9 25 34.83	
26 Ursæ Majoris, +52° 38'.		
Mar. 18 . .	9 25 54.19	
(*)−35° 22'.		
Apr. 14 . .	9 26 7.52	6.0
(*)−36° 10'.		
Mar. 27 . .	9 26 9.92	6.5
10 Leonis Minoris, +36° 59'.		
Apr. 3 . .	9 26 15.13	6.0
13 . .	14.97	5.5
(*)−28° 29'.		
Apr. 7 . .	9 26 24.73	
O. Arg. S. 9856, −31° 26'.		
Mar. 27 . .	9 28 26.36	7.0
O. Arg. S. 9888, −20° 25'.		
Mar. 31 . .	9 29 39.16	9.0
Weisse (2) 639, +17° 25'.		
Apr. 3 . .	9 30 47.62	8.5
(*)−35° 28'.		
Apr. 7 . .	9 30 47.98	
O. Arg. S. 9914, −23° 54'.		
Mar. 27 . .	9 30 58.17	
(*)+21° 46'.		
Apr. 14 . .	9 31 53.56	8.0
(*)+25° 1'.		
Mar. 31 . .	9 31 56.09	9.0
O. Arg. S. 9938, −23° 51'.		
Apr. 7 . .	9 31 57.38	9.0
O. Arg. S. 9956, −23° 50'.		
Apr. 16 . .	9 32 49.12	9.0
B. A. C. 3206, −39° 2'.		
Mar. 17 . .	9 33 25.34	6.5
18 . .	25.30	6.5
(*)−39° 0'.		
Apr. 14 . .	9 33 50.10	7.5

	h. m. s.	Mag.
O. Arg. S. 10034, −23° 38'.		
Apr. 3 . .	9 36 6.52	8.5
(*)−23° 42'.		
Apr. 7 . .	9 36 19.89	9.0
(*)−36° 23'.		
Apr. 13 . .	9 36 33.55	7.5
(*)−35° 0'.		
Mar. 27 . .	9 37 0.53	7.5
Lacaille 3983, −34° 54'.		
Mar. 27 . .	9 37 12.37	6.0
Lalande 19134, +9° 28'.		
Mar. 17 . .	9 38 22.09	
ε Leonis, +24° 22'.		
Apr. 14 . .	9 38 28.11	
15 . .	28.08	
21 . .	28.06	
Lacaille 3996, −38° 58'.		
Apr. 3 . .	9 38 57.34	6.0
Weisse (2) 817, +27° 46'.		
Apr. 8 . .	9 39 23.78	8.0
Weisse (2) 819, +16° 10'.		
Apr. 13 . .	9 39 24.47	8.5
(*)+10° 58'.		
Apr. 7 . .	9 39 39.20	9.0
B. A. C. 3339, +2° 23'.		
Mar. 31 . .	9 39 41.09	6.5
(*)−37° 13'.		
Apr. 14 . .	9 40 5.21	8.0
24 . .	5.06	7.0
(*)−37° 17'.		
Apr. 14 . .	9 40 13.54	8.0
24 . .	13.48	7.0
Weisse (2) 837, +27° 44'.		
Apr. 22 . .	9 40 27.92	9.0
Weisse 871, +10° 59'.		
Apr. 7 . .	9 40 43.84	8.0
(*)−10° 56'.		
Apr. 15 . .	9 41 4.57	9.2
(*)−24° 37'.		
Apr. 16 . .	9 41 12.91	9.5
Brisbane 2657, −40° 4'.		
Apr. 8 . .	9 41 18.63	8.0
Lacaille 4016, −38° 43'.		
Mar. 27 . .	9 41 28.00	7.0
Apr. 3 . .	28.28	

Date	h. m. s.	Mag.
WEISSE 894, $-10°$ 56′.		
Apr. 15 . .	9 41 29.26	8.5
WEISSE (2) 856, $+37°$ 20′.		
Mar. 17 . .	9 41 35.88	6.5
Apr. 13 . .	35.84	6.5
WEISSE (2) 867, $+18°$ 40′.		
Apr. 22 . .	9 41 54.29	8.0
O. ARG. S. 10122, $-24°$ 35′.		
Apr. 24 . .	9 42 22.78	7.5
LACAILLE 4021, $-32°$ 38′.		
Apr. 21 . .	9 42 58.90	6.0
4 SEXTANTIS, $+4°$ 56′.		
Apr. 21 . .	9 43 44.10	5.0
(*)$-38°$ 59′.		
Apr. 7 . .	9 43 44.19	9.0
8 . .	44.11	9.0
21 LEONIS, $+12°$ 26′.		
Apr. 16 . .	9 43 49.51	
B. A. C. 3367, $-35°$ 40′.		
Apr. 3 . .	9 44 21.15	6.0
17 LEONIS MINORIS, $+38°$ 30′.		
Mar. 17 . .	9 44 28.28	
31 . .	28.38	
(*)$-35°$ 38′.		
Apr. 3 . .	9 45 1.04	
μ LEONIS, $+26°$ 37′.		
Mar. 27 . .	9 45 21.98	
May 4 . .	21.99	
LACAILLE 4046, $-30°$ 53′.		
Apr. 15 . .	9 46 21.36	8.0
WEISSE (2) 966, $+28°$ 19′.		
Apr. 13 . .	9 46 30.45	7.5
(*)$+14°$ 57′.		
Apr. 14 . .	9 46 33.68	8.0
WEISSE (2) 978, $+38°$ 1′.		
Mar. 17 . .	9 47 0.06	
(*)$-39°$ 23′.		
Apr. 16 . .	9 47 25.10	8.0
(*)$+44°$ 33′.		
Apr. 24 . .	9 47 34.86	9.0
O. ARG. N. 10356, $+54°$ 52′.		
Apr. 8 . .	9 47 38.01	7.0
17 . .	38.24	5.5
WEISSE (2) 1011, $+7°$ 43′.		
Apr. 13 . .	9 47 47.34	8.2
21 . .	47.27	9.0

Date	h. m. s.	Mag.
(*)$-37°$ 47′.		
Apr. 22 . .	9 47 56.38	7.0
WEISSE (2) 1003, $+44°$ 35′.		
Apr. 7 . .	9 48 24.56	
14 . .	24.69	7.0
17 . .	25.02	8.5
(*)$-27°$ 48′.		
Apr. 21 . .	9 48 31.84	9.0
WEISSE (2) 1030, $+28°$ 44′.		
Apr. 24 . .	9 49 26.60	7.0
(*)$-32°$ 46′.		
Apr. 3 . .	9 49 32.54	7.5
O. ARG. S. 12227, $-27°$ 52′.		
Apr. 15 . .	9 50 14.17	8.8
(*)$-38°$ 55′.		
Mar. 18 . .	9 50 30.22	
O. ARG. S. 10236, $-29°$ 31′.		
Mar. 17 . .	9 50 48.84	8.5
27 . .	48.67	8.3
B. A. C. 3409, $+30°$ 17′.		
Apr. 3 . .	9 52 6.06	5.5
WEISSE (2) 1096, $+18°$ 44′.		
Mar. 31 . .	9 52 14.52	9.0
(*)$-38°$ 56′.		
Apr. 8 . .	9 52 31.57	8.5
(*)$-35°$ 38′.		
Apr. 14 . .	9 55 1.83	
(*)$-36°$ 42′.		
Mar. 17 . .	9 55 36.45	8.5
(*)$+13°$ 30′.		
Mar. 18 . .	9 56 38.69	8.0
Apr. 13 . .	38.70	8.3
16 . .	38.76	
LACAILLE 4115, $-29°$ 56′.		
Apr. 3 . .	9 57 0.68	6.5
(*)$-38°$ 50′.		
Apr. 8 . .	9 57 36.89	8.0
(*)$-38°$ 39′.		
Mar. 17 . .	9 58 15.55	7.0
27 . .	15.51	7.0
LACAILLE 4120, $-32°$ 37′.		
Mar. 31 . .	9 58 39.33	7.0
WEISSE 1243, $+13°$ 36′.		
Apr. 14 . .	9 58 39.42	8.0
(*)$+21°$ 13′.		
Apr. 17 . .	9 58 49.79	8.5

Date	h. m. s.	Mag.
LACAILLE 4135, $-39°$ 20′.		
Apr. 22 . .	9 58 55.25	6.5
WEISSE (2) 1257, $+30°$ 6′.		
Apr. 3 . .	9 59 40.76	6.5
B. A. C. 3448, $-34°$ 14′.		
Apr. 8 . .	9 59 45.84	
WEISSE (2) 1259, $+39°$ 16′.		
Apr. 21 . .	9 59 50.68	
14 SEXTANTIS, $+6°$ 14′.		
Apr. 14 . .	9 59 59.51	
η LEONIS, $+17°$ 25′.		
Apr. 17 . .	10 0 10.64	5.0
WEISSE 1279, $+13°$ 40′.		
Apr. 22 . .	10 0 37.22	8.0
A LEONIS, $+10°$ 38′.		
Mar. 27 . .	10 1 0.31	5.0
α LEONIS, $+12°$ 36′.		
Mar. 18 . .	10 1 26.82	
WEISSE (2) 1321, $+20°$ 59′.		
Apr. 17 . .	10 2 24.25	9.0
16 SEXTANTIS, $+6°$ 48′.		
Mar. 31 . .	10 2 26.05	7.0
(*)$-32°$ 13′.		
Apr. 8 . .	10 3 6.04	9.0
(*)$+13°$ 8′.		
Mar. 27 . .	10 3 39.71	9.5
WEISSE (2) 53, $+30°$ 48′.		
Apr. 13 . .	10 4 17.96	8.0
WEISSE (2) 49, $+36°$ 53′.		
Mar. 17 . .	10 4 20.20	7.0
LALANDE 19854, $+32°$ 10′.		
Apr. 3 . .	10 5 54.94	8.5
WEISSE 75, $+12°$ 48′.		
Apr. 13 . .	10 6 26.73	8.5
WEISSE 76, $+12°$ 0′.		
Apr. 14 . .	10 6 29.87	8.0
(*)$-37°$ 25′.		
Apr. 17 . .	10 6 33.33	7.8
(*)$+12°$ 0′.		
Mar. 31 . .	10 6 41.16	9.0
Apr. 8 . .	41.05	9.2
14 . .	41.29	9.0
LALANDE 19869, $+32°$ 5′.		
Apr. 3 . .	10 6 42.07	7.3

Date	h. m. s.	Mag.
LACAILLE 4152, $-31°$ 51′.		
Apr. 15 . .	10 7 1.55	7.0
WEISSE 94, $+12°$ 22′.		
Apr. 21 . .	10 7 2.36	8.0
WEISSE 96, $+12°$ 22′.		
Apr. 21 . .	10 7 14.16	9.0
(*)$-29°$ 45′.		
Apr. 22 . .	10 7 34.16	8.0
21 SEXTANTIS, $-7°$ 20′.		
Apr. 24 . .	10 7 39.68	6.0
LACAILLE 4196, $-32°$ 23′.		
Apr. 21 . .	10 7 40.14	4.5
WEISSE 115, $+12°$ 20′.		
Apr. 17 . .	10 8 13.40	7.7
(*)$-30°$ 10′.		
Mar. 17 . .	10 8 50.03	7.0
(*)$-30°$ 27′.		
Apr. 8 . .	10 9 51.24	
WEISSE (2) 197, $+38°$ 9′.		
Mar. 31 . .	10 10 42.54	
Apr. 3 . .	42.59	8.0
LALANDE 19981, $+11°$ 56′.		
Mar. 17 . .	10 10 52.72	8.0
Apr. 7 . .	52.82	
WEISSE 204, $+31°$ 17′.		
Apr. 13 . .	10 11 8.57	9.0
γ^1 LEONIS, $+20°$ 30′.		
Apr. 22 . .	10 12 48.15	
24 . .	48.14	
LACAILLE 4242, $-36°$ 8′.		
Apr. 8 . .	10 12 53.14	6.5
WEISSE 204, $-3°$ 34′.		
Apr. 15 . .	10 12 53.61	
LACAILLE 4253, $-39°$ 2′.		
Mar. 27 . .	10 14 27.51	7.0
(*)$-3°$ 5′.		
Apr. 7 . .	10 15 45.69	
(*)$-3°$ 5′.		
Mar. 31 . .	10 15 52.12	
(*)$+2°$ 8′.		
Apr. 17 . .	10 17 29.87	
(*)$+2°$ 6′.		
Apr. 17 . .	10 17 42.69	
(*)$-10°$ 8′.		
Apr. 14 . .	10 17 43.86	

Star	Date	h. m. s.	Mag.
(*)−10° 8′.	Apr. 14	10 17 54.24	
44 Leonis, +9° 27′.	Apr. 13	10 18 24.10	5.5
Lacaille 4287, −37° 38′.	Apr. 7	10 19 14.06	7.0
Lacaille 4286, −28° 31′.	Mar. 27	10 19 24.31	6.0
Weisse 315, +4° 36′.	Mar. 17	10 19 24.41	
	31	24.33	
(*)−10° 8′.	Apr. 21	10 19 41.09	9.8
B. A. C. 3566, −5° 44′.	Apr. 15	10 19 46.51	7.0
μ Hydræ, −16° 9′.	Apr. 8	10 19 48.31	4.5
26 Sextantis, −0° 19′.	Apr. 24	10 19 58.58	6.0
(*)+4° 34′.	Mar. 17	10 20 22.83	
O. Arg. N. 10861, +64° 56′.	Apr. 22	10 21 22.13	6.5
Rumker 3203, +16° 26′.	Apr. 13	10 21 27.93	7.5
	21	28.08	
(*)−7° 36′.	Mar. 27	10 21 57.54	8.5
	May 4	57.59	8.5
Weisse 375, +10° 50′.	Apr. 15	10 22 18.99	7.0
(*)+37° 43′.	Apr. 13	10 23 3.22	8.5
O. Arg. S. 10666, −29° 52′.	Mar. 31	10 23 20.37	9.0
Rumker 3211, +12° 18′.	Apr. 8	10 23 31.78	8.2
δ Antliæ, −29° 56′.	Mar. 31	10 23 36.42	
B. A. C. 3603, −6° 58′.	Apr. 14	10 24 28.43	6.0
Weisse 412, +10° 44′.	Apr. 15	10 24 30.03	7.7
O. Arg. N. 10911, +44° 52′.	Apr. 7	10 24 43.56	
	17	43.92	
Lacaille 4317, −25° 48′.	Apr. 22	10 24 45.76	6.5
Weisse 425, +10° 6′.	Apr. 24	10 25 17.69	8.2
Lalande 20419, −7° 31′.	May 4	10 25 44.19	8.0
ρ Leonis, +9° 59′.	Mar. 17	10 25 57.89	
	27	57.92	
	May 11	57.92	
(*)−33° 48′.	Apr. 22	10 26 7.47	8.5
Weisse 513, +15° 35′.	Apr. 8	10 26 32.67	8.5
Weisse 456, −3° 35′.	Apr. 24	10 27 1.76	
(*)−4° 11′.	Apr. 14	10 27 22.08	9.0
	15	21.86	8.5
48 Leonis, +7° 37′.	Apr. 7	10 28 1.21	
	May 5	0.95	
(*)−37° 26′.	Apr. 17	10 28 43.76	7.0
35 Leonis Minoris, +37° 1′.	Apr. 8	10 28 53.23	6.0
	May 5	53.35	
(*)−3° 56′.	Mar. 31	10 28 58.24	9.0
(*)−29° 40′.	Apr. 14	10 29 8.72	8.0
	18	8.53	9.0
(*)−35° 42′.	Apr. 22	10 29 39.93	9.2
Weisse 517, −4° 8′.	Mar. 27	10 29 55.37	9.0
	Apr. 13	55.52	8.5
	21	55.42	
Weisse 520, −11° 31′.	May 4	10 30 3.88	
Weisse 526, −9° 8′.	May 4	10 30 14.12	9.0
O. Arg. S. 10775, −28° 44′.	Apr. 14	10 31 41.09	
38 Leonis Minoris, +38° 35′.	Apr. 14	10 31 41.05	
	May 5	41.17	
50 Leonis, +38° 35′.	May 11	10 31 56.04	
φ³ Hydræ, −16° 11′.	Apr. 17	10 32 14.86	5.5
	22	14.89	5.5
O. Arg. N. 11017, +47° 32′.	Apr. 7	10 32 21.58	
	8	21.61	6.5
B. A. C. 3649, +9° 31′.	Apr. 21	10 32 53.52	8.5
Weisse 600, +14° 40′.	Apr. 17	10 34 42.22	7.0
33 Sextantis, −1° 2′.	Apr. 22	10 34 47.12	
B. A. C. 3661, +32° 23′.	Mar. 31	10 34 53.96	
(*)−35° 50′.	Mar. 27	10 34 55.13	9.0
	Apr. 24	55.13	8.5
Weisse (2) 693, +37° 12′.	Apr. 14	10 35 0.57	8.0
Weisse 637, −3° 42′.	Apr. 8	10 36 27.93	
	15	27.90	8.3
(*)+4° 57′.	Apr. 7	10 36 40.27	8.0
(*)+4° 55′.	Apr. 7	10 36 51.69	8.0
(*)−36° 16′.	Apr. 21	10 37 2.97	
Lacaille 4419, −31° 3′.	Apr. 17	10 37 14.32	6.5
(*)+36° 22′.	Apr. 22	10 37 22.18	9.5
41 Ursæ Minoris, +58° 7′.	Apr. 13	10 38 12.48	5.5
(*)−36° 10′.	Mar. 27	10 38 20.36	8.0
Weisse (2) 774, +36° 22′.	Apr. 14	10 38 42.14	8.0
Weisse (2) 774, +36° 22′.	Apr. 14	10 38 54.04	8.0
k Leonis, +14° 54′.	Apr. 8	10 39 31.99	5.5
Weisse 703, +7° 2′.	Mar. 31	10 40 33.52	8.0
	Apr. 14	33.39	7.0
Weisse (2) 818, +38° 16′.	Mar. 27	10 41 0.06	6.0
	Apr. 7	0.29	
(*)−35° 26′.	Apr. 13	10 41 0.99	7.7
(*)−35° 26′.	Apr. 24	10 41 36.50	7.0
Weisse (2) 830, +36° 37′.	Apr. 22	10 41 56.57	9.0
(*)+10° 28′.	Apr. 15	10 42 14.92	
	17	14.95	8.5
l Leonis, +11° 14′.	Apr. 8	10 42 25.38	
	14	25.40	
	21	25.43	
(*)−29° 46′.	Apr. 15	10 42 55.61	
	May 4	55.50	9.0
O. Arg. S. 10907, −29° 56′.	Apr. 24	10 43 5.29	
42 Ursæ Majoris, +60° 1′.	May 11	10 43 11.97	5.5
	15	12.13	5.5
(*)−37° 8′.	May 5	10 43 13.39	7.0
O. Arg. S. 10912, −29° 51′.	Apr. 15	10 43 16.19	
(*)−29° 17′.	Apr. 17	10 43 27.92	8.3
	May 4	27.79	
B. A. C. 3719, −33° 22′.	May 5	10 43 54.23	7.0
B. A. C. 3726, +1° 44′.	May 15	10 45 33.10	6.5
O. Arg. S. 10936, −29° 22′.	Apr. 13	10 46 2.45	9.0
	17	2.38	8.5
O. Arg. S. 10941, −29° 28′.	Apr. 13	10 46 20.79	7.5
	17	20.80	8.0
O. Arg. S. 10944, −25° 52′.	Apr. 24	10 46 29.08	8.5

Date	h. m. s.	Mag.
(*)−29° 37′.		
Apr. 17	10 46 47.03	8.5
(*)−0° 39′.		
Mar. 27	10 47 1.36	9.0
May 4	1.34	8.3
Weisse (2) 944, +37° 28′.		
May 11	10 47 26.80	6.5
B. A. C. 3737, +6° 32′.		
Apr. 21	10 48 0.51	5.5
May 4	0.58	7.0
(*)−0° 41′.		
Apr. 7	10 48 38.56	
14	38.54	8.5
O. Arg. N. 4258, +47° 54′.		
Apr. 21	10 49 28.85	9.0
22	28.82	9.0
Lacaille 4519, −31° 6′.		
Apr. 24	10 49 42.57	6.5
Weisse (2) 1017, +22° 35′.		
Apr. 13	10 51 37.50	8.0
Lacaille 4535, −41° 21′.		
Apr. 14	10 52 2.62	6.5
Lalande 21081, +36° 48′.		
Mar. 27	10 52 17.00	6.0
(*)−34° 11′.		
Apr. 17	10 52 57.73	7.5
(*)−34° 12′.		
Apr. 7	10 53 15.15	8.0
Lacaille 4543, −34° 27′.		
Apr. 7	10 53 41.13	7.0
Carrington 1637, +81° 45′.		
Apr. 15	10 53 52.90	8.0
May 4	53.32	
Weisse 957, +4° 26′.		
May 5	10 53 54.39	7.8
β Ursæ Majoris, +57° 6′.		
Apr. 21	10 53 58.97	
22	58.90	4.0
Lacaille 4553, −42° 23′.		
Apr. 14	10 54 16.72	6.0
(*)+9° 20′.		
Apr. 13	10 55 34.36	8.7
19	34.42	8.7
α Ursæ Majoris, +62° 27′.		
July 16	10 55 40.95	
Lacaille 4556, −37° 8′.		
Apr. 14	10 55 55.43	6.0

Date	h. m. s.	Mag.
Weisse (2) 1112, +36° 54′.		
May 11	10 56 13.35	7.0
B. A. C. 3779, −0° 2′.		
Apr. 8	10 56 35.61	6.0
Weisse 1006, +9° 26′.		
Apr. 21	10 56 57.55	
Lacaille 4570, −26° 48′.		
May 4	10 57 0.53	
B. A. C. 3783, −31° 14′.		
Mar. 27	10 57 4.44	5.5
Weisse 1025, +13° 23′.		
Apr. 22	10 57 43.62	6.5
(*)+34° 31′.		
Apr. 13	10 58 13.96	9.0
O. Arg. S. 11115, −29° 43′.		
Apr. 15	10 58 58.25	7.5
(*)+11° 0′.		
Apr. 7	10 59 26.63	9.0
O. Arg. S. 11114, −29° 43′.		
Apr. 17	10 59 28.21	7.0
Weisse 1060, +13° 25′.		
Apr. 22	10 59 42.73	8.0
Weisse 1075, +10° 54′.		
Apr. 14	11 0 25.80	8.0
(*)−28° 58′.		
Mar. 27	11 0 58.34	8.5
Apr. 8	58.48	9.0
Weisse 1090, +10° 54′.		
Apr. 14	11 1 1.59	9.0
(*)−40° 14′.		
Apr. 21	11 1 54.19	8.5
B. A. C. 3811, +37° 1′.		
Apr. 7	11 2 9.67	6.5
13	9.51	
(*)−28° 52′.		
Mar. 27	11 3 41.27	8.0
Apr. 8	41.40	9.0
Lacaille 4624, −28° 52′.		
Mar. 27	11 3 42.11	7.5
Apr. 8	42.25	8.5
(*)−25° 11′.		
Apr. 15	11 4 56.53	8.5
Weisse (2) 74, +36° 32′.		
Apr. 14	11 5 27.56	8.0
17	27.56	7.5

Date	h. m. s.	Mag.
Weisse (2) 80, +36° 32′.		
Apr. 14	11 5 37.57	8.0
17	37.57	6.5
(*)+59° 22′.		
Apr. 13	11 5 43.88	9.5
(*)+68° 15′.		
May 4	11 6 14.96	9.5
Weisse (2) 98, +21° 18′.		
Apr. 22	11 6 35.89	8.8
(*)+68° 14′.		
May 4	11 7 0.34	9.0
δ Leonis, +21° 14′.		
Apr. 24	11 7 11.55	
May 15	11.59	
July 26	11.50	
(*)+68° 18′.		
May 4	11 8 1.37	9.0
(*)+59° 21′.		
Apr. 21	11 8 3.83	9.0
(*)−26° 35′.		
Mar. 27	11 8 24.14	7.5
Lacaille 4667, −38° 46′.		
May 5	11 8 58.38	
11	58.44	
(*)−37° 43′.		
Apr. 15	11 9 4.08	9.5
(*)+12° 20′.		
Apr. 8	11 9 12.05	9.2
14	12.32	9.0
O. Arg. N. 11619, +69° 54′.		
May 10	11 9 14.26	9.2
Lacaille 4669, −37° 32′.		
Apr. 13	11 9 22.49	7.0
15	22.39	
22	22.33	7.0
Lacaille 4672, −38° 37′.		
May 5	11 9 40.30	
11	40.26	
Rumker 3497, +61° 0′.		
May 15	11 9 45.21	
Weisse 137, −2° 56′.		
May 17	11 10 3.26	
(*)−37° 36′.		
Apr. 15	11 10 40.98	8.0
Lacaille 4680, −37° 41′.		
Apr. 24	11 10 41.87	6.0
Weisse (2) 182, +36° 9′.		
Apr. 21	11 10 56.42	

Date	h. m. s.	Mag.
O. Arg. S. 11291, −27° 42′.		
Mar. 18	11 11 52.56	7.5
δ Crateris, −14° 4′.		
Apr. 17	11 12 50.57	
22	50.57	
(*)+0° 35′.		
Apr. 7	11 12 52.87	
Lacaille 4703, −39° 47′		
Apr. 24	11 12 58.60	7.0
O. Arg. S. 11304, −27° 45′.		
Apr. 14	11 13 4.69	8.0
O. Arg. S. 11311, −29° 41′.		
Mar. 27	11 13 36.30	7.7
Apr. 8	36.42	8.0
13	36.32	8.0
(*)−14° 3′.		
May 5	11 13 39.38	8.0
(*)+9° 53′.		
May 4	11 13 58.39	9.0
Lalande 21645, −11° 59′.		
Apr. 21	11 13 59.68	8.0
Lacaille 4710, −15° 2′.		
Apr. 15	11 14 25.90	8.0
Weisse (2) 246, +36° 12′.		
May 5	11 14 27.53	8.0
Weisse (2) 257, (1st * N.,) +37° 48′.		
Apr. 22	11 15 3.22	8.5
Weisse (2) 257, (2d * S.,) +37° 48′.		
Apr. 22	11 15 3.48	8.5
Weisse 235, +9° 53′.		
May 4	11 15 6.10	7.0
(*)−38° 22′.		
Apr. 8	11 16 7.05	
Weisse 258, +4° 51′.		
Apr. 24	11 16 21.72	
B. A. C. 3875, −35° 26′.		
Apr. 13	11 16 55.02	5.5
Weisse (2) 312, +31° 44′.		
Mar. 27	11 17 45.70	9.0
Apr. 17	45.95	8.5
(*)+31° 46′.		
Apr. 17	11 17 53.70	9.0
O. Arg. S. 11374, −25° 18.		
Apr. 21	11 19 23.11	

	h. m. s.	Mag.
Rumker 3575, +18° 35'.		
Apr. 8	11 19 42.63	
Lacaille 4746, −37° 25'.		
Apr. 14	11 20 24.42	7.0
τ Leonis, +3° 34'.		
Mar. 27	11 21 15.08	
Apr. 15	15.07	
May 4	15.06	5.5
Weisse 349, +3° 32'.		
Apr. 15	11 21 15.95	7.5
Weisse 365, +3° 30'.		
Apr. 17	11 21 45.21	6.5
B. A. C. 3909, −0° 6'.		
Apr. 8	11 22 45.40	
Lacaille 3760, −37° 42'.		
Apr. 13	11 23 22.50	5.8
(*)−29° 33'.		
Apr. 17	11 24 36.48	8.5
Lalande 21911, +0° 19'.		
Apr. 14	11 25 38.72	
B. A. C. 3925, −7° 5'.		
Apr. 8	11 26 11.07	6.0
B. A. C. 3926, −30° 20'.		
Apr. 13	11 26 28.50	5.0
22	28.58	6.0
Weisse 421, −6° 50'.		
Apr. 21	11 26 47.16	
(*)+2° 4'.		
Apr. 17	11 26 51.37	9.0
Weisse 450, −5° 47'.		
Apr. 8	11 27 1.07	7.2
Lacaille 4792, −34° 53'.		
Apr. 22	11 28 49.78	6.5
(*)+1° 27'.		
May 5	11 28 49.91	
Weisse (2) 526, +20° 51'.		
Apr. 13	11 29 0.95	9.0
14	1.07	9.0
Weisse 488, −13° 44'.		
May 10	11 29 3.83	9.0
Weisse 495, +8° 4'.		
Apr. 17	11 29 23.08	
B. A. C. 3937, +28° 30'.		
Apr. 24	11 29 27.21	5.5

	h. m. s.	Mag.
Weisse (2) 534, +27° 42'.		
May 10	11 29 28.57	7.5
Weisse (2) 540, +22° 45'.		
May 5	11 29 39.13	8.0
(*)+71° 16'.		
May 10	11 29 46.51	8.5
11	46.07	9.2
15	46.12	9.3
θ Crateris, −9° 5'.		
Apr. 15	11 30 5.32	5.0
Lacaille 4805, −33° 56'.		
May 4	11 30 13.75	7.0
υ Leonis, −0° 9'.		
Apr. 14	11 30 17.64	
Weisse (2) 556, +28° 31'.		
Apr. 8	11 30 23.64	7.0
(*)−34° 52'.		
May 5	11 30 39.95	8.0
(*)+71° 13'.		
May 11	11 30 41.68	9.0
15	41.73	9.0
Weisse (2) 594, +20° 51'.		
Apr. 13	11 31 41.51	8.2
Lacaille 4824, −38° 32'.		
Apr. 14	11 32 15.97	7.5
17	15.86	7.3
Lacaille 4825, −39° 34'.		
Apr. 21	11 32 23.51	5.5
(*)−38° 38'.		
Apr. 14	11 32 57.23	8.0
(*)−5° 23'.		
May 4	11 33 4.42	9.5
Weisse 562, −0° 42'.		
May 10	11 33 5.99	8.5
(*)+20° 50'.		
Apr. 15	11 33 28.26	9.2
Lacaille 4837, −37° 22'.		
Apr. 8	11 33 33.14	6.5
22	32.94	
(*)−37° 23'.		
Apr. 22	11 33 34.45	8.0
B. A. C. 3963, −34° 1'.		
Apr. 21	11 33 45.46	
Carrington 1741, +81° 18'.		
May 5	11 33 53.78	8.0

	h. m. s.	Mag.
Weisse 605, +1° 44'.		
Apr. 17	11 35 28.49	9.2
Weisse 646, −7° 5'.		
Apr. 15	11 38 0.08	8.0
Weisse 652, +7° 48'.		
Apr. 8	11 38 14.06	9.0
Weisse 673, −5° 54'.		
Apr. 17	11 39 30.06	8.6
Weisse 674, −7° 2'.		
Apr. 15	11 39 31.64	
Weisse 680, −2° 13'.		
Apr. 16	11 39 41.22	7.8
Lacaille 4881, −27° 13'.		
Apr. 21	11 39 48.92	6.0
(*)−25° 14'.		
May 10	11 40 32.41	9.0
O. Arg. S. 11656, −25° 14'.		
May 10	11 40 46.71	7.5
Weisse (2) 793, +21° 1'.		
Apr. 8	11 41 16.22	8.5
May 4	16.17	9.0
10	16.27	
93 Leonis, +20° 58'.		
Apr. 8	11 41 16.51	5.0
May 4	16.56	6.0
10	16.71	6.5
B. A. C. 3992, +15° 1'.		
Apr. 17	11 41 57.32	6.0
B. A. C. 3994, −26° 1'.		
Apr. 15	11 42 11.22	6.0
β Leonis, +15' 18'.		
Apr. 21	11 42 25.61	
24	25.62	
May 11	25.66	
July 26	25.69	
(*)−36° 11'.		
Apr. 8	11 44 38.76	8.3
(*)−5° 37'.		
Apr. 15	11 45 37.18	9.5
B. A. C. 4015, −33° 10'.		
Apr. 17	11 46 20.57	5.0
B. A. C. 4021, +5° 36'.		
Apr. 16	11 47 30.37	7.5
(*)−33° 21'.		
Apr. 16	11 48 47.88	9.5
(*)+11° 5'.		
Apr. 17	11 49 1.44	9.0

	h. m. s.	Mag.
(*)+36° 10'.		
Apr. 22	11 49 3.24	8.8
Weisse (2) 954, +36° 10'.		
Apr. 22	11 49 34.68	7.0
O. Arg. N. 12195, +62° 58'.		
Apr. 13	11 50 29.45	7.5
B. A. C. 4043, +1° 16'.		
Apr. 15	11 52 24.45	6.0
Lalande 22565, +34° 41'.		
Apr. 17	11 53 6.47	8.8
22	6.36	8.5
Lalande 22566, +34° 46'.		
Apr. 21	11 53 16.62	6.0
22	16.48	6.0
O. Arg. S. 11827, −21° 5'.		
Apr. 8	11 53 50.93	7.0
16	50.71	9.0
O. Arg. S. 11828, −21° 8'.		
Apr. 8	11 54 3.65	
16	3.49	
B. A. C. 4055, +4° 22'.		
Apr. 15	11 54 30.90	7.0
Weisse 926, +13° 6'.		
Apr. 17	11 54 34.28	7.0
Weisse (2) 1067, +36° 46'.		
Apr. 24	11 55 0.00	6.0
O. Arg. S. 11848, −25° 41'.		
May 11	11 55 42.97	9.0
(*)−34° 12'.		
May 10	11 55 43.97	9.5
(*)+8° 37'.		
May 17	11 55 48.21	9.5
(*)−9° 51'.		
May 4	11 55 59.62	8.3
(*)−9° 55'.		
May 4	11 56 6.01	8.2
11	6.18	8.5
Weisse 947, +8° 37'.		
May 17	11 56 6.18	8.0
ο Virginis, +9° 27'.		
Apr. 8	11 58 35.20	
May 20	35.19	
(*)−30° 16'.		
Apr. 16	11 59 30.16	
O. Arg. N. 12337, +75° 24'.		
Apr. 13	12 0 1.98	8.3

Star	Date	h. m. s.	Mag.
O. Arg. S. 11917, −30° 40′.	Apr. 17	12 0 54.86	
O. Arg. S. 11920, −23° 14′.	Apr. 15	12 0 56.92	6.5
(*)−32° 19′.	Apr. 22	12 2 22.85	8.0
	24	22.95	7.5
O. Arg. S. 1944, −27° 15′.	May 4	12 2 39.77	8.5
Weisse 16, +8° 54′.	Apr. 15	12 3 7.51	8.5
	16	7.57	8.5
O. Arg. N. 12397, +75° 23′.	Apr. 13	12 3 26.61	7.0
Lacaille 5044, −24° 14′.	May 10	12 3 46.64	
B. A. C. 4098, −37° 8′.	Apr. 17	12 3 50.51	
(*)−39° 50′.	Apr. 22	12 4 2.05	8.8
	May 20	2.19	9.2
Lacaille 5063, −33° 44′.	Apr. 17	12 6 28.76	5.5
12 Virginis, +11° 0′.	Apr. 15	12 6 48.70	5.0
	24	48.74	5.5
Groombridge 1860, +84° 14′.	May 11	12 7 27.38	
	15	28.90	8.2
Lalande 22934, (1st *,) +33° 32′.	Apr. 13	12 7 33.43	7.0
Lalande 22934, (2d *,) +33° 32′.	Apr. 13	12 7 35.62	8.3
γ Corvi, −16° 29′.	Apr. 15	12 9 7.55	3.5
Weisse 149, +8° 24′.	Apr. 13	12 11 5.44	8.3
(*)−25° 51′.	Apr. 21	12 11 50.34	8.4
(*)+23° 51′.	Apr. 16	12 12 3.82	8.0
Weisse 177, +0° 7′.	Apr. 17	12 12 34.95	9.2
Lacaille 5097, −31° 52′.	Apr. 22	12 12 44.94	7.0
8 Comæ, +23° 49′.	Apr. 15	12 12 45.07	5.5
	24	45.03	5.5
	May 4	45.14	7.0
η Virginis, +0° 3′.	May 25	12 13 15.31	
Weisse 193, +6° 24′.	Apr. 17	12 13 17.98	7.0
Weisse 199, +6° 27′.	Apr. 17	12 13 33.92	9.0
Weisse (2) 268, +38° 39′.	Apr. 13	12 13 44.70	6.5
c Virginis, +4° 6′.	May 17	12 13 44.92	
B. A. C. 4153, +27° 21′.	Apr. 24	12 13 47.40	6.0
(*)−25° 53′.	May 15	12 14 6.84	9.0
Lacaille 5109, −41° 47′.	May 17	12 14 15.09	
O. Arg. S. 12101, −25° 59′.	May 15	12 14 30.28	7.5
(*)−29° 0′.	Apr. 21	12 14 36.33	7.5
	May 10	36.51	7.8
B. A. C. 4166, +84° 3′.	May 10	12 15 26.26	
	20	26.05	8.0
(*)−32° 51′.	May 4	12 15 48.58	8.0
Weisse (2) 320, +27° 24′.	May 17	12 16 2.65	
O. Arg. S. 12124, −25° 44′.	Apr. 24	12 16 35.25	7.5
Lacaille 5134, −38° 11′.	Apr. 17	12 17 20.70	
O. Arg. S. 12134, −23° 31′.	Apr. 15	12 17 20.90	9.0
4 Canum Venaticorum, +43° 20′.	May 17	12 17 22.87	5.0
Lalande 23219, −4° 55′.	Apr. 21	12 18 4.45	8.0
Radcliffe 2860, +64° 31′.	Apr. 16	12 18 42.41	7.8
B. A. C. 4184, +24° 40′.	May 15	12 18 42.57	6.0
Weisse 291, −4° 9′.	Apr. 22	12 19 9.20	7.7
Carrington 1849, +86° 2′.	May 4	12 19 39.34	8.3
Lalande 23270, −4° 52′.	Apr. 15	12 20 6.47	6.5
O. Arg. S. 12165, −26° 58′.	Apr. 24	12 20 18.48	8.3
Weisse 311, +14° 46′.	Apr. 17	12 20 18.59	9.0
O. Arg. S. 12173, −29° 21′.	May 11	12 20 39.18	8.3
B. A. C. 4198, −15° 54′.	Apr. 16	12 21 4.53	8.0
B. A. C. 4200, −3° 52′.	Apr. 13	12 21 11.44	
(*)−37° 12′.	May 17	12 21 59.25	9.0
(*)+35° 16′.	May 15	12 22 21.93	9.0
B. A. C. 4214, −22° 57′.	Apr. 13	12 23 29.35	5.5
Lacaille 5188, −30° 55′.	Apr. 15	12 24 16.34	7.5
(*)+5° 27′.	Apr. 17	12 24 45.22	8.0
O. Arg. N. 12726, +64° 29′.	Apr. 24	12 26 6.61	7.5
(*)−32° 30′.	May 15	12 26 49.06	8.8
O. Arg. S. 12232, −29° 22′.	Apr. 16	12 26 57.99	8.0
O. Arg. S. 12243, −22° 47′.	Apr. 17	12 26 58.69	7.7
(*)−29° 24′.	May 20	12 27 13.07	9.3
β Corvi, −22° 40′.	Apr. 15	12 27 33.79	
	21	33.77	
Weisse 452, +6° 42′.	Apr. 13	12 27 55.83	8.5
(*)+6° 43′.	Apr. 13	12 27 56.01	9.0
O. Arg. S. 12254, −22° 45′.	May 25	12 27 59.22	8.3
O. Arg. S. 12258, −25° 58′.	May 20	12 28 38.36	7.7
Weisse (2) 602, +37° 9′.	May 11	12 28 49.57	7.3
Lacaille 5214, −39° 9′.	Apr. 16	12 29 1.67	6.5
	22	1.70	5.5
(*)−33° 1′.	Apr. 17	12 29 12.64	7.5
	24	12.65	7.2
O. Arg. S. 12269, −25° 15′.	May 4	12 29 14.01	8.7
Weisse 510, +2° 34′.	Apr. 21	12 31 34.68	8.0
	May 10	34.71	
B. A. C. 4254, +2° 34′.	Apr. 21	12 31 44.56	4.0
B. A. C. 4255, −3° 38′.	Apr. 13	12 32 2.33	5.7
(*)+13° 29′.	Apr. 17	12 32 15.86	9.2
B. A. C. 4262, −39° 16′.	Apr. 15	12 32 50.56	5.0
	16	50.62	6.0
Lalande 23666, +34° 53′.	Apr. 24	12 33 48.78	6.0
Lacaille 5238, −43° 23′.	Apr. 22	12 34 3.88	6.5
O. Arg. S. 12238, −27° 11′.	May 4	12 34 19.55	6.5
Weisse 564, +2° 43′.	May 11	12 34 54.13	8.5
Weisse 583, +2° 20′.	Apr. 17	12 35 45.34	9.0
Lacaille 5254, −39° 27′.	May 15	12 36 21.28	6.5
Lacaille 5257, −25° 34′.	Apr. 13	12 36 38.01	6.5
	16	38.04	6.5
(*)−34° 42′.	Apr. 15	12 36 39.40	8.0
	21	39.51	8.0

Star	Date	h. m. s.	Mag.
(*)—36° 31'.	May 4	12 37 12.65	8.0
	11	12.73	
	17	12.93	
B. A. C. 4281, +84° 22'.	May 20	12 37 23.19	
B. A. C. 4282, +44° 49'.	Apr. 17	12 38 18.73	6.5
O. Arg. S. 12390, —29° 4'.	Apr. 22	11 38 23.11	8.0
(*)+14° 12'.	May 17	12 38 23.57	8.0
(*)+14° 25'.	Apr. 16	12 39 59.17	9.0
(*)+14° 25'.	Apr. 21	12 40 33.35	10.0
Lacaille 5281, —44° 0'.	Apr. 15	12 41 4.12	
B. A. C. 4298, +81° 20'.	Apr. 24	12 41 8.17	6.5
28 Comæ, +14° 17'.	Apr. 22	12 41 43.72	5.5
	May 15	43.75	5.5
O. Arg. S. 12444, —25° 7'.	May 20	12 42 9.00	9.5
Rumker 4137, —8° 29'.	Apr. 13	12 42 15.77	6.8
(*)+18° 27'.	Apr. 17	12 42 23.65	9.0
	May 4	23.65	8.3
Lacaille 5291, —34° 5'.	May 17	12 42 29.34	8.0
11 Canum Venaticorum, +49° 11'.	May 10	12 42 42.73	
Lalande 23919, +36° 2'.	May 4	12 43 1.75	
B. A. C. 4311, +38° 14'.	Apr. 15	12 43 59.76	5.5
Weisse 743, —12° 46'.	Apr. 21	12 44 39.55	
Lacaille 5301, —30° 22'.	Apr. 17	12 44 43.78	7.0
Lacaille 5302, —30° 29'.	Apr. 17	12 44 49.42	6.5
(*)—38° 36'.	Apr. 16	12 45 37.38	9.0
(*)—38° 47'.	Apr. 16	12 47 13.97	
(*)—27° 15'.	Apr. 24	12 47 16.33	6.5
	May 4	16.27	7.5
(*)—27° 15'.	May 4	12 47 16.88	
(*)—38° 47'.	Apr. 16	12 47 32.59	9.0
	May 11	32.69	8.0
Lacaille 5320, —41° 34'.	May 20	12 47 52.65	7.0
O. Arg. S. 12523, —26° 42'.	May 25	12 48 43.88	9.0
B. A. C. 4331, —43° 26'.	May 15	12 48 44.68	6.5
Weisse 820, —2° 50'.	Apr. 17	12 49 0.23	6.5
Weisse 835, —0° 14'.	May 17	12 49 46.52	8.0
O. Arg. S. 12538, —21° 31'.	Apr. 21	12 50 14.97	8.0
8 Draconis, +66° 10'.	May 22	12 50 17.64	
(*)—32° 26'.	Apr. 22	12 50 22.93	8.0
	24	23.02	8.0
	May 17	23.18	7.5
Lacaille 5342, —38° 13'.	May 15	12 50 51.48	7.0
α Canum Venaticorum, +39° 2'.	June 17	12 50 56.08	
Weisse 857, —13° 38'.	May 25	12 51 6.77	8.0
(*)—14° 17'.	May 11	12 51 14.76	6.5
(*)—39° 19'.	May 20	12 51 43.20	8.5
Lacaille 5347, —42° 59'.	May 4	12 51 49.61	8.0
O. Arg. S. 12564, —21° 25'.	Apr. 21	12 52 30.13	8.0
O. Arg. S. 12567, —21° 22'.	Apr. 15	12 52 52.61	8.5
(*)—14° 57'.	Apr. 17	12 57 19.73	9.0
Lacaille 5382, —27° 42'.	Apr. 13	12 57 20.06	6.0
O. Arg. S. 12626, —14° 47'.	Apr. 15	12 58 6.62	9.0
Lacaille 5387, —27° 49'.	Apr. 21	12 58 7.80	7.0
Weisse 1036, +13° 2'.	Apr. 22	13 1 0.19	
(*)+12° 47'.	Apr. 16	13 1 0.36	
(*)+12° 47'.	Apr. 16	13 1 5.83	
O. Arg. S. 12662, —27° 30'.	Apr. 13	13 1 6.12	8.5
Lacaille 5407, —35° 31'.	Apr. 15	13 1 8.29	6.0
(*)+12° 47'.	Apr. 17	13 1 12.04	9.0
Weisse 1047, +12° 54'.	Apr. 17	13 1 36.19	8.5
	21	36.12	9.0
Weisse 1054, +14° 46'.	Apr. 17	13 1 48.27	8.7
ψ Hydræ, —22° 25'.	May 4	13 2 3.32	5.0
θ Virginis, (Comp.,) —4° 50'.	Apr. 22	13 3 13.02	
θ Virginis, —4° 50'.	Apr. 21	13 3 13.24	
	22	13.16	
	May 4	13.21	
	25	13.31	
	June 17	13.23	
(*)+13° 1'.	Apr. 24	13 3 36.59	9.0
B. A. C. 4405, —41° 31'.	May 15	13 3 45.08	5.5
(*)—36° 42'.	Apr. 15	13 4 25.57	8.0
	May 11	25.73	8.0
(*)—11° 14'.	Apr. 13	13 4 28.54	
Lacaille 5428, —25° 48'.	May 17	13 4 35.37	6.5
Weisse 44, +12° 54'.	Apr. 16	13 4 48.22	
	17	48.25	
B. A. C. 4423, +12° 16'.	May 15	13 6 4.82	6.0
(*)—35° 13'.	Apr. 22	13 6 26.37	8.0
Weisse 81, —2° 48'.	May 4	13 6 38.98	
Weisse 87, —10° 52'.	Apr. 24	13 7 2.28	
Lalande 5454, —23° 35'.	May 11	13 7 25.30	6.5
B. A. C. 4433, +40° 48'.	May 17	13 7 49.08	
Lacaille 5457, —35° 41'.	Apr. 15	13 7 51.40	
O. Arg. S. 12733, —29° 28'.	May 15	13 8 54.46	8.0
57 Virginis, —19° 14'.	Apr. 24	13 8 57.21	4.5
Lalande 24615, +36° 8'.	Apr. 13	13 9 8.32	7.5
	17	8.41	6.0
Weisse 145, +2° 52'.	Apr. 15	13 10 16.85	8.0
	22	16.75	8.5
Lacaille 5478, —27° 38'.	Apr. 24	13 11 13.90	8.0
(*)+33° 11'.	May 4	13 11 14.95	
Weisse 169, —5° 6'.	Apr. 13	13 11 33.16	8.3
	22	33.13	7.7
Weisse 181, —1° 49'.	May 15	13 12 13.74	9.0
B. A. C. 4455, —10° 58'.	May 15	13 12 53.52	6.7
O. Arg. S. 12802, —26° 43'.	May 17	13 13 21.37	8.0
62 Virginis, —10° 37'.	May 20	13 13 30.52	6.0
O. Arg. S. 12811, —21° 42'.	Apr. 15	13 14 0.c4	6.0

	h. m. s.	Mag.
(*)+12° 56'.		
Apr. 24 . .	13 14 6.02	9.0
Weisse 218, +1° 2'.		
May 11 . .	13 14 21.30	9.5
Lacaille 5503, −35° 26'.		
Apr. 17 . .	13 14 28.98	7.0
Weisse 222, −11° 4'.		
May 4 . .	13 14 44.62	7.2
α Virginis, −10° 29'.		
Apr. 15 . .	13 18 20.83	
May 20 . .	20.88	
69 Virginis, −15° 18'.		
May 11 . .	13 20 31.36	
(*)−34° 59'.		
Apr. 17 . .	13 20 32.96	7.7
22 . .	32.92	7.8
Weisse 318, +0° 19'.		
May 20 . .	13 20 49.92	9.0
Lacaille 5553, −25° 40'.		
May 17 . .	13 20 51.79	
Weisse 331, +9° 3'.		
Apr. 15 . .	13 21 39.66	6.5
O. Arg. N. 13647, +61° 57'.		
May 15 . .	13 22 13.55	9.0
Weisse (2) 437, +36° 59'.		
Apr. 17 . .	13 23 13.68	8.0
O. Arg. S. 12908, −22° 58'.		
May 11 . .	13 23 22.32	7.5
Lalande 24977, −24° 59'.		
Apr. 15 . .	13 23 56.95	7.0
(*)−34° 32'.		
May 17 . .	13 24 18.04	9.5
B. A. C. 4527, +79° 19'.		
May 4 . .	13 25 52.39	5.5
75 Virginis, −14° 42'.		
Apr. 17 . .	13 25 54.65	5.0
(*)−1° 38'.		
Apr. 24 . .	13 26 15.58	
Weisse 426, −6° 57'.		
Apr. 15 . .	13 26 37.07	5.7
22 . .	37.08	6.0
(*)−36° 53'.		
May 15 . .	13 27 34.22	8.0
(*)−34° 58'.		
May 11 . .	13 27 46.67	9.2

	h. m. s.	Mag.
ζ Virginis, +0° 4'.		
Apr. 17 . .	13 28 4.24	
24 . .	4.13	
Weisse 458, +5° 36'.		
May 20 . .	13 28 11.61	8.6
Weisse 461, +7° 8'.		
May 20 . .	13 28 25.49	8.6
(*)−26° 36'.		
May 25 . .	13 28 34.55	9.5
Weisse 472, +7° 11'.		
May 20 . .	13 28 43.64	8.3
(*)+7° 13'.		
Apr. 15 . .	13 29 17.15	9.0
Weisse 501, −4° 8'.		
Apr. 17 . .	13 30 37.87	8.5
O. Arg. S. 13005, −23° 1'.		
May 4 . .	13 31 5.85	8.0
B. A. C. 4548, −28° 52'.		
May 11 . .	13 31 23.97	6.0
Lacaille 5625, −39° 23'.		
Apr. 15 . .	13 32 10.61	8.0
Lacaille 5635, −36° 54'.		
Apr. 24 . .	13 32 53.12	6.0
Lacaille 5655, −29° 31'.		
Apr. 15 . .	13 35 39.89	6.0
17 . .	40.01	5.5
(*)−35° 54'.		
Apr. 17 . .	13 36 41.54	7.8
Weisse (2) 749, +35° 39'.		
Apr. 24 . .	13 36 55.71	5.5
Weisse 630, −12° 17'.		
May 4 . .	13 37 22.66	8.5
83 Virginis, −15° 31'		
May 15 . .	13 37 29.20	5.5
(*)−37° 36'.		
May 4 . .	13 40 35.90	
O. Arg. S. 13149, −30° 5'.		
May 20 . .	13 41 10.39	8.5
Weisse 694, −7° 21'.		
May 11 . .	13 41 13.17	7.2
Lacaille 5682, −35° 3'.		
Apr. 17 . .	13 41 26.46	5.5
22 . .	26.43	6.0
24 . .	26.50	

	h. m. s.	Mag.
O. Arg. S. 13158, −22° 3'.		
May 15 . .	13 41 49.65	7.7
(*)−35° 56'.		
May 20 . .	13 42 5.78	8.3
Weisse (2) 866, +38° 33'.		
May 22 . .	13 42 23.31	7.0
η Ursæ Majoris, +49° 58'.		
June 18 . .	13 42 25.16	
Lacaille 5699, −30°23'.		
May 15 . .	13 42 55.59	6.5
Weisse (2) 894, +22° 58'.		
May 4 . .	13 42 56.52	9.0
25 . .	56.64	9.0
B. A. C. 4613, −20° 12'.		
Apr. 24 . .	13 43 6.07	6.5
Weisse (2) 899, +18° 32'.		
May 26 . .	13 43 11.61	
Weisse 731, −12° 26'.		
May 25 . .	13 43 23.79	7.0
O. Arg. S. 13177, −27° 40'.		
Apr. 17 . .	14 43 24.45	8.0
22 . .	24.49	8.3
O. Arg. S. 13182, −27° 34'.		
Apr. 17 . .	13 43 38.05	8.0
22 . .	38.06	8.3
(*)+77° 49'.		
May 26 . .	13 43 40.92	9.0
Weisse (2) 930, +37° 18'.		
May 11 . .	13 44 4.94	6.5
Rumker 4483, +12° 14'.		
May 20 . .	13 44 33.37	8.0
Weisse (2) 976, +38° 23'.		
Apr. 24 . .	13 45 50.24	7.8
Weisse (2) 984, +36° 22'.		
May 25 . .	13 46 12.67	8.0
(*)+77° 48'.		
May 26 . .	13 46 37.45	9.0
(*)+66° 39'.		
May 20 . .	13 46 48.95	7.2
Weisse 797, +10° 53'.		
Apr. 17 . .	13 47 32.80	7.5
Weisse 798, +10° 54'.		
Apr. 17 . .	13 47 44.59	8.5
η Bootis, +19° 3'.		
May 15 . .	13 48 29.68	
June 18 . .	29.66	

	h. m. s.	Mag.
Lacaille 5758, −37° 37'.		
Apr. 24 . .	13 48 59.21	7.2
Lacaille 5763, −26° 58'.		
May 11 . .	13 49 9.11	6.5
(*)−30° 19'.		
Apr. 22 . .	13 50 26.81	7.5
May 17 . .	27.09	8.5
(*)−36° 46'.		
May 17 . .	13 51 13.92	9.5
Lalande 25674, +24° 1'.		
May 15 . .	13 51 16.16	7.7
(*)+11° 58'.		
Apr. 24 . .	13 52 2.60	9.5
(*)−38° 36'.		
May 11 . .	13 52 28.72	8.0
(*)−38° 47'.		
Apr. 22 . .	13 53 56.89	7.7
(*)−35° 32'.		
May 20 . .	13 54 40.74	7.0
25 . .	40.76	7.5
(*)+75° 22'.		
May 17 . .	13 54 45.62	8.3
Weisse (2) 1201, +23° 51'.		
Apr. 24 . .	13 55 27.31	9.0
Lacaille 5798, (1st *,) −36° 37'.		
Apr. 22 . .	13 56 19.91	8.0
Lacaille 5798, (2d *,) −36° 37'.		
Apr. 22 . .	13 56 22.02	
(*)+23° 50'.		
Apr. 22 . .	13 59 49.15	9.0
24 . .	49.13	9.0
(*)−6° 11'.		
May 11 . .	14 2 21.29	9.0
20 . .	21.37	9.5
O. Arg. S. 13432, −24° 32'.		
May 17 . .	14 3 32.62	8.0
O. Arg. S. 13438, −25° 43'.		
May 15 . .	14 3 56.43	7.5
α Bootis, +19° 52'.		
Apr. 22 . .	14 9 44.02	
24 . .	44.02	
May 25 . .	44.01	
Sept. 3 . .	43.93	
(*)−36° 40'.		
May 4 . .	14 10 58.39	7.7
O. Arg. N. 14432, +51° 58'.		
May 11 . .	14 11 35.90	

	h. m. s.	Mag.
ι Bootis, +51° 58'.		
May 11 . .	14 11 38.59	
Weisse (2) 245, +40° 59'.		
May 20 . .	14 12 6.58	
B. A. C. 4752, +51° 55'.		
May 11 . .	14 12 43.70	
Weisse 209, −4° 32'.		
May 15 . .	14 12 52.58	
(*)−38° 6'.		
Apr. 22 . .	14 13 51.08	
O. Arg. S. 13584, −19° 5'.		
May 11 . .	14 16 45.00	7.5
O. Arg. S. 13589, −19° 5'.		
May 4 . .	14 16 51.18	9.0
11 . .	51.20	8.5
(*)+49° 26'.		
May 15 . .	14 23 0.16	10.0
Lacaille 5963, −38° 16'.		
May 4 . .	14 23 8.18	5.5
(*)+1° 38'.		
May 11 . .	14 29 9.89	
(*)+0° 11'.		
May 15 . .	14 38 57.98	8.0
ε Bootis, +27° 38'.		
May 11 . .	14 39 18.52	
20 . .	18.59	
June 5 . .	18.62	
19 . .	18.58	
Lacaille 6099, −27° 8'.		
May 22 . .	14 40 5.24	6.5
Lacaille 6100, −35° 16'.		
May 25 . .	14 40 31.08	
Weisse 748, +0° 17'.		
May 15 . .	14 40 54.30	7.5
22 . .	54.44	7.0
Lacaille 6109, −31° 52'.		
May 4 . .	14 41 56.83	6.0
Lacaille 6113, −28° 29'.		
May 11 . .	14 42 15.33	6.5
58 Hydræ, −27° 24'.		
May 22 . .	14 42 39.60	5.0
Weisse 787, −6° 37'.		
May 13 . .	14 43 10.49	
Weisse 793, −11° 28'.		
May 13 . .	14 42 32.98	7.3

	h. m. s.	Mag.
α² Libræ, −15° 30'.		
May 15 . .	14 43 41.36	
Weisse (2) 936, +36° 37'.		
May 15 . .	14 43 48.63	8.0
June 5 . .	48.70	8.0
B. A. C. 4897, +28° 21'.		
June 11 . .	14 44 0.50	6.0
(*)+37° 8'.		
May 22 . .	14 44 38.38	8.0
B. A. C. 4901, −37° 15'.		
May 4 . .	14 44 42.08	5.0
B. A. C. 4906, +37° 48'.		
June 5 . .	14 45 21.72	6.0
Rumker 4840, +1° 16'.		
May 11 . .	14 46 20.18	8.5
Lacaille 6152, −34° 4'.		
May 4 . .	14 48 30.80	6.5
Lacaille 6162, −28° 37'.		
May 11 . .	14 49 28.36	
O. Arg. S. 14094, −21° 36'.		
May 13 . .	14 49 58.55	
59 Hydræ, −27° 8'.		
May 20 . .	14 50 57.86	
22 . .	57.93	5.0
β Ursæ Minoris, +74° 42'.		
May 15 . .	14 51 6.74	
Lacaille 6186, −37° 32'.		
May 4 . .	14 52 59.05	6.0
Weisse (2) 1146, +40° 44'.		
May 11 . .	14 53 6.16	8.2
Weisse (2) 1154, +43° 54'.		
May 13 . .	14 53 19.81	9.0
June 5 . .	19.65	9.0
Weisse (2) 1162, +43° 52'.		
May 13 . .	14 53 36.01	9.5
O. Arg. N. 15005, +59° 5'.		
June 11 . .	14 53 59.92	7.0
(*)+43° 52'.		
May 25 . .	14 54 9.71	
(*)+59° 5'.		
June 11 . .	14 54 13.60	8.0
(*)+43° 52'.		
May 13 . .	14 54 15.19	9.5
June 5 . .	14.89	9.3

	h. m. s.	Mag.
Weisse (2) 1183, +43° 50'.		
May 13 . .	14 54 23.65	9.0
June 5 . .	23.52	8.5
Groombridge 2210, +86° 30'.		
May 20 . .	14 55 36.65	7.5
(*)+10° 26'.		
May 4 . .	14 56 9.55	9.0
Σ Cat. Gen. 1683,(1st and N.*,) +6° 1'.		
May 11 . .	14 57 39.20	7.7
Σ Cat. Gen. 1683, (2d and S.*,) +6° 1'.		
May 11 . .	14 57 39.41	7.5
Weisse 1072, −11° 53'.		
May 25 . .	14 57 50.77	9.2
B. A. C. 4963, −23° 37'.		
May 4 . .	14 58 36.03	6.0
(*)−31° 56'.		
May 15 . .	14 58 49.78	8.0
B. A. C. 4982, +83° 3'.		
May 20 . .	14 59 17.14	6.0
O. Arg. S. 14257, −29° 0'.		
June 5 . .	14 59 25.83	8.5
B. A. C. 4972, −23° 41'.		
May 4 . .	14 59 41.56	6.6
Weisse 1110, −1° 49'.		
May 13 . .	14 59 48.68	8.5
O. Arg. S. 14277, −26° 12'.		
May 11 . .	15 0 40.92	8.5
O. Arg. S. 14278, −28° 51'.		
June 17 . .	15 0 53.46	7.5
B. A. C. 4979, −26° 5'.		
June 12 . .	15 1 16.03	7.0
Weisse 1144, −11° 13'.		
June 5 . .	15 1 35.16	9.0
O. Arg. S. 14297, −21° 42'.		
June 12 . .	15 1 37.33	
17 . .	37.25	8.2
Lacaille 6354, −34° 15'.		
May 15 . .	15 2 29.44	7.5
Weisse 10, −4° 53'.		
May 13 . .	15 2 45.11	7.0
b Bootis, +26° 48'.		
May 20 . .	15 2 47.03	5.5
(*)−37° 0'.		
May 4 . .	15 3 12.20	

	h. m. s.	Mag.
(*)−25° 7'.		
June 19 . .	15 4 39.09	9.5
Dorpat 1914, −4° 59'.		
May 13 . .	15 4 52.91	9.0
O. Arg. S. 14349, −25° 7'.		
June 17 . .	15 5 4.00	8.0
19 . .	4.25	
O. Arg. S. 14402, −20° 26'.		
May 4 . .	15 8 18.08	8.0
B. A. C. 5027, −23° 31'.		
May 11 . .	15 9 11.58	7.2
O. Arg. S. 14421, −30° 0'.		
May 4 . .	15 10 0.83	
11 . .	0.93	
β Libræ, −8° 54'.		
May 20 . .	15 10 0.93	
(*)−30° 0'.		
May 4 . .	15 10 12.40	
θ Bootis, +33° 48'.		
May 13 . .	15 10 15.61	5.0
15 . .	15.68	
O. Arg. S. 14435, −30° 21'.		
May 25 . .	15 10 50.71	
Lalande 27880, −18° 41'.		
May 20 . .	15 12 2.43	7.5
Lacaille 6318, +34° 27'.		
June 17 . .	15 12 3.17	7.5
O. Arg. S. 14459, −20° 23'.		
June 11 . .	15 12 20.12	8.5
(*)−24° 31'.		
May 25 . .	15 12 34.08	9.5
Lalande 27907, −21° 46'.		
May 13 . .	15 12 53.12	
(*)−31° 51'.		
May 4 . .	15 15 15.53	7.2
11 . .	15.47	7.2
B. A. C. 5064, +50° 51'.		
May 22 . .	15 15 24.58	6.0
(*)−13° 20'.		
May 13 . .	15 15 40.21	8.0
20 . .	40.12	8.0
O. Arg. S. 14508, −26° 47'.		
May 25 . .	15 15 49.30	9.0
O. Arg. S. 14511, −26° 29'.		
June 5 . .	15 15 55.06	
11 . .	55.16	9.0

	h. m. s.	Mag.
ε LIBRÆ, −9° 51'.		
May 20 . .	15 17 9.20	5.0
(*)+55° 47'.		
June 11 . .	15 17 12.08	9.0
17 . .	12.06	7.5
11 URSÆ MINORIS, +72° 18'.		
June 5 . .	11 17 12.79	
LACAILLE 6372, −36° 3'.		
May 11 . .	15 17 58.79	7.0
O. ARG. S. 15448, −27° 30'.		
May 15 . .	15 18 58.85	7.0
LACAILLE 6376, −36° 18'.		
May 13 . .	15 18 58.89	5.5
μ¹ BOOTIS, +37° 50'.		
May 4 . .	15 19 34.79	
(*)+37° 40'.		
June 12 . .	15 19 37.27	7.5
(*)+32° 3'.		
June 17 . .	15 19 48.03	9.5
LACAILLE 6388, −38° 10'.		
May 11 . .	15 20 22.47	6.5
γ URSÆ MINORIS, +72° 18'.		
June 5 . .	15 21 56.97	
RADCLIFFE 3387, +44° 27'.		
May 25 . .	15 21 57.42	7.5
ι DRACONIS, +59° 25'.		
May 22 . .	15 22 2.55	4.5
(*)−31° 51'.		
May 4 . .	15 22 21.54	8.5
20 . .	21.58	8.5
(*)−33° 8'.		
May 13 . .	15 22 28.92	7.6
June 17 . .	28.96	8.0
LACAILLE 6410, −37° 36'.		
May 11 . .	15 24 4.94	7.5
B. A. C. 5109, −19° 13'.		
May 15 . .	15 25 8.81	
ζ⁴ LIBRÆ, −16° 25'.		
May 13 . .	15 24 34.64	5.0
15 . .	34.78	6.0
RADCLIFFE 3398, +55° 39'.		
May 22 . .	15 25 35.60	7.0
B. A. C. 5117, −24° 45'.		
May 4 . .	15 26 11.69	6.0
17 . .	11.63	7.3

	h. m. s.	Mag.
ν¹ BOOTIS, +41° 16'.		
May 20 . .	15 26 15.33	
O. ARG. S. 14674, −24° 45'.		
May 4 . .	15 26 22.95	7.0
LALANDE 28347, +37° 3'.		
May 25 . .	15 26 25.63	6.5
June 12 . .	25.64	7.0
(*)−38° 39'.		
June 5 . .	15 27 2.76	8.0
(*)−23° 46'.		
June 17 . .	15 27 20.68	8.0
(*)−23° 46'.		
June 17 . .	15 28 0.52	9.2
B. A. C. 5133, −28° 34'.		
May 11 . .	15 28 17.02	6.0
LALANDE 28391, (1st *,) +27° 8'.		
June 12 . .	15 28 21.31	
LALANDE 28391, (2d *,) +27° 8'.		
June 12 . .	15 28 21.79	
(*)−32° 12'.		
May 13 . .	15 28 35.84	8.0
(*)−32° 9'.		
May 13 . .	15 28 38.11	8.3
(*)−22° 10'.		
May 25 . .	15 29 15.50	9.5
B. A. C. 5142, −28° 8'.		
May 22 . .	15 29 18.71	6.5
(*)−32° 3'.		
May 15 . .	15 29 20.50	8.5
20 . .	20.50	
LALANDE 28414, −22° 43'.		
June 19 . .	15 30 9.63	
(*)−36° 0'.		
June 17 . .	15 31 29.51	8.5
919 SCHWERD, +80° 12'.		
June 17 . .	15 33 49.35	
ζ CORONÆ BOREALIS, (1st *,) +37° 3'.		
May 4 . .	15 34 28.59	6.5
ζ CORONÆ BOREALIS, (2d *,) +37° 3'.		
May 4 . .	15 34 28.89	5.0
O. ARG. S. 14787, −16° 57'.		
May 11 . .	15 34 46.94	9.0
τ⁶ SERPENTIS, +16° 26'.		
May 13 . .	15 35 0.43	6.0

	h. m. s.	Mag.
LALANDE 28641, +37° 26'.		
May 15 . .	15 35 38.31	7.5
20 . .	38.24	7.5
(*)−17° 17'.		
May 25 . .	15 35 40.50	10.0
LALANDE 28607, −10° 30'.		
May 11 . .	15 36 6.60	7.0
O. ARG. S. 14835, −23° 6'.		
May 15 . .	15 37 48.24	9.0
α SERPENTIS, +6° 50'.		
May 4 . .	15 37 52.03	
June 5 . .	51.92	
17 . .	51.97	
WEISSE 14851, −18° 57'.		
May 11 . .	15 38 40.75	9.0
O. ARG. S. 14855, −25° 32'.		
May 25 . .	15 38 59.53	9.0
O. ARG. S. 14861, −25° 30'.		
May 25 . .	15 39 13.24	9.5
O. ARG. S. 14882, −19° 18'.		
May 11 . .	15 40 19.02	8.5
O. ARG. S. 14909, −19° 25'.		
May 11 . .	10 41 30.43	8.8
LACAILLE 6555, −32° 18'.		
May 15 . .	15 43 20.08	7.0
ε SERPENTIS, +4° 52'.		
May 20 . .	15 44 20.17	
(*)−25° 34'.		
July 3 . .	15 44 54.27	8.3
(*)−25° 33'.		
June 5 . .	15 44 58.20	9.5
July 3 . .	58.48	
LACAILLE 6582, −39° 27'.		
June 5 . .	15 45 49.84	7.0
κ CORONÆ BOREALIS, +36° 3'.		
May 20 . .	15 46 20.07	
(*)−18° 34'.		
May 11 . .	15 46 27.04	7.5
15 . .	27.02	7.2
B. A. C. 5258, −26° 57'.		
May 25 . .	15 46 35.46	6.0
(*)−2° 38'.		
June 12 . .	15 46 36.64	8.0
18 URSÆ MINORIS, +80° 23'.		
June 17 . .	15 46 52.24	7.0
19 . .	51.90	7.0

	h. m. s.	Mag.
WEISSE (2) 1180, +43° 2'.		
July 3 . .	15 47 32.45	8.0
4 SCORPII, −25° 53'.		
May 13 . .	15 47 38.95	6.0
25 . .	38.89	5.5
B. A. C. 5266, −26° 22'.		
June 3 . .	15 47 48.92	7.0
(*)−16° 52'.		
June 11 . .	15 47 53.75	9.0
WEISSE (2) 1201, +42° 58'.		
June 26 . .	15 48 18.31	8.3
July 3 . .	18.01	8.0
ξ LUPI, (1st *,) −33° 35'.		
June 5 . .	15 48 35.06	
ξ LUPI, (2d *,) −33° 35'.		
June 5 . .	15 48 35.70	
O. ARG. S. 15067, −16° 43'.		
May 11 . .	15 50 33.79	7.3
B. A. C. 5297, −29° 15'.		
May 13 . .	15 51 35.47	7.8
ε CORONÆ BOREALIS, +27° 15'.		
May 25 . .	15 52 12.32	
June 17 . .	12.33	5.0
19 . .	12.46	
July 6 . .	12.43	
WEISSE 976, −10° 54'.		
May 15 . .	15 52 27.96	9.5
δ SCORPII, −22° 15'.		
June 26 . .	15 52 39.00	
LACAILLE 6641, −36° 21'.		
June 5 . .	15 53 34.55	6.5
LALANDE 29146, +38° 12'.		
May 11 . .	15 53 40.72	6.5
(*)+26° 18'.		
June 11 . .	15 53 54.04	9.0
O. ARG. S. 15147, −23° 48'.		
May 13 . .	15 55 11.01	7.2
LACAILLE 6658, −37° 28'.		
June 3 . .	15 56 2.33	8.0
WEISSE 1057, +11° 19'.		
May 15 . .	15 56 33.87	9.0
O. ARG. S. 15183, −23° 16'.		
May 25 . .	15 57 11.19	9.0
O. ARG. N. 15839, +70° 1'.		
May 22 . .	15 57 25.96	9.0
June 17 . .	26.31	8.5
19 . .	26.23	8.5

Date	h.	m.	s.	Mag.
Weisse 1081, +6° 21'.				
June 5	15	57	47.14	7.5
β^1 Scorpii, −19° 27'.				
July 3	15	57	52.83	
27			52.87	
Weisse 1086, +6° 22'.				
June 5	15	57	56.31	7.0
B. A. C. 5333, −19° 18'.				
May 11	15	58	11.82	6.5
O. Arg. N. 15864, +70° 5'.				
May 22	15	58	38.36	8.6
June 17			38.63	8.2
19			38.57	8.2
O. Arg. S. 15225, −22° 34'.				
May 11	15	59	9.20	8.3
O. Arg. S. 15227, −22° 30'.				
May 11	15	59	11.21	7.3
O. Arg. N. 15872, +69° 36'.				
June 26	15	59	31.89	9.0
Lalande 29306, −17° 35'.				
May 15	15	59	46.80	7.5
June 12			46.81	8.2
O. Arg. S. 15040, −20° 31'.				
May 13	15	59	47.05	8.0
O. Arg. S. 15042, −20° 35'.				
May 13	15	59	49.04	8.8
O. Arg. N. 15882, +69° 36'.				
June 26	15	59	53.48	8.8
O. Arg. S. 15292, −26° 6'.				
May 25	16	1	51.02	7.5
O. Arg. S. 15295, −17° 0'.				
June 5	16	1	56.84	9.0
O. Arg. S. 15300, −16° 55'.				
June 5	16	1	58.56	9.2
κ Herculis, +17° 24'.				
May 15	16	2	12.76	5.5
B. A. C. 5368, +17° 25'.				
May 15	16	2	13.04	
48 Serpentis, +17° 0'.				
May 13	16	5	35.68	
δ Ophiuchi, −3° 21'.				
May 11	16	7	32.11	
15			32.12	
June 18			32.12	
July 27			32.13	
29			32.10	

Date	h.	m.	s.	Mag.
O. Arg. N. 16014, +70° 40'.				
May 25	16	8	15.23	8.5
June 5			14.89	8.8
Lalande 29654, +38° 24'.				
June 12	16	8	35.31	7.5
Lacaille 6765, −34° 30'.				
June 17	16	8	59.54	
(*)−34° 36'.				
June 18	16	11	59.64	9.0
Weisse 221, +8° 59'.				
June 5	16	12	19.31	9.0
(*)+79° 34'.				
May 25	16	12	29.82	9.5
(*)+79° 32'.				
May 25	16	12	53.55	9.3
(*)+38° 1'.				
May 11	16	13	15.28	8.0
13			15.29	
(*)−27° 17'.				
June 18	16	13	15.85	9.0
(*)+37° 46'.				
May 15	16	13	16.62	
June 12			16.80	8.5
17			16.78	8.3
Lalande 29766, +38° 4'.				
May 13	16	14	22.89	6.0
15			23.16	6.5
B. A. C. 5741, −31° 25'.				
June 5	16	17	24.68	8.8
(*)−24° 10'.				
June 17	16	17	28.55	9.2
O. Arg. S. 15612, −24° 10'.				
May 25	16	17	33.38	8.5
June 17			33.33	8.0
O. Arg. S. 15615, −23° 9'.				
June 12	16	17	36.63	8.0
18			36.61	8.0
ρ Ophiuchi, (N. *,) −23° 7'.				
June 19	16	17	47.56	
26			47.43	
ρ Ophiuchi, (S. *,) −23° 7'.				
June 19	16	17	47.56	
26			47.55	
Weisse (2) 616, +38° 12'.				
May 25	16	20	50.10	
June 5			49.95	
η Ursæ Majoris, +76° 3'.				
June 3	16	21	20.04	
17			20.26	6.0

Date	h.	m.	s.	Mag.
O. Arg. S. 15671, −24° 50'.				
June 18	16	22	5.55	
Weisse 393, −13° 17'.				
June 18	16	22	7.95	7.5
22 Scorpii, −24° 48'.				
June 12	16	22	18.74	
Weisse 462, −10° 15'.				
June 18	16	25	46.49	7.5
Weisse (2) 787, +38° 20'.				
May 25	16	26	22.27	7.5
June 5			22.05	7.5
(*)−33° 58'.				
June 17	16	26	32.58	8.2
Lacaille 6894, −35° 39'.				
June 17	16	28	5.07	6.5
Weisse (2) 889, +35° 45'.				
May 25	16	29	24.46	7.5
Weisse 1544, −8° 36'.				
June 19	16	29	27.49	7.5
ζ Ophiuchi, −10° 27'.				
July 20	16	30	0.13	
22			0.06	
26			0.00	
27			0.18	
29			0.11	
30			0.08	
31			0.04	
Aug. 7			0.10	
O. Arg. S. 15790, −28° 38'.				
June 19	16	30	22.56	9.0
Lacaille 6910, −36° 53'.				
July 9	16	30	23.38	7.0
O. Arg. S. 15782, −29° 38'.				
June 5	16	30	33.20	9.0
26			33.53	9.0
O. Arg. S. 15788, −23° 57'.				
June 18	16	30	42.14	8.5
O. Arg. S 15790, −28° 39'.				
June 17	16	30	58.39	7.7
Lacaille 6922, −33° 30'.				
June 26	16	31	45.39	7.0
Lacaille 6924, −35° 25'.				
July 3	16	32	2.22	6.5
Lacaille 6923, −36° 53'.				
July 9	16	32	4.49	8.0
O. Arg. S. 15812, −26° 5'.				
May 25	16	32	13.69	

Date	h.	m.	s.	Mag.
Lacaille 6931, −32° 34'.				
July 3	16	33	19.39	7.0
O. Arg. S. 15850, −16° 7'.				
June 19	16	33	24.57	
(*)−32° 35'.				
July 3	16	33	27.11	
O. Arg. S. 15834, −24° 9'.				
June 17	16	33	33.92	7.5
O. Arg. S. 15841, −30° 12'.				
July 9	16	33	50.39	8.5
(*)−39° 14'.				
June 18	16	34	9.17	8.5
O. Arg. S. 15850, −16° 6'.				
June 19	16	34	22.56	8.0
(*)+38° 26'.				
May 25	16	35	14.51	7.7
June 17			14.67	8.0
B. A. C. 5589, −30° 59'.				
June 5	16	35	15.68	
12			15.94	
(*)−39° 7'.				
June 18	16	35	49.49	8.0
B. A. C. 5595, −26° 33'.				
July 6	16	35	50.18	
Lacaille 6965, −33° 36'.				
June 19	16	37	6.35	6.5
Lacaille 6976, −32° 42'.				
June 17	16	38	16.09	7.5
η Herculis, +39° 10'.				
June 26	16	38	26.41	
Lacaille 6987, −33° 47'.				
June 17	16	39	49.04	
Lacaille 6984, −30° 58'.				
May 25	16	40	6.02	7.0
(*)−24° 5'.				
June 18	16	41	39.95	8.0
(*)−4° 6'.				
June 19	16	42	4.36	9.5
Weisse 794, +13° 51'.				
Aug. 14	16	42	8.32	6.0
μ^1 Scorpii, −37° 50'.				
June 12	16	43	3.90	
(*)−40° 26'.				
June 18	16	43	4.99	8.0

B. A. C. 5639, −40° 29′.

	h. m. s.	Mag.
June 18 . .	16 43 26.08	7.0

μ^2 Scorpii, −37° 48′.

June 12 . . 16 31 31.84

O. Arg. S. 16031, −21° 25′.

June 19 . . 16 43 45.89 7.7

(*)−36° 47′.

June 17 . . 16 44 5.41 7.0
July 20 . . 5.40 7.0

(*)−21° 8′.

June 26 . . 16 44 12.82 9.0
July 6 . . 12.74 9.0

(*)−4° 55′.

July 26 . . 16 44 26.90 9.0

O. Arg. S. 16050, −26° 32′.

July 9 . . 16 44 53.31 8.5

O. Arg. S. 16078, −25° 37′.

June 5 . . 16 46 21.83 7.0

B. A. C. 5672, −30° 49′.

June 17 . . 16 46 27.68 7.0

O. Arg. S. 16082, −25° 36′.

June 5 . . 16 46 32.92 8.0

(*)−31° 6′.

June 12 . . 16 46 48.27 7.5
July 9 . . 48.19 8.0

O. Arg. S. 16100, −29° 4′.

June 26 . . 16 46 50.80

(*)−36° 58′.

July 3 . . 16 47 24.24 7.0
24 . . 24.46 8.0

B. A. C. 5672, −30° 49′.

May 25 . . 16 47 27.74 7.5

(*)−30° 5′.

July 6 . . 16 47 51.83 9.0
20 . . 51.80 8.0

O. Arg. S. 16120, −30° 22′.

July 21 . . 16 48 20.39

B. A. C. 5705, +77° 44′.

July 27 . . 16 48 54.42

24 Ophiuchi, −22° 56′.

July 13 . . 16 48 57.55

(*)−30° 0′.

June 17 . . 16 49 50.67
18 . . 50.64
26 . . 50.68
July 26 . . 50.63
30 . . 50.67

(*)−25° 51′.

	h. m. s.	Mag.
July 6 . .	16 50 15.99	

(*)−30° 0′.

June 18 . . 16 50 19.98

Lalande 30851, +37° 32′.

July 3 . . 16 50 28.57 8.0
13 . . 28.60 7.5

(*)−29° 58′.

June 26 . . 16 50 31.24 9.0

O. Arg. S. 16163, −26° 50′.

June 5 . . 16 50 36.10 9.0
19 . . 36.26 8.3

κ Ophiuchi, +9° 35′.

July 9 . . 16 51 30.89
29 . . 30.89
31 . . 30.88
Aug. 3 . . 30.96
7 . . 31.02
Sept. 10 . . 30.93

O. Arg. S. 16184, −30° 2′.

July 20 . . 16 52 6.72 8.0

(*)−37° 8′.

July 21 . . 16 52 24.68

(*)+38° 22′.

May 25 . . 16 53 3.48 8.0

(*)−37° 7′.

July 24 . . 16 53 8.75
27 . . 8.66 7.5
30 . . 8.80 9.0

O. Arg. S. 16206, −27° 5′.

June 17 . . 16 53 13.73 8.0

Lacaille 7087, −33° 10′.

June 19 . . 16 53 13.99 7.0

(*)−20° 14′.

June 26 . . 16 53 15.40 9.2

O. Arg. S. 16208, −27° 5′.

June 17 . . 16 53 22.37

B. A. C. 5718, −31° 58′.

June 12 . . 16 53 28.23 6.0

O. Arg. S. 16213, −20° 15′.

June 5 . . 16 53 33.20 7.0
26 . . 33.23 7.0

B. A. C. 5721, −32° 1′.

July 3 . . 16 54 2.58 7.0

O. Arg. S. 16233, −20° 24′.

July 6 . . 16 54 20.19

(*)−29° 57′.

June 18 . . 16 55 12.67 8.0
July 13 . . 12.45 9.0

(*)−24° 3′.

	h. m. s.	Mag.
June 19 . .	16 55 46.16	9.0

(*)−24° 3′.

June 19 . . 16 56 1.96 8.2

B. A. C. 5731, −28° 43′.

June 18 . . 16 56 16.20 5.0

d Herculis, +33° 46′.

June 24 . . 16 56 48.37 6.0
26 . . 48.36

B. A. C. 5746, −23° 19′.

June 17 . . 16 57 3.18

B. A. C. 5748, −10° 55′.

May 25 . . 16 57 21.43

O. Arg. S. 16360, −24° 15′.

June 19 . . 17 0 44.55 9.0

(*)−27° 14′.

July 13 . . 17 0 53.97 9.0

O. Arg. S. 16366, −27° 14′.

June 17 . . 17 0 58.91 8.5
July 13 . . 58.80

(*)−24° 11′.

July 19 . . 17 1 19.52 9.5

Groombridge 2418, +73° 28′.

June 5 . . 17 3 8.30 7.5
12 . . 8.19 7.5
July 20 . . 8.49

Lacaille 7160, −38° 40′.

July 26 . . 17 3 20.94

(*)−37° 21′.

June 17 . . 17 3 59.81 8.5

Groombridge 2420, +73° 30′.

July 20 . . 17 4 3.55

(*)−35° 9′.

July 6 . . 17 5 10.29 8.5
13 . . 9.81 8.5

Lacaille 7171, −39° 37′.

June 26 . . 17 5 27.32 7.0
July 3 . . 27.25

B. A. C. 5796, −27° 40′.

May 25 . . 17 5 53.36

(*)−33° 35′.

July 3 . . 17 6 26.67

B. A. C. 5807, −33° 35′.

July 3 . . 17 7 17.94 6.0

B. A. C. 5809, −30° 12′.

July 13 . . 17 7 33.24 5.5

O. Arg. N. 16908, +59° 20′.

	h. m. s.	Mag.
July 20 . .	17 7 40.11	8.5

Weisse 107, +14° 44′.

July 15 . . 17 7 52.78 8.0

(*)−35° 20′.

June 17 . . 17 8 12.17 9.2

Weisse 115, +14° 28′.

Aug. 3 . . 17 8 19.66 8.3

O. Arg. S. 16533, −27° 24′.

July 24 . . 17 8 22.53 8.3
30 . . 22.45 8.5

Weisse 117, +14° 43′.

July 15 . . 17 8 24.88 7.5

B. A. C. 5818, −30° 12′.

July 21 . . 17 8 35.58 7.0

(*)−30° 12′.

July 21 17 . . 8 41.20 9.0

α Herculis, (1st *,) +14° 33′.

June 5 . . 17 8 43.22
15 . . 43.17
31 . . 43.20
Aug. 3 . . 43.13
7 . . 43.24

α Herculis, (2d *,) +14° 33′.

Aug. 3 . . 17 8 43.54 8.0

(*)+14° 27′.

Aug. 2 . . 17 8 57.28

B. A. C. 5820, −30° 0′.

July 22 . . 17 9 2.64

(*)−35° 5′.

June 26 . . 17 9 6.13 8.5
30 . . 6.00 8.5

38 Ophiuchi, −26° 29′.

May 25 . . 17 9 34.94 7.0

B. A. C. 5824, −32° 25′.

July 6 . . 17 9 52.52 6.0

O. Arg. S. 16574, −29° 49′.

June 18 . . 17 10 10.57
27 . . 10.42

O. Arg. S. 16586, −22° 33′.

June 17 . . 17 11 4.10 8.0

O. Arg. S. 16600, −22° 51′.

June 5 . . 17 11 39.14 9.0

B. A. C. 5839, −17° 37′.

May 25 . . 17 12 19.47 5.0

Lalande 31492, −5° 23′.

June 12 . . 17 13 22.84 8.0

	h. m. s.	Mag.
(*)—35° 14'.		
July 3 . .	17 13 53.11	
20 . .	53.18	
θ Ophiuchi, —24° 51'.		
June 18 . .	17 14 1.66	4.0
July 15 . .	1.50	6.0
Lacaille 7245, —37° 6'.		
July 6 . .	17 14 5.49	6.0
13 . .	5.19	5.0
(*)—27° 53'.		
June 5 . .	17 14 6.56	8.5
17 . .	6.58	7.7
Lalande 31543, —17° 35'		
June 26 . .	17 14 22.45	8.5
(*)—27° 50'.		
July 20 . .	17 15 6.92	8.5
(*)+32° 43'.		
July 24 . .	17 15 13.47	9.0
27 . .	13.32	9.0
(*)—27° 50'.		
July 21 . .	17 15 19.74	
Lacaille 7259, —34° 35'.		
July 3 . .	17 15 30.49	6.0
O. Arg. S. 16710, (1st *,) —30° 25'.		
July 13 . .	17 16 7.47	8.5
O. Arg. S. 16710, (2d *,) —30° 25'.		
July 13 . .	17 16 7.62	8.0
Weisse (2) 454, +36° 50'.		
July 22 . .	17 16 14.69	
24 . .	14.61	
Lacaille 7268, —34° 34'.		
June 5 . .	17 16 24.67	5.0
17 . .	24.64	
Lacaille 7269, —34° 20'.		
June 5 . .	17 16 31.32	7.3
July 6 . .	31.51	
(*)+35° 15'.		
July 15 . .	17 16 33.70	9.0
27 . .	33.63	8.5
Weisse (2) 486, +17° 0'.		
June 12 . .	17 17 37.46	9.0
O. Arg. S. 16749, —28° 31'.		
July 20 . .	17 17 38.31	8.5
Weisse (2) 487, +17° 2'.		
June 12 . .	17 17 42.78	8.0
B. A. C. 5875, —28° 17'.		
June 18 . .	17 17 55.47	7.0

	h. m. s.	Mag.
Lacaille 7282, —33° 59'.		
July 13 . .	17 18 5.57	7.0
b Ophiuchi, —24° 3'.		
May 25 . .	17 18 25.99	
July 3 . .	25.98	
O. Arg. S. 16802, —31° 5'.		
June 5 . .	17 19 48.45	7.0
Weisse (2) 554, +38° 43'.		
June 26 . .	17 20 39.84	6.0
Lalande 31790, +37° 19'.		
June 17 . .	17 20 40.72	7.5
B. A. C. 5897, —31° 23'.		
June 18 . .	17 20 48.19	7.0
July 21 . .	48.29	
(*)+37° 50'.		
June 12 . .	17 21 3.24	7.5
Weisse (2) 596, +17° 5'.		
June 26 . .	17 21 12.72	7.7
O. Arg. S. 16832, —15° 55',		
July 13 . .	17 21 27.00	9.0
O. Arg. S. 16833, —15° 56'.		
July 3 . .	17 21 34.32	9.0
13 . .	34.27	8.2
(*)—17° 41'.		
July 6 . .	17 21 44.10	9.0
O. Arg. S. 16842, —15° 54'.		
June 19 . .	17 22 0.87	7.5
July 3 . .	0.87	7.0
13 . .	0.63	7.5
15 . .	0.76	8.0
O. Arg. S. 16847, —17° 41'.		
July 6 . .	17 22 6.88	
O. Arg. S. 16854, —17° 39'.		
July 6 . .	17 22 24.25	7.8
O. Arg. S. 16856, —15° 53'.		
June 19 . .	17 22 24.83	8.5
July 13 . .	24.80	7.5
15 . .	24.91	9.0
(*)—31° 46'.		
June 5 . .	17 23 7.62	9.0
O. Arg. S. 16875, —15° 54'.		
July 3 . .	17 23 20.63	
O. Arg. S. 16908, —15° 59'.		
June 12 . .	17 24 51.44	9.0
(*)—32° 26'.		
June 18 . .	17 25 32.94	9.0

	h. m. s.	Mag.
(*)—32° 26'.		
June 18 . .	17 25 47.51	9.0
(*)—32° 26'.		
June 5 . .	17 25 52.38	9.0
17 . .	52.55	8.5
July 6 . .	52.58	9.0
(*)—32° 26'.		
June 17 . .	17 25 55.27	8.3
July 6 . .	55.17	9.0
(*)—38° 34'.		
July 3 . .	17 26 8.31	
B. A. C. 5921, —32° 26'.		
June 5 . .	17 26 12.88	6.0
(*)—38° 34'.		
July 3 . .	17 26 20.22	
Lalande 31931, —17° 44'.		
June 19 . .	17 26 24.37	7.5
(*)—38° 34'.		
July 3 . .	17 26 36.93	
O. Arg. S. 16952, —18° 7'.		
June 12 . .	17 26 57.22	8.0
July 9 . .	57.24	8.0
O. Arg. S. 16958, —18° 8'.		
June 26 . .	17 27 18.78	8.7
O. Arg. S. 16966, —18° 8'.		
June 26 . .	17 27 43.64	
α Ophiuchi, +12° 40'.		
June 17 . .	17 28 54.04	
July 13 . .	54.00	
20 . .	54.09	
22 . .	54.12	
27 . .	53.95	
30 . .	54.00	
Aug. 3 . .	54.06	
10 . .	54.06	
30 . .	54.07	
Sept. 10 . .	54.06	
(*)—37° 19'.		
June 19 . .	19 29 5.58	9.0
(*)—20° 36'.		
June 5 . .	17 29 46.12	8.5
12 . .	46.21	8.5
(*)—35° 8'.		
July 13 . .	17 30 48.32	9.0
(*)—35° 14'.		
June 18 . .	17 30 49.05	
O. Arg. S. 17016, —26° 51'.		
June 26 . .	17 30 58.81	7.2
B. A. C. 5955, —29° 26'.		
July 6 . .	17 31 3.23	6.0

	h. m. s.	Mag.
(*)—32° 11'.		
June 12 . .	17 31 12.49	8.0
(*)—32° 9'.		
June 12 . .	17 31 42.58	
(*)—35° 8'.		
June 18 . .	17 31 23.53	
(*)—38° 36'.		
July 3 . .	17 32 56.90	
O. Arg. S. 17063, —18° 0'.		
June 5 . .	17 33 7.67	8.0
(*)—32° 5'.		
June 19 . .	17 33 9.93	7.7
O. Arg. S. 17068, —18° 4'.		
June 5 . .	17 33 31.70	8.5
O. Arg. S. 17070, —19° 23'.		
July 21 . .	17 33 37.52	9.0
26 . .	37.19	
(*)—35° 25'.		
July 17 . .	17 33 39.07	7.5
18 . .	39.26	7.0
(*)—34° 15'.		
June 26 . .	17 33 55.95	8.0
o Serpentis, —12° 48'.		
Aug. 16 . .	17 34 6.52	
O. Arg. S. 17098, —19° 20'.		
July 3 . .	17 34 43.63	9.0
21 . .	43.80	9.0
26 . .	43.53	
(*)—35° 14'.		
July 6 . .	17 34 44.16	6.0
(*)—28° 0'.		
July 13 . .	17 35 2.89	8.5
(*)—35° 26'.		
July 20 . .	17 35 8.12	8.0
(*)—34° 23'.		
June 26 . .	17 35 8.73	8.2
Lalande 32322, +37° 18'.		
June 19 . .	17 35 14.21	8.0
(*)—31° 12'.		
July 24 . .	17 35 40.22	9.0
(*)—35° 7'.		
June 18 . .	17 36 37.41	8.0
O. Arg. S. 17159, —21° 39'.		
Aug. 18 . .	17 37 24.53	9.0
26 . .	24.41	9.0

	h. m. s.	Mag.
Weisse 713, −7° 48'.		
June 5 . .	17 37 31.10	8.0
Lacaille 7435, −35° 50'.		
June 17 . .	17 39 30.07	6.0
Lacaille 7443, −38° 4'.		
July 13 . .	17 39 32.35	6.5
(*)−38° 5'.		
July 13 . .	17 40 2.27	8.0
Lacaille 7443, −38° 52'.		
June 5 . .	17 40 24.80	7.5
B. A. C. 6016, −31° 39'.		
June 19 . .	17 40 43.80	5.0
Lacaille 5448, −35° 19'.		
July 6 . .	17 40 46.56	7.0
20 . .	46.39	7.0
Aug. 26 . .	46.49	
B. A. C. 6017, −30° 31'.		
July 3 . .	17 40 54.60	7.0
9 . .	54.61	7.5
ν^2 Scorpii, −40° 2'.		
June 26 . .	17 41 5.62	5.0
(*)−35° 18'.		
July 20 . .	17 41 17.84	8.5
μ Herculis, +27° 48'.		
June 18 . .	17 41 22.39	
Aug. 16 . .	22.21	
19 . .	22.24	
Sept. 1 . .	22.23	
(*)−35° 19'.		
July 20 . .	17 41 30.44	
Aug. 10 . .	30.44	9.0
26 . .	30.35	
(*)−35° 19'.		
July 20 . .	17 42 23.59	8.0
Aug. 10 . .	23.41	8.0
26 . .	23.91	
27 . .	23.72	
(*)−35° 19'.		
July 20 . .	17 42 25.42	8.3
Aug. 10 . .	25.33	
26 . .	25.56	
27 . .	25.66	
(*)−22° 54'.		
July 21 . .	17 42 26.50	9.0
(*)−28° 37'.		
June 26 . .	17 42 49.24	8.0
B. A. C. 6026, (1st *,) −30.31'.		
July 3 . .	17 42 50.30	7.2
9 . .	50.22	7.5
B. A. C. 6026, (2d *,) −30° 31'.		
July 3 . .	17 42 50.52	8.2

	h. m. s.	Mag.
(*)−35° 15'.		
Aug. 10 . .	17 43 8.81	8.5
(*)−31° 20'.		
June 19 . .	17 43 10.13	7.0
Weisse 835, −12° 38'.		
July 13 . .	17 43 11.08	9.0
O. Arg. S. 17275, −17° 12'.		
Aug. 3 . .	17 43 23.28	8.8
Weisse (2) 1394, +36° 10'.		
July 24 . .	17 43 24.63	
(*)+36° 35'.		
July 31 . .	17 43 25.60	
Weisse (2) 1398, +36° 12'.		
July 24 . .	17 43 30.59	7.5
B. A. C. 6029, −34° 45'.		
June 5 . .	17 43 33.34	6.0
B. A. C. 6031, −34° 22'.		
Aug. 6 . .	17 43 41.30	5.0
(*)−31° 16'.		
June 19 . .	17 43 42.14	8.5
Lalande 32631, +38° 17'.		
June 17 . .	17 43 49.69	7.0
July 15 . .	49.32	7.5
O. Arg. S. 17282, −25° 47'.		
July 27 . .	17 43 51.57	7.0
Aug. 27 . .	51.89	
Lacaille 7469, −31° 15'.		
June 19 . .	17 43 52.08	7.5
(*)−35° 15'.		
Aug. 10 . .	17 44 13.07	
(*)−34° 51'.		
July 3 . .	17 44 14.60	
(*)−31° 58'.		
Aug. 6 . .	17 44 15.74	
(*)−35° 15'.		
Aug. 10 . .	17 44 21.08	
O. Arg. S. 17291, −27° 3'.		
Aug. 20 . .	17 44 27.57	
Sept. 1 . .	27.59	
(*)+36° 35'.		
July 21 . .	17 44 29.48	8.0
(*)−34° 58'.		
July 3 . .	17 44 42.32	
Aug. 7 . .	42.20	
27 . .	42.42	

	h. m. s.	Mag.
(*)−34° 54'.		
Aug. 7 . .	17 44 42.82	7.5
(*)−34° 41'.		
July 26 . .	17 44 49.14	
(*)−34° 41'.		
July 6 . .	17 45 3.94	7.0
(*)−34° 41'.		
July 6 . .	17 45 5.33	7.0
(*)−28° 1'.		
June 26 . .	17 45 9.15	7.5
Aug. 19 . .	9.06	7.5
(*)−25° 43'.		
Aug. 18 . .	17 45 9.90	
Sept. 1 . .	9.96	9.0
(*)−34° 41'.		
July 30 . .	17 45 14.72	8.0
(*)−34° 47'.		
July 20 . .	17 45 17.80	7.0
(*)−34° 32'.		
July 13 . .	17 45 20.24	8.0
(*)+37° 45'.		
Aug. 7 . .	17 45 28.88	7.3
(*)−34° 47'.		
July 20 . .	17 45 32.68	8.3
(*)−34° 40'.		
July 30 . .	17 45 34.40	8.3
Weisse 915, +8° 43'.		
Aug. 27 . .	17 45 54.92	
(*)−34° 32'.		
July 13 . .	17 46 8.69	6.5
Weisse 929, +8° 43'.		
Aug. 27 . .	17 46 25.86	
30 . .	25.88	
(*)+8° 43'.		
Aug. 16 . .	17 46 41.61	8.5
Weisse 934, +8° 43'.		
Aug. 16 . .	17 46 44.20	
(*)−28° 44'.		
June 26 . .	17 46 44.44	9.0
Lalande 32747, +38° 29'.		
June 17 . .	17 46 46.00	6.5
July 15 . .	45.91	7.5
24 . .	45.92	7.0
(*)−36° 55'.		
June 5 . .	17 47 0.39	8.0
Aug. 10 . .	0.38	8.5

	h. m. s.	Mag.
(*)−36° 57'.		
June 5 . .	17 47 6.32	8.0
July 26 . .	6.43	
Aug. 10 . .	6.38	8.5
O. Arg. S. 17350, −26° 54'.		
July 9 . .	17 47 29.53	8.5
(*)−31° 54'.		
Aug. 18 . .	17 47 33.10	
O. Arg. S. 17354, −27° 0'.		
Aug. 9 . .	17 47 43.53	
(*)−34° 37'.		
July 13 . .	17 47 44.02	8.0
20 . .	44.25	8.3
(*)−34° 37'.		
June 18 . .	17 47 44.64	8.5
B. A. C. 6062, +40° 1'.		
July 6 . .	17 47 50.70	6.0
(*)−34° 33'.		
July 13 . .	17 48 1.52	7.0
20 . .	1.73	8.0
(*)−34° 42'.		
June 18 . .	17 48 15.64	8.0
(*)−31° 35'.		
Aug. 6 . .	17 48 17.24	
O. Arg. S. 17378, −27° 4'.		
July 9 . .	17 48 48.22	9.0
(*)+38° 12'.		
July 24 . .	17 49 1.01	8.5
Aug. 3 . .	0.94	8.8
(*)−32° 2'.		
July 26 . .	17.49 1.54	
Aug. 30 . .	1.24	
B. A. C. 6066, −23° 54'.		
July 30 . .	17 49 10.78	7.0
(*)−31° 2'.		
July 26 . .	17 49 10.96	
O. Arg. S. 17394, −25° 3'.		
June 26 . .	17 49 33.57	8.0
(*)−38° 33'.		
June 17 . .	17 50 12.32	5.5
19 . .	12.56	6.5
Weisse 1014, +0° 5'.		
July 27 . .	17 50 24.79	
Lacaille 7514, −41° 28'.		
July 3 . .	17 50 27.56	6.0

	h.	m.	s.	Mag.
Weisse (2) 1601, (1st *,) +18° 21'.				
Aug. 10 . .	17	50	42.26	
Weisse (2) 1601, (2d *,) +18° 21'.				
July 12 . .	17	50	42.50	
Aug. 10 . .			42.40	
O. Arg. S. 17419, −26° 49'.				
June 5 . .	17	50	42.64	9.0
July 20 . .			42.74	
(*)−31° 25'.				
July 13 . .	17	50	49.48	8.0
(*)−31° 25'.				
June 18 . .	17	50	51.09	
O. Arg. S. 17433, −15° 35'.				
Aug. 9 . .	17	51	9.16	
(*)−31° 13'.				
Aug. 7 . .	17	51	9.99	9.0
(*)−36° 58'.				
July 21 . .	17	51	49.11	7.5
4 Sagittarii, −23° 48'.				
Aug. 16 . .	17	51	51.25	4.0
O. Arg. S. 17447, −25° 8'.				
June 26 . .	17	51	53.27	8.3
O. Arg. S. 17449, −25° 3'.				
June 26 . .	17	51	59.07	8.0
O. Arg. N. 17660, +51° 30'.				
July 15 . .	17	52	5.12	9.0
O. Arg. N. 17663, +51° 31'.				
July 15 . .	17	52	10.47	8.5
(*)−28° 40'.				
July 6 . .	17	52	28.47	8.5
(*)−38° 4'.				
June 17 . .	17	52	35.86	6.0
O. Arg. S. 17466, −24° 12'.				
June 19 . .	17	52	54.56	7.5
July 24 . .			54.66	
O. Arg. S. 17467, −24° 8'.				
June 19 . .	17	53	3.41	
O. Arg. S. 17469, −29° 34'.				
July 3 . .	17	53	8.60	8.0
O. Arg. S. 17503, −15° 38'.				
June 5 . .	17	54	22.27	9.0
Lalande 32974, −27° 49'.				
June 17 . .	17	54	42.87	5.5
B. A. C. 6098, −20° 43'.				
June 26 . .	17	54	51.98	6.5

	h.	m.	s.	Mag.
35 Draconis, +76° 59'.				
July 9 . .	17	35	17.03	5.5
O. Arg. S. 17535, −27° 44'.				
July 24 . .	17	55	44.67	9.3
O. Arg. S. 17538, −24° 15'.				
June 18 . .	17	55	54.13	7.0
O. Arg. S. 17541, −24° 22'.				
June 18 . .	17	55	58.86	7.0
B. A. C. 6103, −35° 54'.				
July 21 . .	17	56	5.42	7.0
O. Arg. S. 17558, −27° 51'.				
July 3 . .	17	56	30.21	9.0
Lacaille 7546, −37° 29'.				
June 17 . .	17	56	40.23	6.5
B. A. C. 6108, −25° 37'.				
June 19 . .	17	56	45.59	6.0
(*)−23° 36'.				
Aug. 10 . .	17	56	53.24	8.3
Lacaille 33089, −17° 2'.				
July 13 . .	17	57	4.78	7.5
γ^2 Sagittarii, −30° 25'.				
June 26 . .	17	57	27.40	
July 6 . .			27.45	
Aug. 13 . .			27.41	
Sept. 2 . .			27.35	
4 . .			27.50	
(*)−27° 48'.				
July 28 . .	17	57	43.51	
O. Arg. S. 17598, −24° 11'.				
July 13 . .	17	58	6.93	7.5
O. Arg. S. 17610, −25° 28'.				
July 30 . .	17	58	30.52	9.0
O. Arg. S. 17612, −24° 9'.				
July 13 . .	17	58	32.12	8.5
Rumker 6208, +45° 8'.				
July 9 . .	17	58	56.99	8.0
O. Arg. S. 17648, −21° 12'.				
June 18 . .	17	59	25.96	9.0
(*)−22° 54'.				
June 19 . .	17	59	49.03	
(*)−22° 54'.				
June 19 . .	17	59	57.18	7.5
July 3 . .			57.14	8.5
B. A. C. 6128, −44° 58'.				
June 26 . .	18	0	15.83	6.0
72 Ophiuchi, +9° 33'.				
July 15 . .	18	1	11.16	5.0

	h.	m.	s.	Mag.
Lacaille 7588, −32° 43'.				
July 6 . .	18	1	28.77	6.0
(*)+2° 32'.				
June 18 . .	18	1	37.02	
Weisse (2) 44, +36° 24'.				
June 5 . .	18	2	34.52	7.5
July 20 . .			34.70	7.7
(*)−39° 22'.				
June 17 . .	18	3	7.34	8.5
(*)−23° 22'.				
July 3 . .	18	3	13.68	8.5
Lacaille 7598, −39° 22'.				
June 17 . .	18	3	27.03	8.0
33 Washington, −17° 14'.				
July 9 . .	18	3	33.05	9.0
O. Arg. S. 17809, −19° 28'.				
July 15 . .	18	3	38.41	8.2
Dorpat 2288, +2° 31'.				
June 18 . .	18	3	51.33	7.0
(*)−28° 16'.				
June 26 . .	18	3	52.23	9.0
July 6 . .			52.05	
Lacaille 7605, −39° 11'.				
June 19 . .	18	3	57.60	6.5
O. Arg. S. 17793, −20° 24'.				
July 13 . .	18	4	5.21	7.5
(*)−20° 24'.				
July 13 . .	18	4	9.39	
O. Arg. S. 17796, −20° 25'.				
July 13 . .	18	4	12.74	
O. Arg. S. 17797, −28° 16'.				
July 6 . .	18	4	18.68	8.5
O. Arg. S. 17803, −28° 16'.				
July 6 . .	18	4	24.66	
(*)+36° 26'.				
July 9 . .	18	4	55.71	8.0
(*)+28° 27'.				
July 24 . .	18	5	19.23	6.5
31 . .			19.30	
O. Arg. S. 17833, −25° 11'.				
July 3 . .	18	5	21.32	8.3
Lalande 33472, +36° 26'.				
July 22 . .	18	5	27.58	
(*)−37° 40'.				
Aug. 9 . .	18	5	34.07	8.0

	h.	m.	s.	Mag.
(*)−21° 6'.				
July 21 . .	18	5	57.06	
Aug. 5 . .			56.87	9.5
μ Sagittarii, −21° 5'.				
June 5 . .	18	5	59.34	
18 . .			59.26	
19 . .			59.34	
July 20 . .			59.36	
26 . .			59.28	
(*)−21° 5'.				
July 21 . .	18	6	2.74	
Aug. 5 . .			2.48	
O. Arg. S. 17853, −21° 51'.				
Aug. 13 . .	18	6	5.10	
O. Arg. S. 17861, −28° 58'.				
Sept. 4 . .	18	6	18.03	7.3
O. Arg. S. 17871, −21° 44'.				
Aug. 13 . .	18	6	27.40	
14 . .			27.25	7.0
B. A. C. 6173, −29° 51'.				
Aug. 10 . .	18	6	45.97	7.5
(*)−18° 57'.				
Aug. 16 . .	18	6	51.35	9.2
(*)−18° 59'.				
Aug. 13 . .	18	6	54.63	
B. A. C. 6175, −32° 24'.				
June 17 . .	18	7	7.34	6.5
O. Arg. S. 17892, −18° 59'.				
Aug. 5 . .	18	7	21.01	8.0
(*)−18° 40'.				
July 3 . .	18	7	22.58	8.0
15 Sagittarii, −20° 46'.				
July 31 . .	18	7	27.58	
B. A. C. 6181, −31° 13'.				
Aug. 9 . .	18	7	46.15	
14 . .			46.06	
(*)−18° 40'.				
Aug. 2 . .	18	7	52.41	6.5
O. Arg. S. 17922, −25° 45'.				
July 6 . .	18	7	54.57	8.5
24 . .			54.59	8.5
O. Arg. S. 17927, −28° 58'.				
Sept. 4 . .	18	8	4.74	
(*)−30° 27'.				
July 13 . .	18	8	9.28	8.0
28 . .			9.30	8.0
(*)−27° 27'.				
June 19 . .	18	8	13.50	7.5

	h. m. s.	Mag.
O. Arg. S. 17956, −18° 51′.		
July 24 . .	18 8 58.96	
Lacaille 7646, −34° 11′.		
June 26 . .	18 8 59.09	7.0
(*)−34° 11′.		
June 26 . .	18 9 4.08	9.0
(*)−18° 37′.		
June 17 . .	18 9 11.33	9.0
B. A. C. 6192, −33° 26′.		
June 5 . .	18 9 16.90	6.0
July 20 . .	16.93	6.5
(*)−18° 51′.		
July 24 . .	18 9 33.77	
Lacaille 7657, −34° 44′.		
July 28 . .	18 9 50.66	6.5
B. A. C. 6194, −27° 5′.		
July 3 . .	18 9 54.97	6.0
22 . .	54.91	
Lalande 33598, −18° 51′.		
June 19 . .	18 10 12.33	6.0
O. Arg. S. 18000, −18° 45′.		
Aug. 5 . .	18 10 20.02	8.0
6 . .	20.24	
Lalande 33692, +37° 22′.		
July 15 . .	18 10 27.96	8.2
31 . .	27.95	
O. Arg. S. 18015, −18° 42′.		
Aug. 5 . .	18 11 5.22	
O. Arg. S. 18017, −18° 42′.		
Aug. 5 . .	18 11 6.05	
18 Sagittarii, − 30° 59′.		
June 17 . .	18 12 52.73	
Lalande 33748, −18° 55′.		
June 19 . .	18 13 44.17	6.0
(*)+37° 22′.		
July 27 . .	18 13 58.15	
Taylor 8458, −26° 29′.		
June 26 . .	18 14 15.28	
July 9 . .	15.15	
15 . .	15.11	
31 . .	15.04	
Aug. 9 . .	15.12	
(*)−26° 31′.		
July 9 . .	18 14 21.27	
(*)+85° 40′.		
Aug. 18 . .	18 14 30.91	
(*)−26° 31′.		
June 5 . .	18 14 31.49	9.0
26 . .	31.76	
July 6 . .	31.89	9.0
9 . .	31.58	
Aug. 19 . .	31.87	9.0

	h. m. s.	Mag.
(*)−26° 31′.		
June 5 . .	18 14 35.58	
26 . .	35.79	
July 6 . .	35.71	
Aug. 19 . .	35.96	
(*)−38° 39′.		
July 20 . .	18 15 35.17	9.0
(*)−26° 31′.		
June 26 . .	18 15 43.60	
July 9 . .	43.41	
(*)−38° 39′.		
Aug. 5 . .	18 15 59.75	8.0
O. Arg. S. 18151, −26° 31′.		
June 26 . .	18 16 4.30	
July 6 . .	4.37	
9 . .	4.22	
(*)−29° 36′.		
July 3 . .	18 16 7.12	
B. A. C. 6236, −32° 22′.		
June 19 . .	18 16 7.76	6.0
Aug. 10 . .	7.71	7.5
(*)−29° 36′.		
July 3 . .	18 16 8.61	
O. Arg. S. 18160, −26° 31′.		
June 26 . .	18 16 33.90	
July 6 . .	34.00	8.0
9 . .	33.78	
Lacaille 7694, −36° 4′.		
Aug. 2 . .	18 16 36.54	
(*)−32° 26′.		
July 20 . .	18 16 41.88	9.0
Lalande 33952, +36° 52′.		
July 15 . .	18 16 45.67	7.5
24 . .	45.57	8.0
(*)−32° 13′.		
Aug. 10 . .	18 17 4.80	
(*)−31° 49′.		
Aug. 19 . .	18 17 27.92	8.3
30 . .	27.93	7.5
(*)+36° 14′.		
July 22 . .	18 17 35.87	
Aug. 24 . .	35.86	7.0
21 Sagittarii, −20° 36′.		
July 20 . .	18 17 36.45	5.0
Aug. 17 . .	36.42	
O. Arg. S. 18198, −21° 7′.		
July 3 . .	18 17 52.69	9.0
Lalande 33997, +36° 50′		
July 15 . .	18 17 55.01	
24 . .	54.90	7.5

	h. m. s.	Mag.
B. A. C. 6249, −30° 28′.		
Aug. 30 . .	18 18 19.47	
(*)−36° 6′.		
June 17 . .	18 18 37.54	6.5
O. Arg. S. 18209, −23° 31′.		
Aug. 19 . .	18 18 47.05	8.0
30 . .	46.76	8.0
O. Arg. S. 18198, −21° 7′.		
June 5 . .	18 18 52.71	8.0
24 Ursæ Minoris, +86° 59′.		
July 31 . .	18 18 55.20	
Sept. 4 . .	54.69	6.0
λ Sagittarii, −25° 29′.		
Sept. 13 . .	18 19 56.88	
O. Arg. S. 18248, −17° 52′.		
July 27 . .	18 20 21.31	7.0
(*)−22° 54′.		
June 17 . .	18 20 34.68	
19 . .	34.55	
Aug. 5 . .	34.42	8.5
Lacaille 7728, −34° 1′.		
July 9 . .	18 21 1.82	7.5
Weisse 473, +0° 7′.		
July 15 . .	18 21 10.81	6.5
(*)−36° 54′.		
July 3 . .	18 21 27.69	8.0
6 . .	27.83	
B. A. C. 6279, −14° 38′.		
Sept. 13 . .	18 21 47.22	
(*)−32° 23′.		
June 17 . .	18 22 41.43	8.3
July 20 . .	41.59	7.5
O. Arg. S. 18317, −23° 24′.		
July 15 . .	18 23 26.29	7.0
(*)−33° 2′.		
July 21 . .	18 23 52.12	7.0
Aug. 24 . .	52.14	7.0
Lalande 34274, +35° 42′.		
July 9 . .	18 24 15.76	8.0
Lalande 34222, (1st *,) −22° 22′.		
July 26 . .	18 24 37.02	9.0
Lalande 34222, (2d *,) −22° 23′.		
July 26 . .	18 24 40.55	8.0
(*)−33° 2′.		
July 21 . .	18 24 40.58	9.0
(*)−36° 54′.		
July 6 . .	18 24 50.93	8.5

	h. m. s.	Mag.
(*)+61° 9′.		
July 20 . .	18 24 57.98	9.0
Aug. 6 . .	58.48	7.0
Sept. 2 . .	57.80	9.0
e Serpentis, −1° 6′.		
June 17 . .	18 25 14.13	6.0
B. A. C. 6304, −24° 12′.		
July 15 . .	18 25 17.44	6.0
24 . .	17.51	6.0
Aug. 18 . .	17.52	
B. A. C. 6309, −18° 28′.		
Aug. 2 . .	18 25 33.03	
14 . .	33.04	6.0
(*)−29° 12′.		
July 15 . .	18 25 50.64	7.0
B. A. C. 6310, −31° 0′.		
Aug. 5 . .	18 25 53.43	7.0
24 . .	53.68	7.0
(*)−31° 0′.		
Aug. 5 . .	18 26 1.74	9.0
24 . .	1.84	
(*)−36° 55′.		
July 3 . .	18 27 3.38	8.5
B. A. C. 6321, −29° 48′.		
June 19 . .	18 27 41.65	6.0
1 Aquilæ, −8° 20′.		
June 17 . .	18 28 7.91	
July 9 . .	7.90	
13 . .	7.88	
23 . .	7.89	
Aug. 5 . .	7.90	
Lacaille 34412, +37° 19′.		
July 6 . .	18 28 25.05	7.5
B. A. C. 6327, −28° 36′.		
July 15 . .	18 28 49.95	6.0
B. A. C. 6331, −25° 46′.		
July 3 . .	18 29 8.81	
(*)−21° 49′.		
June 26 . .	18 29 13.83	8.5
July 21 . .	13.92	
O. Arg. S. 18462, −21° 47′.		
June 26 . .	18 29 40.27	8.0
Lalande 34503, +38° 19′.		
July 22 . .	18 29 45.77	
31 . .	45.80	
(*)−23° 31′.		
July 20 . .	18 29 56.31	8.0
24 . .	56.24	7.8
O. Arg. S. 18468, −21° 49′.		
Aug. 31 . .	18 30 5.60	

Star / Date	h. m. s.	Mag.
O. Arg. S. 18489, −18° 30'.		
July 9	18 30 43.33	8.5
Aug. 9	43.39	8.5
Sept. 4	43.40	8.0
(*)−12° 45'.		
July 6	18 31 25.23	9.0
O. Arg. S. 18505, −25° 37'.		
Aug. 5	18 31 46.70	8.5
10	46.76	
α Lyræ, +38° 40'.		
July 13	18 32 32.22	
15	32.27	
23	32.21	
26	32.23	
31	32.21	
Aug. 3	32.17	
(*)−37° 58'.		
June 19	18 34 15.93	9.0
July 20	16.05	9.0
(*)−38° 1'.		
June 19	18 34 28.41	9.0
July 20	28.53	
Lalande 34831, +72° 19'.		
Aug. 18	18 34 45.16	
19	44.37	
O. Arg. S. 18568, −25° 9'.		
July 6	18 34 53.73	7.5
(*)−11° 13'.		
July 9	18 35 15.19	8.7
λ Coronæ Australis, −38° 27'.		
July 3	18 35 51.68	5.0
Weisse 887, −1° 5'.		
June 26	18 36 31.05	7.5
Lalande 34918, +72° 13'.		
Aug. 18	18 36 37.33	
19	36.24	
(*)−1° 7'.		
June 26	18 36 38.34	9.0
Lalande 35004, +72° 17'.		
Aug. 18	18 37 30.12	
19	29.95	
27	29.98	7.5
31	29.77	7.5
Lalande 35006, +72° 13'.		
Aug. 18	18 38 12.99	
19	12.36	
Lalande 35041, +72° 13'.		
Aug. 18	18 39 12.85	
19	12.46	
31	12.51	8.5
O. Arg. S. 18636, −18° 30'.		
June 19	18 39 16.79	6.5
Weisse 971, −12° 25'.		
July 6	18 39 37.73	9.0
Aug. 27	37.88	
Weisse 972, −12° 32'.		
Aug. 30	18 39 42.18	
(*)−30° 52'.		
June 26	18 42 37.87	
July 6	38.01	8.5
Weisse 1058, (1st *,)−6° 6'.		
June 19	18 42 43.55	6.5
Aug. 30	43.37	7.5
Weisse 1058, (2d *,) −6° 6'.		
June 19	18 42 44.71	8.0
Aug. 30	44.75	8.2
Lalande 34990, −20° 27'.		
Aug. 24	18 43 17.16	7.0
27	17.20	
Lalande 34993, −20° 27'.		
Aug. 24	18 43 23.61	7.0
27	23.72	
Lalande 35046, −20° 22'.		
July 9	18 44 33.80	8.5
β Lyræ, +33° 15'.		
June 19	18 45 16.80	
26	16.85	
July 3	16.72	
22	16.83	
Sept. 2	16.80	
Madras 8666, −19° 17'.		
Aug. 10	18 45 18.42	8.2
19	18.44	7.5
Sept. 7	18.39	8.0
Weisse 1143, −7° 3'.		
July 24	18 46 1.42	9.0
O. Arg. S. 18802, −28° 0'.		
Aug. 5	18 46 17.19	
(*)−33° 26'.		
July 6	18 47 27.66	7.5
(*)−39° 41'.		
Aug. 5	18 47 47.53	8.0
10	47.57	8.0
O. Arg. S. 18831, −28° 18'.		
July 9	18 47 48.10	8.0
B. A. C. 6448, −23° 20'.		
June 26	18 48 8.35	
Lacaille 7922, −40° 0'.		
June 19	18 48 33.23	
(*)−37° 30'.		
July 6	18 49 26.46	8.0
O. Arg. S. 18878, −21° 19'.		
July 3	18 49 51.67	9.0
ξ² Sagittarii, −21° 17'.		
July 3	18 49 58.46	6.0
21	58.39	
O. Arg. S. 18883, −28° 55'.		
July 9	18 50 1.16	9.0
Lacaille 7932, −39° 43'.		
Aug. 5	18 50 11.64	6.0
10	11.53	7.0
(*)−8° 22'.		
Sept. 2	18 51 43.12	8.0
(*)−8° 22'.		
Sept. 3	18 51 54.14	8.0
Weisse 1293, −8° 22'.		
Sept. 2	18 51 59.31	8.2
Lacaille 7961, −34° 50'.		
Aug. 24	18 53 56.46	8.0
Sept. 1	56.49	
(*)−7° 38'.		
Aug. 19	18 55 39.84	9.0
B. A. C. 6504, −21° 44'.		
Aug. 18	18 56 33.64	8.0
19	33.58	7.0
(*)−7° 34'.		
Aug. 27	18 56 49.89	
Radcliffe 4208, +86° 58'.		
July 15	18 57 1.84	7.0
(*)−7° 38'.		
Aug. 27	18 57 1.90	
(*)−1° 26'.		
Aug. 24	18 58 31.35	7.5
(*)−1° 31'.		
Aug. 9	18 59 9.11	
O.Arg.S.19083,(1st and N.*,)−16° 26'.		
July 20	18 59 23.61	9.0
24	23.62	
O. Arg. S. 19083, (2d and S.*,)−16° 26'.		
July 20	18 59 23.64	7.0
ζ Aquilæ, +13° 40'.		
July 6	18 59 26.07	
9	26.05	
Sept. 14	26.12	
Lamont 6587, −1° 20'.		
Sept. 3	18 59 31.37	
(*)−1° 31'.		
Aug. 2	18 59 51.19	
Weisse 1525, +13° 39'.		
July 9	18 59 51.72	9.0
(*)−18° 57'.		
Aug. 5	19 0 0.19	9.0
(*)−34° 4'.		
July 3	19 0 5.48	8.5
(*)−8° 50'.		
Aug. 11	19 0 10.42	
(*)−33° 59'.		
Aug. 11	19 0 12.74	8.0
Weisse 1539, +13° 38'.		
July 9	19 0 20.44	
(*)−0° 53'.		
Sept. 4	19 0 25.21	8.8
(*)−1° 30'.		
Aug. 9	19 0 29.87	
Weisse 1543, −1° 19'.		
Sept. 3	19 0 42.30	8.0
B. A. C. 6538, −25° 18'.		
July 24	19 0 48.89	7.5
B. A. C. 6537, −30° 51'.		
Aug. 13	19 0 49.21	
Weisse 1549, −1° 30'.		
Aug. 2	19 1 1.57	
β Coronæ Australis, −39° 33'.		
Aug. 5	19 1 4.85	5.5
18	4.90	
(*)−30° 50'.		
Aug. 13	19 1 5.75	9.0
Weisse 1556, −1° 30'.		
Aug. 2	19 1 12.72	
O. Arg. S. 19140, −15° 29'.		
Aug. 30	19 1 36.21	7.5
Sept. 1	36.25	8.0
(*)−15° 25'.		
Aug. 30	19 1 37.72	9.0
Sept. 1	37.89	
(*)−10° 1'.		
July 6	19 1 56.95	
π Sagittarii, −21° 14'.		
July 21	19 2 2.06	
Oct. 11	1.94	
(*)−1° 29'.		
Aug. 2	19 2 2.34	

	h. m. s.	Mag.
ι LYRÆ, +35° 53'.		
July 3 . .	19 2 39.81	
Aug. 10 . .	39.70	
(*)−32° 6'.		
Aug. 24 . .	19 8 17.99	
(*)−32° 4'.		
Aug. 24 . .	19 8 25.49	8.5
(*)−32° 6'.		
Aug. 24 . .	19 8 32.38	8.5
WEISSE 187, −8° 55'.		
July 9 . .	19 9 11.39	7.5
LALANDE 36238, +36° 11'.		
July 3 . .	19 9 14.58	7.0
(*)−19° 18'.		
July 6 . .	19 9 44.43	9.0
15 . .	44.37	9.0
(*)−19° 18'.		
July 6 . .	19 9 54.24	8.0
15 . .	54.23	9.0
(*)−18° 10'.		
July 20 . .	19 9 58.41	8.5
d SAGITTARII, −19° 11'.		
Aug. 31 . .	19 10 1.65	
Sept. 14 . .	1.54	
(*)−18° 14'.		
July 20 . .	19 10 3.84	8.5
24 . .	3.91	8.0
(*)−41° 14'.		
Aug. 9 . .	19 10 20.02	7.5
B. A. C. 6590, −15° 46'.		
Aug. 11 . .	19 10 35.26	8.0
(*)−32° 5'.		
Aug. 18 . .	19 10 47.38	8.0
30 . .	47.16	
LALANDE 36252, −22° 21'.		
July 20 . .	19 11 7.47	8.0
24 . .	7.48	8.0
O. ARG. S. 19374, −18° 3'.		
Aug. 6 . .	19 11 25.84	
54 DRACONIS, +57° 30'.		
Aug. 13 . .	19 11 35.90	6.0
Sept. 4 . .	35.92	
23 AQUILÆ, +0° 51'.		
Aug. 11 . .	19 11 55.45	6.0
30 . .	55.65	
B. A. C. 6606, +46° 50'.		
Aug. 19 . .	19 12 11.34	7.0

	h. m. s.	Mag.
δ DRACONIS, +67° 26'.		
Aug. 24 . .	19 12 30.56	5.0
WEISSE 277, +11° 23'.		
July 9 . .	19 12 37.52	8.3
LALANDE 36402, +38° 47'.		
July 3 . .	19 12 42.07	6.5
6 . .	41.88	7.0
B. A. C. 6607, −22° 39'.		
Aug. 6 . .	19 12 50.83	6.0
GR. CAT. 1710, +46° 44'.		
July 15 . .	19 13 7.65	5.5
B. A. C. 6613, −29° 45'.		
July 24 . .	19 13 49.84	
κ CYGNI, +53° 9'.		
Aug. 13 . .	19 14 5.95	5.5
Sept. 1 . .	5.77	
υ SAGITTARII, −16° 12'.		
July 21 . .	19 14 16.79	5.5
(*)+36° 30'.		
July 6 . .	19 15 8.01	7.0
9 . .	7.90	7.0
O. ARG. S. 19451, −26° 29'.		
July 20 . .	19 15 14.31	
WEISSE 345, −8° 27'.		
Sept. 4 . .	19 15 17.30	6.0
O. ARG. S. 19460, −28° 57'.		
Aug. 18 . .	19 15 30.09	
O. ARG. S. 19466, −28° 57'.		
Aug. 18 . .	19 15 37.68	
24 . .	37.79	8.5
(*)−28° 57'.		
Aug. 31 . .	19 15 49.37	
(*)−8° 25'.		
Aug. 2 . .	19 16 41.07	8.0
Sept. 4 . .	41.26	
(*)−8° 25'.		
Aug. 2 . .	19 16 48.45	
Sept. 4 . .	48.46	8.0
(*)−34° 33'.		
Aug. 5 . .	19 17 5.52	8.5
O. ARG. S. 19502, −26° 7'.		
July 20 . .	19 17 9.00	
(*)−34° 39'.		
Sept. 4 . .	19 17 16.14	8.0
(*)−23° 17'.		
July 24 . .	19 17 16.41	7.2

	h. m. s.	Mag.
LALANDE 36557, −15° 17'.		
Aug. 31 . .	19 17 29.70	
Sept. 1 . .	29.39	
O. ARG. S. 19525, −19° 27'.		
July 9 . .	19 18 0.43	8.5
τ DRACONIS, +73° 7'.		
July 6 . .	19 18 2.14	
δ AQUILÆ, +2° 51'.		
July 3 . .	19 18 56.63	
Aug. 10 . .	56.63	
13 . .	56.54	
19 . .	56.66	
30 . .	56.63	
WEISSE (2) 556, +36° 54'.		
July 15 . .	19 19 3.63	7.0
LALANDE 36732, +36° 54'.		
July 15 . .	19 19 53.85	7.5
(*)+36° 54'.		
July 15 . .	19 20 0.20	7.5
LALANDE 36762, +36° 54'.		
July 15 . .	19 20 31.54	7.5
WEISSE (2) 616, +19° 29'.		
Aug. 18 . .	19 21 7.72	
19 . .	7.70	
4 CYGNI, +36° 3'.		
July 6 . .	19 21 28.09	
(*)−26° 1'.		
Aug. 24 . .	19 21 47.96	
O. ARG. S. 19623, −19° 44'.		
July 9 . .	19 22 3.51	9.0
O. ARG. S. 19629, −19° 48'.		
July 9 . .	19 22 25.39	8.3
O. ARG. S. 19632, −19° 38'.		
Aug. 6 . .	19 22 32.97	7.0
LACAILLE 8121, −42° 43'.		
Aug. 5 . .	19 22 39.67	
(*)−23° 25'.		
Aug. 10 . .	19 23 10.09	9.0
(*)−41° 49'.		
Sept. 4 . .	19 28 37.90	8.0
(*)+19° 29'.		
July 6 . .	19 29 9.83	
(*)+19° 29'.		
July 6 . .	19 29 20.48	
O. ARG. S. 19775, −20° 39'.		
July 9 . .	19 29 31.65	8.2

	h. m. s.	Mag.
κ AQUILÆ, +7° 19'.		
July 20 . .	19 29 53.69	
Aug. 5 . .	53.66	
7 . .	53.87	
16 . .	53.86	
31 . .	53.85	
Sept. 1 . .	53.73	
4 . .	53.80	
14 . .	53.72	
O. ARG. S. 19796, −28° 5'.		
July 9 . .	19 30 20.23	9.2
(*)−27° 39'.		
July 21 . .	19 30 20.59	
B. A. C. 6718, +42° 7'.		
Aug. 19 . .	19 30 26.82	5.0
O. ARG. S. 19798, −29° 2'.		
July 15 . .	19 30 27.68	8.0
24 . .	27.87	
Aug. 2 . .	27.82	8.0
O. ARG. S. 19800, −29° 9'.		
Aug. 2 . .	19 30 31.87	
B. A. C. 6716, −28° 54'.		
July 15 . .	19 30 49.14	
(*)−27° 22'.		
Aug. 9 . .	19 30 58.26	9.0
24 . .	58.09	9.0
B. A. C. 6721, +47° 53'.		
Aug. 11 . .	19 30 58.16	
18 . .	58.31	
LACAILLE 8174, −39° 44'.		
Aug. 5 . .	19 31 3.90	6.5
10 . .	4.01	7.0
11 CYGNI, +36° 39'.		
July 6 . .	19 31 7.86	5.5
20 . .	8.00	5.0
ε SAGITTÆ, +16° 10'.		
Aug. 24 . .	19 31 24.24	9.0
30 . .	24.23	
WEISSE (2) 956, +16° 10'.		
Aug. 24 . .	19 31 30.40	
30 . .	30.53	9.0
(*)−24° 32'.		
Aug. 9 . .	19 33 45.14	9.5
(*)+38° 32'.		
July 20 . .	19 34 4.72	9.5
Aug. 10 . .	4.52	9.5
α SAGITTÆ, +17° 44'.		
July 15 . .	19 34 17.16	5.0
O. ARG. S. 19874, −26° 45'.		
July 6 . .	19 34 24.75	9.0
21 . .	25.01	9.0

	h. m. s.	Mag.
(*)+38° 33'.		
Aug. 10 . .	19 34 25.71	9.5
e^2 Sagittarii, −16° 26'.		
Sept. 14 . .	19 35 4.77	
(*)+4° 41'.		
July 9 . .	19 37 37.99	9.0
(*)−39° 43'.		
Sept. 14 . .	19 37 42.21	7.0
Weisse 958, +4° 41'.		
July 9 . .	19 38 5.24	7.5
19 . .	5.30	8.0
f Sagittarii, −20° 4'.		
Aug. 18 . .	18 38 45.86	
(*)−29° 8'.		
July 6 . .	19 38 52.64	9.5
(*)−28° 41'.		
Aug. 24 . .	19 39 11.41	9.5
Sept. 1 . .	11.24	9.0
(*)−28° 50'.		
Aug. 13 . .	19 39 43.19	
Sept. 4 . .	43.27	7.0
(*)+4° 41'.		
Aug. 19 . .	19 39 49.46	9.0
γ Aquilæ, +10° 27'.		
July 23 . .	19 40 4.74	
24 . .	4.69	
29 . .	4.72	
Aug. 5 . .	4.78	
7 . .	4.70	
(*)−28° 41'.		
Oct. 11 . .	19 41 0.53	
O. Arg. S. 19988, −27° 2'.		
July 9 . .	19 42 23.47	8.0
O. Arg. S. 20002, −26° 58'.		
July 6 . .	19 42 58.24	9.0
(*)−38° 44'.		
July 15 . .	19 43 43.15	
(*)−22° 30'.		
Aug. 10 . .	19 43 58.72	10.0
α Aquilæ, +8° 32'.		
July 22 . .	19 44 26.33	
Sept. 3 . .	26.37	
11 . .	26.48	
(*)−24° 15'.		
July 20 . .	19 47 9.24	8.5
O. Arg. S. 20063, −24° 15'.		
July 6 . .	19 47 22.34	8.0

	h. m. s.	Mag.
O. Arg. S. 20072, −19° 39'.		
July 9 . .	19 47 49.54	
Aug. 5 . .	49.57	
(*)−22° 19'.		
Aug. 10 . .	19 48 11.85	10.0
Sept. 4 . .	11.57	9.5
(*)−27° 2'.		
Oct. 13 . .	19 48 21.06	
(*)−39° 42'.		
Aug. 2 . .	19 48 34.24	
6 . .	34.63	
9 . .	34.33	
β Aquilæ, +6° 5'.		
July 15 . .	19 48 55.63	
29 . .	55.59	
Sept. 3 . .	55.69	
(*)−38° 3'.		
Aug. 16 . .	19 48 58.08	
24 . .	57.92	7.5
(*)−22° 39'.		
July 20 . .	19 48 58.15	8.5
Sept. 11 . .	58.20	8.5
(*)−38° 3'.		
Aug. 24 . .	19 49 10.71	
O. Arg. S. 20090, −26° 34'.		
July 6 . .	19 49 19.89	8.0
Dorpat 2601, (2d *,) +1° 35'.		
Aug. 30 . .	19 50 15.93	9.0
Sept. 1 . .	15.69	9.0
O. Arg. S. 20111, −28° 59'.		
Aug. 16 . .	19 50 45.50	8.0
O. Arg. S. 20123, −27° 36'.		
July 9 . .	19 51 10.46	9.0
Sept. 4 . .	10.46	
O. Arg. S. 20124, −25° 26'.		
Sept. 1 . .	19 51 11.40	8.0
(*)−43° 24'.		
Aug. 5 . .	19 51 23.56	8.0
Weisse (2) 1729, +38° 57'.		
Aug. 18 . .	19 53 1.58	
Weisse (2) 1753, +39° 1'.		
Aug. 19 . .	19 53 35.86	8.0
63 Sagittarii, −14° 0'.		
July 22 . .	19 34 41.49	
O. Arg. S. 20175, −18° 32'.		
July 6 . .	19 55 19.43	9.0
(*)+36° 10'.		
Aug. 10 . .	19 55 39.92	9.0

	h. m. s.	Mag.
O. Arg. S. 20180, −18° 37'.		
July 6 . .	19 55 43.34	8.0
(*)+36° 11'.		
July 20 . .	19 55 52.26	9.0
Aug. 10 . .	52.12	9.0
(*)+36° 11'.		
July 20 . .	19 55 54.52	8.5
Aug. 10 . .	54.40	8.5
Lalande 38283, +36° 12'.		
July 20 . .	19 55 56.63	7.5
Aug. 10 . .	56.58	7.5
(*)+36° 41'.		
Sept. 2 . .	19 56 10.41	7.0
B. A. C. 6882, +24° 27'.		
July 21 . .	19 56 14.37	7.0
24 . .	14.16	5.5
Aug. 5 . .	14.24	5.5
(*)+36° 42'.		
Sept. 2 . .	19 56 28.99	6.0
Weisse 1402, +8° 1'.		
Aug. 16 . .	19 56 36.22	
24 . .	36.02	
(*)+7° 52'.		
Aug. 9 . .	19 56 55.86	
Weisse 1421, +7° 57'.		
Aug. 19 . .	19 57 8.09	8.0
24 . .	7.88	
Sept. 1 . .	8.11	
62 Aquilæ, −1° 4'.		
July 24 . .	19 57 41.20	5.5
τ Aquilæ, +6° 55'.		
Aug. 30 . .	19 57 47.30	
(*)−11° 57'.		
July 21 . .	19 57 52.23	9.0
64 Sagittarii, −11° 59'.		
Aug. 11 . .	19 57 54.37	
Lacaille 8340, −35° 55'.		
Sept. 4 . .	19 58 53.05	7.0
11 . .	52.86	
(*)+36° 35'.		
Sept. 2 . .	19 59 34.59	
(*)−39° 11'.		
July 20 . .	19 59 39.51	
Sept. 3 . .	39.54	9.5
O. Arg. S. 20046, −24° 18'.		
July 15 . .	19 59 54.20	7.2
(*)−18° 18'.		
Sept. 4 . .	20 0 17.40	9.0

	h. m. s.	Mag.
(*)−39° 6'.		
Aug. 10 . .	20 0 20.91	9.5
(*)+33° 5'.		
July 24 . .	20 1 44.07	
Lacaille 8365, −32° 43'.		
July 15 . .	20 2 40.42	6.5
(*)−9° 14'.		
Aug. 5 . .	20 3 26.90	8.5
O. Arg. S. 20286, −27° 42'.		
July 21 . .	20 3 37.01	
Aug. 10 . .	36.91	
O. Arg. S. 20287, −24° 37'.		
July 20 . .	20 3 41.88	7.5
Lalande 38597, +34° 2'.		
July 6 . .	20 3 42.74	6.5
Weisse 46, −9° 13'.		
July 29 . .	20 4 7.01	7.5
Aug. 5 . .	6.92	6.5
O. Arg. S. 20297, −24° 40'.		
Aug. 19 . .	20 4 12.94	9.0
(*)−14° 14'.		
Aug. 11 . .	20 4 13.33	
b^2 Cygni, +36° 24'.		
July 24 . .	20 4 35.85	
Sept. 2 . .	36.25	5.0
Lacaille 8369, −38° 49'.		
Aug. 24 . .	20 4 56.71	
(*)−14° 4'.		
Sept. 4 . .	20 4 56.71	9.0
10 . .	56.78	9.0
Lalande 38708, +38° 43'.		
Sept. 7 . .	20 5 10.00	7.5
ξ^2 Capricorni, −13° 0'.		
July 22 . .	20 5 11.11	
O. Arg. S. 20311, −23° 21'.		
Aug. 9 . .	20 5 11.45	7.2
(*)−14° 3'.		
Sept. 4 . .	20 5 20.50	9.0
Weisse (2) 189, +38° 45'.		
Sept. 9 . .	20 5 34.03	8.0
(*)−17° 15'.		
Oct. 13 . .	20 5 55.81	
Weisse 101, −14° 6'.		
July 15 . .	20 6 4.00	9.0
Sept. 4 . .	3.97	

Date	h. m. s.	Mag.
O. Arg. S. 20322, —15° 48'.		
Aug. 16 . .	20 6 5.00	
(*)—17° 15'.		
Oct. 11 . .	20 6 55.51	
(*)+38° 18'.		
Aug. 18 . .	20 7 3.77	
Sept. 1 . .	3.50	
(*)—11° 16'.		
Sept. 11 . .	20 7 7.80	9.5
(*)+38° 19'.		
Sept. 1 . .	20 7 9.72	
(*)+38° 19'.		
Aug. 18 . .	20 7 11.77	
O. Arg. S. 20339, —15° 44'.		
Aug. 9 . .	20 7 19.03	8.6
Lalande 38783, +20° 44'.		
Aug. 5 . .	20 7 22.94	7.5
(*)+20° 42'.		
Aug. 5 . .	20 7 26.38	9.5
Weisse 135, —11° 16'.		
Aug. 11 . .	20 7 33.89	7.5
Sept. 14 . .	34.15	9.0
B. A. C. 6949, —11° 17'.		
July 29 . .	20 7 40.05	7.5
Aug. 11 . .	39.98	
14 . .	40.08	7.3
O. Arg. S. 30343, —17° 15'.		
July 20 . .	20 7 48.85	7.0
Weisse (2) 304, +38° 21'.		
Aug. 19 . .	20 7 56.72	9.2
(*)+20° 42'.		
Aug. 5 . .	20 7 58.30	8.0
(*)—39° 25'.		
Aug. 10 . .	20 8 30.61	8.0
(*)—39° 27'.		
Sept. 2 . .	20 8 31.34	7.0
Weisse (2) 304, +38° 22'.		
July 24 . .	20 8 39.29	7.0
Aug. 19 . .	39.56	7.5
Weisse (2) 306, +38° 26'.		
July 24 . .	20 8 40.26	8.0
Aug. 19 . .	40.31	8.0
Lacaille 8394, —31° 36'.		
Aug. 13 . .	20 8 52.17	
Sept. 1 . .	51.91	8.0
(*)+38° 21'.		
Aug. 19 . .	20 8 53.03	8.0
Gr. Cat. 1810, +16° 23'.		
Sept. 20 . .	20 8 57.13	
O. Arg. S. 20358, —17° 16'.		
July 20 . .	20 8 57.43	
3 Capricorni, —12° 44'.		
July 15 . .	20 9 10.88	5.5
Sept. 3 . .	10.69	
(*)+16° 23'.		
Sept. 20 . .	20 9 14.01	
o^2 Cygni, +46° 22'.		
Sept. 6 . .	20 9 32.54	
9 . .	32.17	
O. Arg. N. 20246, +46° 20'.		
Sept. 9 . .	20 9 33.33	7.0
(*)—24° 17'.		
Sept. 11 . .	20 10 8.17	9.0
α^2 Capricorni, —12° 58'.		
July 9 . .	20 10 50.35	
22 . .	50.33	
30 . .	50.37	
Aug. 16 . .	50.49	
Weisse (2) 398, +38° 29'.		
July 15 . .	20 11 16.02	7.0
Lacaille 8403, —33° 2'.		
July 20 . .	20 11 45.74	6.0
24 . .	45.77	
O. Arg. S. 20398, —29° 32'.		
Aug. 5 . .	20 12 14.03	8.0
B. A. C. 6984, (1st *,) —29° 37'.		
July 24 . .	20 12 25.91	8.0
Aug. 5 . .	25.83	8.0
B. A. C. 6984, (2d *,) —29° 37'.		
July 24 . .	20 12 27.15	7.2
Aug. 5 . .	27.17	7.0
O. Arg. S. 20406, —25° 37'.		
July 21 . .	20 12 38.27	8.0
B. A. C. 6987, —20° 3'.		
July 23 . .	20 12 56.92	
Weisse 284, —13° 45'.		
July 29 . .	20 13 10.17	9.0
Oct. 11 . .	10.12	
κ Cephei, (1st *,) +77° 21'.		
Aug. 2 . .	20 14 10.61	
κ Cephei, (2d *,) +77° 21'.		
Aug. 2 . .	20 14 12.31	
O. Arg. S. 20439, —29° 35'.		
July 20 . .	20 14 56.57	7.8
(*)—19° 8'.		
July 21 . .	20 16 27.02	
Weisse 387, —13° 44'.		
July 20 . .	20 16 52.50	
O. Arg. S. 20503, —22° 59'.		
Aug. 5 . .	20 19 22.06	8.0
π Capricorni, —18° 38'.		
July 6 . .	20 19 52.63	
15 . .	52.62	
16 . .	52.67	
20 . .	52.66	
23 . .	52.68	
29 . .	52.62	
30 . .	52.68	
31 . .	52.67	
Aug. 10 . .	52.60	
16 . .	52.70	
19 . .	52.65	
Sept. 1 . .	52.67	
2 . .	52.71	
3 . .	52.61	
4 . .	52.60	
9 . .	52.69	
20 . .	52.64	
O. Arg. S. 20533, —21° 21'.		
July 24 . .	20 21 26.67	7.0
Aug. 19 . .	26.62	
O. Arg. S. 20595, —15° 31'.		
July 29 . .	20 25 43.30	8.8
(*)—21° 21'.		
Aug. 10 . .	20 25 53.15	8.3
(*)—21° 44'.		
Aug. 2 . .	20 26 0.93	9.0
O. Arg. S. 20574, —22° 59'.		
July 21 . .	20 26 1.01	
ε Delphini, +10° 52'.		
July 24 . .	20 27 0.07	
26 . .	0.05	
31 . .	0.11	
Aug. 7 . .	0.04	
Dec. 7 . .	0.19	
(*)+14° 16'.		
Aug. 24 . .	20 27 54.00	
Weisse 755, —11° 29'.		
Aug. 24 . .	20 29 48.99	
(*)+27° 28'.		
Sept. 3 . .	20 30 1.31	
(*)—21° 47'.		
July 29 . .	20 30 2.69	8.0
(*)+27° 25'.		
Sept. 2 . .	20 30 28.67	9.0
3 . .	28.44	
O. Arg. S. 20675, —21° 52'.		
July 29 . .	20 30 47.38	8.3
Aug. 11 . .	47.18	7.0
Weisse 755, —11° 30'.		
Aug. 19 . .	20 30 49.28	7.5
τ^2 Capricorni, —15° 25'.		
Aug. 19 . .	20 32 0.04	
Lacaille 8512, —42° 52'.		
Sept. 4 . .	20 32 11.83	6.0
48 Cygni, +31° 7'.		
Sept. 7 . .	20 32 14.71	6.5
9 . .	14.69	6.0
B. A. C. 7132, +31° 4'.		
Sept. 7 . .	20 32 15.86	
9 . .	15.86	
(*)—16° 42'.		
Sept. 14 . .	20 32 25.31	9.5
(*)+37° 49'.		
Sept. 11 . .	20 32 27.71	8.5
Lalande 39884, +37° 35'.		
Aug. 5 . .	20 32 28.53	
Sept. 10 . .	28.67	
Lalande 39885, +37° 53'.		
Sept. 10 . .	20 32 30.54	
(*)—16° 43'.		
Aug. 10 . .	20 32 38.41	9.0
1 Aquarii, +0° 2'.		
Sept. 14 . .	20 32 44.99	
73 Draconis, +74° 30'.		
Sept. 20 . .	20 33 11.75	5.5
(*)+38° 4'.		
Sept. 4 . .	20 33 18.75	7.5
(*)+37° 49'.		
Sept. 20 . .	20 33 28.34	
Weisse (2) 1140, (1st *,) +38° 8'.		
Sept. 2 . .	20 33 44.66	8.0
Weisse (2) 1140, (2d *,) +38° 8'.		
Sept. 2 . .	20 33 45.38	7.3
(*)+37° 40'.		
Aug. 5 . .	20 33 46.05	
Weisse 841, —7° 15'.		
Oct. 11 . .	20 33 49.61	
13 . .	49.63	8.0
Weisse 846, —7° 15'.		
Oct. 11 . .	20 33 58.86	
13 . .	58.94	8.0
Weisse 851, —7° 19'.		
July 29 . .	20 34 7.13	8.5
Oct. 13 . .	7.16	8.7

Date	h. m. s.	Mag.
(*)+44° 48′.		
Aug. 10 . .	20 35 13.72	8.3
(*)−35° 39′.		
Sept. 2 . .	20 36 58.02	7.0
(*)−27° 26′.		
Sept. 4 . .	20 37 46.95	9.5
9 . .	47.24	9.5
α Cygni, +44° 49′.		
Dec. 7 . .	20 38 0.03	
(*)−35° 36′.		
Aug. 24 . .	20 38 20.53	10.0
O. Arg. S. 20819, −24° 12′.		
Sept. 10 . .	20 38 38.67	
(*)−13° 58′.		
Oct. 13 . .	20 40 8.72	
(*)−13° 58′.		
Oct. 11 . .	20 41 6.92	
ε Aquarii, −9° 56′.		
July 23 . .	20 41 38.20	
B. A. C. 7210, −27° 50′.		
July 29 . .	20 42 17.41	
Aug. 5 . .	17.40	
Sept. 20 . .	17.51	
(*)−27° 53′.		
Aug. 5 . .	20 42 18.71	9.3
Sept. 20 . .	18.73	
η Cephei, +61° 20′.		
Aug. 10 . .	20 42 38.62	
13 . .	38.41	
Weisse (2) 1407, +38° 47′.		
Aug. 19 . .	20 43 5.65	
(*)−27° 48′.		
Sept. 20 . .	20 43 37.66	
B. A. C. 7225, −27° 46′.		
Aug. 5 . .	20 43 46.72	
Sept. 20 . .	46.74	
Lalande 40277, +35° 5′.		
Aug. 19 . .	20 44 4.23	7.5
(*)−31° 1′.		
Aug. 9 . .	20 44 5.55	7.0
Lalande 40235, −17° 59′.		
Aug. 24 . .	20 44 9.15	
(*)−39° 24′.		
Aug. 11 . .	20 44 12.90	7.5
Sept. 1 . .	12.81	
O. Arg. S. 20906, −31° 12′.		
Sept. 4 . .	20 44 16.91	7.0
7 . .	16.99	
9 . .	16.85	
Weisse 1125, −9° 35′.		
Sept. 2 . .	20 44 56.05	7.7
O. Arg. S. 20917, −24° 42′.		
Aug. 24 . .	20 45 15.99	7.3
O. Arg. S. 20921, −28° 29′.		
Aug. 9 . .	20 45 30.90	8.5
μ Aquarii, −9° 28′.		
July 23 . .	20 45 38.42	
26 . .	38.40	
29 . .	38.44	
30 . .	38.48	
31 . .	38.49	
Aug. 7 . .	38.28	
B. A. C. 7242, −12° 4′.		
Sept. 1 . .	20 45 58.75	
(*)−41° 4′.		
Sept. 14 . .	20 46 45.01	8.0
O. Arg. S. 20973, −24° 43′.		
Aug. 19 . .	20 49 25.97	8.8
Oct. 20 . .	25.79	9.0
(*)+82° 34′.		
Aug. 5 . .	20 50 23.63	8.0
(*)−19° 41′.		
Aug. 19 . .	20 51 55.50	9.3
O. Arg. S. 21012, −19° 35′.		
Aug. 13 . .	20 52 12.81	7.0
Lacaille 8638, (1st *,) −43° 31′.		
Aug. 24 . .	20 52 35.69	
Lacaille 8638, (2d *,) −43° 31′.		
Aug. 24 . .	20 52 40.84	
θ Capricorni, −17° 45′.		
July 23 . .	20 58 38.17	
Sept. 16 . .	38.14	
(*)−30° 2′.		
Sept. 7 . .	21 0 54.91	7.7
9 . .	54.84	
ν Aquarii, −11° 54′.		
July 23 . .	21 2 30.55	
Oct. 13 . .	30.60	
γ Equulei, +9° 35′.		
Aug. 19 . .	21 4 1.09	
24 . .	1.14	
Sept. 2 . .	1.27	5.5
6 Equulei, +9° 30′.		
Aug. 19 . .	21 4 12.18	
24 . .	12.03	
Sept. 2 . .	12.30	6.5
ζ Cygni, +29° 41′.		
July 23 . .	21 7 24.23	
30 . .	24.19	
Aug. 5 . .	24.31	
10 . .	24.20	
19 . .	24.19	
Sept. 7 . .	24.19	
9 . .	24.19	
10 . .	24.20	
11 . .	24.13	
14 . .	24.20	
Oct. 20 . .	24.25	
B. A. C. 7373, +36° 5′.		
Sept. 1 . .	21 8 12.95	7.0
O. Arg. S. 21245, −21° 11′.		
Aug. 9 . .	21 8 13.73	6.0
13 . .	13.80	
B. A. C. 7377, +59° 27′.		
July 24 . .	21 8 29.45	
Sept. 2 . .	29.73	
α Equulei, +4° 42′.		
Aug. 11 . .	21 9 19.53	
Sept. 4 . .	19.52	4.5
Lacaille 8760, −39° 22′.		
Aug. 10 . .	21 9 32.20	7.0
Weisse (2) 225, +36° 39′.		
Sept. 11 . .	21 10 19.18	9.0
Lacaille 8764, −41° 36′.		
Sept. 4 . .	21 11 9.01	7.0
(*)−32° 44′.		
Aug. 2 . .	21 11 29.99	8.0
Weisse 258, −15° 32′.		
Aug. 24 . .	21 12 55.43	8.0
Sept. 1 . .	55.65	
17 Aquarii, −9° 52′.		
Aug. 24 . .	21 15 57.84	
Sept. 1 . .	57.99	
1 Pegasi, +19° 15′.		
Aug. 13 . .	21 16 4.59	
Sept. 4 . .	4.52	
(*)+36° 10′.		
Sept. 7 . .	21 19 57.40	7.7
(*)+36° 10′.		
Sept. 7 . .	21 20 28.28	
(*)+69° 54′.		
Sept. 2 . .	21 23 32.02	9.2
Weisse 522, −14° 52′.		
July 24 . .	21 23 32.91	
(*)−16° 25′.		
Sept. 1 . .	21 23 48.02	
β Aquarii, −6° 9′.		
July 24 . .	21 24 42.82	
(*)−26° 18′.		
Sept. 1 . .	21 27 21.07	9.0
4 . .	21.06	9.0
Weisse 628, −8° 41′.		
Sept. 9 . .	21 27 41.12	7.8
(*)−8° 40′.		
Sept. 3 . .	21 27 49.37	
O. Arg. S. 21519, −24° 16′.		
Sept. 3 . .	21 30 16.39	
4 . .	16.38	7.7
ξ Aquarii, −8° 26′.		
July 24 . .	21 30 49.80	
Oct. 16 . .	49.74	
Dec. 8 . .	49.79	
Lalande 42108, −11° 30′.		
Sept. 9 . .	21 31 9.28	
Lacaille 8867, −34° 15′.		
Sept. 3 . .	21 31 16.53	6.5
O. Arg. S. 21534, −25° 0′.		
Oct. 20 . .	21 31 30.74	7.5
(*)−36° 26′.		
Sept. 4 . .	21 32 1.41	8.0
(*)−25° 2′.		
Oct. 11 . .	21 33 43.51	9.0
20 . .	43.40	9.0
B. A. C. 7538, −44° 5′.		
Sept. 4 . .	21 34 43.73	6.5
O. Arg. N. 22729, +70° 44′.		
Sept. 1 . .	21 37 20.16	
ε Pegasi, +9° 16′.		
Sept. 2 . .	21 37 48.14	
Dec. 8 . .	48.05	
μ Cygni, (1st *,) +28° 9′.		
Sept. 9 . .	21 38 19.69	
10 . .	19.90	
μ Cygni, (2d *,) +28° 9′.		
Sept. 9 . .	21 38 19.97	
10 . .	20.31	
B. A. C. 7570, +28° 11′.		
Sept. 9 . .	21 38 33.19	6.5
10 . .	33.48	
ι^2 Capricorni, −9° 52′.		
Sept. 1 . .	21 39 19.88	
λ Capricorni, −11° 58′.		
July 24 . .	21 39 32.05	
Aug. 20 . .	31.99	

	h.	m.	s.	Mag.
Weisse 965, −12° 10'.				
Sept. 4	21	41	0.17	8.3
Oct. 20			0.13	9.0
B. A. C. 7586, +24° 58'.				
Sept. 11	21	41	28.74	6.0
B. A. C. 7596, −6° 0'.				
Sept. 1	21	42	13.20	
11			13.15	
B. A. C. 7610, +69° 33'.				
Sept. 9	21	44	42.95	5.5
Lacaille 8945, −36° 36'.				
Aug. 20	21	44	53.77	8.8
(*)−19° 44'.				
Sept. 1	21	44	54.91	8.7
O. Arg. N. 22961, +69° 34'.				
Sept. 9	21	46	9.78	8.5
μ Capricorni, −14° 10'.				
July 24	21	46	12.30	
Oct. 20			12.32	
Nov. 11			12.34	
(*)+38° 41'.				
Sept. 4	21	46	34.92	9.0
(*)+38° 39'.				
Sept. 11	21	47	11.70	
Weisse (2) 1140, +38° 14'.				
Sept. 1	21	47	23.17	
79 Draconis, +73° 5'.				
Nov. 10	21	51	14.57	
Weisse (2) 1398, +36° 22'.				
Sept. 1	21	56	41.49	
(*)−27° 29'.				
Sept. 9	21	57	50.47	8.5
B. A. C. 7675, −27° 27'.				
Sept. 3	21	58	12.77	7.0
(*)−27° 28'.				
Sept. 3	21	58	50.25	9.0
α Aquarii, −0° 57'.				
Nov. 11	21	59	6.38	
Dec. 8			6.33	
O. Arg. N. 23385, +52° 58'.				
Sept. 11	22	1	12.17	6.5
O. Arg. N. 23425, +53° 2'.				
Sept. 11	22	1	46.20	8.5
(*)+53° 2'.				
Sept. 11	22	2	10.46	9.0

	h.	m.	s.	Mag.
B. A. C. 7735, (1st *,) +82° 15'.				
Sept. 4	22	2	45.55	7.5
B. A. C. 7735, (2d *,) +82° 15'.				
Sept. 4	22	2	52.51	7.3
(*)−21° 48'.				
Sept. 10	22	8	37.34	9.0
O. Arg. S. 22027, −21° 47'.				
Sept. 9	22	8	58.58	8.0
Weisse 167, −12° 18'.				
Sept. 1	22	9	32.66	9.0
10			32.55	9.0
Weisse 175, −12° 17'.				
Sept. 1	22	9	48.94	8.0
10			49.03	8.0
θ Aquarii, −8° 26'.				
Sept. 4	22	9	58.34	
11			58.36	
16			58.33	
29			58.30	
Oct. 16			58.23	
Nov. 11			58.38	
Dec. 8			58.39	
ε Cephei, +56° 23'.				
Oct. 20	22	10	15.03	
Weisse (2) 291, +37° 7'.				
Nov. 24	22	13	14.24	
Dec. 3			14.00	
Weisse (2) 292, +37° 7'.				
Nov. 24	22	13	14.48	
Dec. 3			14.34	
(*)+37° 5'.				
Dec. 8	22	13	13.94	8.5
(*)+37° 5'.				
Dec. 8	22	13	14.26	7.5
ρ Aquarii, −8° 29'.				
Nov. 11	22	13	20.47	
Weisse 300, −11° 54'.				
Sept. 29	22	15	54.27	9.0
Oct. 16			54.04	9.0
20			54.25	9.0
B. A. C. 7809, −1° 51'.				
Sept. 1	22	17	53.38	
10			53.37	
Lalande 43751, +37° 55'.				
Sept. 3	22	18	9.25	
9			9.16	6.0
(*)+3° 9'.				
Sept. 10	22	18	25.06	
β Lacertæ, +51° 35'.				
Sept. 13	22	18	27.20	
Oct. 16			27.12	5.5

	h.	m.	s.	Mag.
O. Arg. S. 22133, −29° 23'.				
Sept. 20	22	18	35.20	
π Aquarii, +0° 43'.				
Sept. 16	22	18	38.24	
Dec. 3			38.24	
Lacaille 9130, −29° 44'.				
Sept. 29	22	18	49.45	
O. Arg. S. 22142, −23° 35'.				
Sept. 27	22	18	53.35	9.0
(*)−29° 44'.				
Sept. 20	22	19	6.76	
Weisse 449, −10° 37'.				
Oct. 20	22	22	10.33	
(*)−10° 37'.				
Oct. 16	22	22	11.27	9.0
20			11.22	
B. A. C. 7851, +85° 27'.				
Sept. 1	22	23	14.31	
11			16.80	6.5
20			17.00	
σ Aquarii, −11° 20'.				
Nov. 11	22	23	45.94	
(*)−28° 3'.				
Sept. 3	22	26	30.53	
9			30.78	
10			30.94	
29			30.57	
(*)−28° 5'.				
Sept. 10	22	27	6.45	
(*)−28° 4'.				
Sept. 3	22	27	14.37	
9			14.19	
(*)−28° 4'.				
Sept. 3	22	27	50.86	
9			50.98	7.7
10			50.75	
η Aquarii, −0° 47'.				
Nov. 11	22	28	40.56	
κ Aquarii, −4° 54'.				
Sept. 18	22	31	1.42	
Dec. 8			1.32	
Lacaille 9194, −39° 50'.				
Sept. 20	22	31	25.05	6.5
9 Lacertæ, +50° 52'.				
Sept. 11	22	32	2.16	
31 Cephei, +72° 58'.				
Sept. 20	22	32	33.02	
(*)−28° 57'.				
Oct. 20	22	32	35.63	8.5

	h.	m.	s.	Mag.
ζ Pegasi, +10° 12'.				
Sept. 1	22	34	58.78	
29			58.76	
B. A. C. 7951, (1st *,) −4° 54'.				
Sept. 9	22	41	7.68	7.0
B. A. C. 7951, (2d *,) −4° 54'.				
Sept. 9	22	41	7.97	7.0
Weisse 850, −4° 53'.				
Sept. 9	22	41	9.94	8.0
Lacaille 9271, −33° 0'.				
Sept. 29	22	42	44.23	
(*)−6° 17'.				
Sept. 3	22	43	18.69	
Weisse 897, −6° 17'.				
Sept. 3	22	43	29.44	
11			29.56	9.0
λ Aquarii, −8° 16'.				
Sept. 18	22	45	49.92	
20			49.91	
28			49.94	
Oct. 4			49.91	
Lacaille 9292, −40° 8'.				
Oct. 20	22	46	6.65	
78 Aquarii, −7° 54'.				
Sept. 18	22	47	47.92	6.0
Lalande 44860, −21° 2'.				
Oct. 20	22	49	1.75	8.2
α Piscis Australis, −30° 19'.				
Sept. 3	22	50	27.57	
Lacaille 9315, (1st *,) −26° 52'.				
Sept. 9	22	50	42.38	9.0
10			42.37	
29			42.16	9.0
Lacaille 9315, (2d *,) −26° 52'.				
Sept. 9	22	50	42.39	7.0
10			42.71	6.5
29			42.47	6.5
O. Arg. S. 22514, −26° 49'.				
Sept. 9	22	50	44.03	8.3
29			43.98	
Lacaille 9351, −41° 32'.				
Sept. 11	22	56	23.06	6.5
14			23.13	
Lacaille 9352, −36° 38'.				
Sept. 10	22	57	27.43	7.0
(*)+14° 24'.				
Oct. 1	22	57	55.99	9.5

Date	h. m. s.	Mag.
α Pegasi, +14° 30'.		
Sept. 11	22 58 17.18	
20	17.18	
29	17.15	
Oct. 1	17.13	
16	17.22	
h^2 Aquarii, −8° 27'.		
Sept. 28	22 58 22.97	
B. A. C. 8039, +66° 30'.		
Sept. 9	22 58 36.05	5.5
O. Arg. N. 25122, +66° 37'.		
Sept. 14	23 0 5.38	8.0
φ Aquarii, −6° 45'.		
Sept. 30	23 7 35.20	
Oct. 16	35.32	
Weisse 136, −5° 14'.		
Nov. 11	23 7 37.56	8.5
O. Arg. S. 22711, −22° 2'.		
Sept. 9	23 8 45.17	8.3
(*)−39° 59'.		
Sept. 3	23 8 54.47	8.0
(*)−22° 0'.		
Sept. 9	23 8 54.53	9.0
O. Arg. N. 22712, −22° 58'.		
Oct. 8	23 8 57.15	
Weisse 143, −11° 45'.		
Sept. 10	23 8 59.40	
Lacaille 9429, −29° 9'.		
Sept. 28	23 10 9.63	6.0
γ Piscium, +2° 34'.		
July 26	23 10 25.70	
Lacaille 9432, −41° 31'.		
Sept. 3	23 10 58.53	
(*)−39° 9'.		
Sept. 10	23 12 42.95	8.0
14	42.81	6.5
28	42.73	7.0
30	42.64	7.3
Lacaille 9445, −43° 52'.		
Sept. 3	23 13 13.83	
27	14.52	
(*)−39° 13'.		
Sept. 14	23 13 31.97	
28	31.92	
30	31.74	
(*)−34° 37'.		
Sept. 9	23 13 44.93	8.0

Date	h. m. s.	Mag.
(*)−9° 16'.		
Oct. 4	23 13 47.20	9.0
(*)−9° 16'.		
Sept. 29	23 13 50.78	9.0
Oct. 1	50.91	8.5
5	50.67	9.0
(*)+36° 48'.		
Oct. 20	23 14 27.40	
12 Andromedæ, +37° 28'.		
Oct. 8	23 14 47.02	
Lalande 45758, −1° 7'.		
Sept. 10	23 15 42.03	7.5
(*)+66° 21'.		
Nov. 11	23 15 59.75	8.5
Radcliffe 6064, +54° 28'.		
Sept. 9	23 17 17.52	
(*)+5° 22'.		
Sept. 28	23 18 36.97	8.2
Weisse 359, +5° 22'.		
Sept. 3	23 18 44.99	
28	44.96	8.5
υ Pegasi, +22° 41'.		
Sept. 10	23 18 53.49	
(*)+54° 24'.		
Sept. 18	23 20 0.77	8.8
κ Piscium, +0° 33'.		
July 26	23 20 16.22	5.4
Dec. 10	16.17	5.0
Weisse 392, +0° 37'.		
July 26	23 20 35.28	
(*)+54° 15'.		
Sept. 14	23 20 35.59	8.3
27	35.75	
(*)+54° 15'.		
Sept. 14	23 20 50.67	7.7
27	50.64	
13 Andromedæ, +42° 11'.		
Oct. 26	23 20 51.68	6.0
(*)+54° 4'.		
Sept. 27	23 21 7.05	
30	6.92	8.5
Nov. 11	6.59	9.0
(*)+54° 7'.		
Sept. 27	23 21 7.05	
30	7.04	7.7
Nov. 11	6.92	8.2

Date	h. m. s.	Mag.
θ Piscium, +5° 40'.		
Sept. 3	23 21 22.55	
9	22.53	
Oct. 5	22.50	
16	22.47	
(*)+54° 29'.		
Sept. 18	23 21 26.82	8.5
29	27.01	8.0
Weisse 419, +5° 5'.		
Oct. 1	23 21 51.42	
Weisse 423, −10° 50'.		
Oct. 29	23 22 7.79	9.0
Weisse (2) 457, +38° 54'.		
Oct. 26	23 22 20.54	7.0
(*)+5° 42'.		
Oct. 20	23 22 29.09	9.5
(*)+54° 25'.		
Sept. 18	23 23 9.02	8.3
20	8.99	
29	9.10	7.8
(*)+15° 15'.		
Sept. 28	23 25 30.40	9.0
Lalande 46097, +37° 35'.		
Sept. 9	23 25 36.12	7.0
Weisse 528, +15° 15'.		
Sept. 10	23 27 56.76	
ι Piscium, +4° 50'.		
July 26	23 33 16.02	
Sept. 10	15.96	
14	15.94	
28	15.87	
Oct. 20	15.95	
26	15.87	
29	15.82	
Dec. 7	15.83	
10	16.03	
γ Cephei, +76° 54'.		
Sept. 18	23 34 1.86	
Groombridge 4142, +63° 5'.		
Sept. 9	23 41 48.68	
14	48.93	
(*)+63° 4'.		
Sept. 9	23 41 56.33	8.5
14	56.75	8.5
Weisse 862, +6° 14'.		
Dec. 20	23 42 51.96	8.0
O. Arg. N. 26080, +62° 58'.		
Sept. 14	23 44 4.28	
20	4.33	

Date	h. m. s.	Mag.
O. Arg. N. 26093, +63° 15'.		
Sept. 9	23 44 38.42	
20	38.76	
(*)−32° 5'.		
Sept. 29	23 45 15.58	
30	15.55	
(*)+34° 11'.		
Sept. 28	23 46 10.99	7.5
Oct. 5	10.98	8.0
(*)+10° 50'.		
Sept. 14	23 47 50.83	
28	50.69	9.0
B. A. C. 8311, −0° 37'.		
Sept. 27	23 48 7.58	
30	7.32	
ω Piscium, +6° 9'.		
Sept. 18	23 52 38.11	
30	38.15	
Oct. 1	38.21	
5	38.20	
16	38.24	
Dec. 9	38.17	
23	38.12	
Weisse (2) 1107, +37° 34'.		
Sept. 9	23 53 35.03	6.5
14	35.09	6.5
Weisse 1090, +0° 30'.		
Sept. 27	23 53 55.06	8.5
B. A. C. 8338, +61° 27'.		
Sept. 28	23 54 6.62	6.0
Oct. 1	6.71	7.0
B. A. C. 8344, +60° 30'.		
Sept. 27	23 54 59.85	
85 Pegasi, +26° 24'.		
Sept. 18	23 55 22.88	
c^2 Piscium, +7° 46'.		
Sept. 20	23 55 51.13	
(*)+57° 36'.		
Oct. 26	23 58 31.21	8.3
Dec. 7	31.38	9.0
23	31.02	
(*)+57° 39'.		
Sept. 28	23 58 58.37	9.0
Dec. 7	58.32	
23	57.95	
(*)+57° 36'.		
Oct. 26	23 59 4.17	9.0
Dec. 23	3.96	
(*)+57° 39'.		
Sept. 28	23 59 31.22	9.0
Oct. 26	31.20	9.0

MEAN DECLINATIONS FOR 1870.0

OF

STARS OBSERVED

WITH THE

MURAL CIRCLE.

1869.

MEAN DECLINATIONS FOR 1870.0.

MURAL CIRCLE.

	°	′	″
Weisse XXIII, 1250, $0^{h}\ 1^{m}\ 39^{s}$.			
October 18 . .	+2	43	8.4
November 8 . .			7.5
O. Arg. S. 8, $0^{h}\ 1^{m}\ 41^{s}$.			
November 11 . .	−19	56	4.4
December 1 . .			4.8
O. Arg. S. 9, $0^{h}\ 1^{m}\ 45^{s}$.			
November 11 . .	−19	56	49.6
December 1 . .			50.8
Lacaille 9738, $0^{h}\ 2^{m}\ 13^{s}$.			
October 26 . .	−22	54	9.1
(*) $0^{h}\ 3^{m}\ 11^{s}$.			
November 24 . .	+3	26	32.4
Weisse O, 21, $0^{h}\ 3^{m}\ 12^{s}$.			
November 10 . .	+11	59	17.6
Weisse O, 24, $0^{h}\ 3^{m}\ 19^{s}$.			
November 25 . .	+3	26	34.4
O. Arg. S. 36, $0^{h}\ 3^{m}\ 58^{s}$.			
November 3 . .	−22	51	35.2
(*) $0^{h}\ 4^{m}\ 46^{s}$.			
November 5 . .	−33	31	28.1
(*) $0^{h}\ 4^{m}\ 53^{s}$.			
November 15 . .	+6	8	35.2
O. Arg. S. 47, $0^{h}\ 5^{m}\ 32^{s}$.			
November 25 . .	−18	39	37.7
Lacaille 9766, $0^{h}\ 5^{m}\ 59^{s}$.			
November 18 . .	−27	34	48.2
O. Arg. S. 52, $0^{h}\ 5^{m}\ 59^{s}$.			
October 29 . .	−19	55	(0.6)
December 7 . .			7.0
Weisse O, 88, $0^{h}\ 6^{m}\ 17^{s}$.			
December 3 . .	+2	13	35.8
(*) $0^{h}\ 7^{m}\ 3^{s}$.			
November 15 . .	+6	13	0.5
Weisse O, 110, $0^{h}\ 7^{m}\ 47^{s}$.			
December 23 . .	+2	44	55.0
Weisse O, 115, $0^{h}\ 8^{m}\ 9^{s}$.			
November 3 . .	+2	33	32.1
(*) $0^{h}\ 9^{m}\ 57^{s}$.			
November 8 . .	+1	7	40.6
(*) $0^{h}\ 11^{m}\ 5^{s}$.			
October 7 . .	−6	54	33.9
B. A. C. 77, $0^{h}\ 16^{m}\ 41^{s}$.			
October 26 . .	−31	45	22.0
Weisse O, 305, $0^{h}\ 19^{m}\ 15^{s}$.			
November 18 . .	+3	12	19.2
December 1 . .			19.9
Weisse O, 308, $0^{h}\ 19^{m}\ 20^{s}$.			
November 19 . .	+3	10	6.8
December 1 . .			5.6
α Phœnicis, $0^{h}\ 19^{m}\ 50^{s}$.			
October 26 . .	−43	0	45.5
29 . .			41.1
Lacaille 92, $0^{h}\ 20^{m}\ 58^{s}$.			
December 3 . .	−32	32	54.7
O. Arg. S. 202, $0^{h}\ 21^{m}\ 1^{s}$.			
November 8 . .	−20	51	14.8
48 Piscium, $0^{h}\ 21^{m}\ 27^{s}$.			
November 10 . .	+15	43	36.9
Weisse O, 341, $0^{h}\ 21^{m}\ 48^{s}$.			
November 3 . .	+6	22	18.0
December 9 . .			19.3
(*) $0^{h}\ 21^{m}\ 59^{s}$.			
December 23 . .	−36	26	15.5
28 . .			18.7
(*) $0^{h}\ 22^{m}\ 54^{s}$.			
December 23 . .	−36	26	30.8
28 . .			31.8
Lacaille 98, $0^{h}\ 22^{m}\ 54^{s}$.			
December 7 . .	−30	0	8.6
Lalande 658, $0^{h}\ 22^{m}\ 58^{s}$.			
December 30 . .	−4	43	56.2
49 Piscium, $0^{h}\ 24^{m}\ 0^{s}$.			
November 10 . .	+15	19	11.5
B. A. C. 122, $0^{h}\ 24^{m}\ 49^{s}$.			
October 29 . .	+15	18	14.5
November 11 . .			15.2
B. A. C. 136, (1st *,) $0^{h}\ 27^{m}\ 21^{s}$.			
November 5 . .	−35	42	7.6
B. A. C. 136, (2d *,) $0^{h}\ 27^{m}\ 21^{s}$.			
November 24 . .	−35	42	8.7
Weisse O, 453, $0^{h}\ 27^{m}\ 33^{s}$.			
October 7 . .	+7	58	10.8
Lacaille 131, $0^{h}\ 27^{m}\ 42^{s}$.			
November 8 . .	−33	1	14.2
B. A. C. 138, (2d *,) $0^{h}\ 27^{m}\ 45^{s}$.			
December 28 . .	−5	15	34.9
30 . .			33.7
Weisse O, 477, $0^{h}\ 28^{m}\ 46^{s}$.			
November 10 . .	+3	34	41.8
18 . .			42.2
25 . .			41.3
(* 127) Washington, $0^{h}\ 28^{m}\ 59^{s}$.			
December 1 . .	+2	36	25.9
3 . .			24.0
ζ Cassiopeæ, $0^{h}\ 29^{m}\ 43^{s}$.			
October 26 . .	+53	10	50.6
53 Piscium, $0^{h}\ 30^{m}\ 1^{s}$.			
October 28 . .	+14	30	59.3
O. Arg. S. 303, $0^{h}\ 30^{m}\ 19^{s}$.			
November 15 . .	−25	12	51.4
O. Arg. S. 304, $0^{h}\ 30^{m}\ 23^{s}$.			
November 15 . .	−25	12	13.4
Weisse O, 503, $0^{h}\ 30^{m}\ 28^{s}$.			
November 3 . .	−1	34	50.2
Weisse O, 506, $0^{h}\ 30^{m}\ 36^{s}$.			
December 23 . .	+4	18	59.1
B. A. C. 160, $0^{h}\ 30^{m}\ 37^{s}$.			
October 27 . .	−25	28	56.4
B. A. C. 161, $0^{h}\ 30^{m}\ 45^{s}$.			
December 3 . .	+2	25	21.6
Weisse O, 510, $0^{h}\ 30^{m}\ 58^{s}$.			
December 9 . .	+7	18	23.2
ε Andromedæ, $0^{h}\ 31^{m}\ 50^{s}$.			
December 7 . .	+28	36	22.7
(*) $0^{h}\ 33^{m}\ 21^{s}$.			
December 28 . .	−25	44	36.9
(*) $0^{h}\ 33^{m}\ 38^{s}$.			
December 30 . .	−18	18	20.6
(*) $0^{h}\ 33^{m}\ 58^{s}$.			
November 8 . .	−5	3	32.0
B. A. C. 174, $0^{h}\ 34^{m}\ 5^{s}$.			
November 8 . .	−5	3	54.0
Lacaille 169, $0^{h}\ 34^{m}\ 10^{s}$.			
October 7 . .	−30	8	7.7
November 25 . .			6.9
(*) $0^{h}\ 35^{m}\ 24^{s}$.			
November 11 . .	+10	3	24.7
(*) $0^{h}\ 35^{m}\ 25^{s}$.			
December 1 . .	+2	13	19.7
(*) $0^{h}\ 35^{m}\ 26^{s}$.			
December 1 . .	+2	7	52.2
(*) $0^{h}\ 35^{m}\ 29^{s}$.			
November 5 . .	+10	6	20.0
Lacaille 194, $0^{h}\ 38^{m}\ 25^{s}$.			
November 15 . .	−32	6	2.8
Weisse O, 642, $0^{h}\ 38^{m}\ 53^{s}$.			
December 9 . .	−14	7	35.8
18 Ceti, $0^{h}\ 38^{m}\ 57^{s}$.			
October 28 . .	−13	35	6.3
Weisse O, 665, $0^{h}\ 39^{m}\ 13^{s}$.			
November 25 . .	+4	34	9.0
(*) $0^{h}\ 40^{m}\ 0^{s}$.			
October 29 . .	+9	51	53.8
November 5 . .			52.2

WEISSE O, 687, $0^h\ 40^m\ 31^s$.

		° ′ ″
December 3	. .	− 1 51 56.3
28	. .	56.2

LACAILLE 219, $0^h\ 41^m\ 33^s$.

December 23 . . −30 3 15.4

LACAILLE 218, $0^h\ 41^m\ 34^s$.

November 10 . . −22 25 56.2

(*) $0^h\ 42^m\ 18^s$.

December 10 . . −24 51 7.1

ν ANDROMEDÆ, $0^h\ 42^m\ 36^s$.

January 6 . . +40 22 13.5

WEISSE O, 724, $0^h\ 42^m\ 50^s$.

November 8 . . + 7 14 45.9

O. ARG. S. 442, $0^h\ 42^m\ 53^s$.

October 7 . . −23 55 33.2

O. ARG. S. 443, $0^h\ 42^m\ 55^s$.

December 30 . . −24 2 15.0

LACAILLE 224, $0^h\ 43^m\ 6^s$.

December 30 . . −24 4 13.3

RUMKER, n. f., 329, $0^h\ 43^m\ 7^s$.

December 9 . . +10 2 47.1

WEISSE O, 733, $0^h\ 43^m\ 20^s$.

November 15 . . + 6 57 33.0

WEISSE O, 787, $0^h\ 45^m\ 55^s$.

October 26 . . + 5 57 32.2

WEISSE O, 788, $0^h\ 45^m\ 59^s$.

October 28 . . + 6 59 44.3

LACAILLE 241, (2d *,) $0^h\ 46^m\ 47^s$.

December 28 . . −25 28 59.6

WEISSE O, 804, $0^h\ 46^m\ 50^s$.

December 23 . . + 5 16 50.6

(*) $0^h\ 48^m\ 53^s$.

December 9 . . + 1 35 58.7

B. A. C. 269, $0^h\ 50^m\ 26^s$.

January 6 . . +12 59 33.7

(*) $0^h\ 51^m\ 41^s$.

November 15 . . + 1 54 3.2

O. ARG. S. 542, $0^h\ 51^m\ 58^s$.

October 29 . . −27 47 39.4

O. ARG. S. 544, $0^h\ 52^m\ 16^s$.

November 8 . . −20 20 3.9

α SCULPTORIS, $0^h\ 52^m\ 20^s$.

November 25 . . −30 3 36.2

(*) $0^h\ 56^m\ 50^s$.

		° ′ ″
December 3	. .	−23 52 40.6

WEISSE O, 989, $0^h\ 57^m\ 15^s$.

December 29	. .	+14 31 47.6
30	. .	44.8

B. A. C. 306, $0^h\ 58^m\ 21^s$.

October 7 . . −34 13 48.5

WEISSE O, 1028, $0^h\ 59^m\ 21^s$.

October 26	. .	+ 2 34 46.5
November 11	. .	45.5

μ CASSIOPEÆ, $0^h\ 59^m\ 34^s$.

January 6	. .	+54 16 56.1
November 3	. .	53.1

B. A. C. 319, $1^h\ 0^m\ 21^s$.

November 8 . . −36 21 23.3

O. ARG. S. 644, $1^h\ 1^m\ 21^s$.

December 3 . . −28 25 2.7

WEISSE O, 1078, $1^h\ 1^m\ 38^s$.

October 29	. .	+ 8 41 22.6
November 24	. .	22.6

η CETI, $1^h\ 2^m\ 3^s$.

October 28	. .	−10 52 18.1
November 25	. .	19.0

WEISSE I, 13, $1^h\ 3^m\ 9^s$.

November 15 . . +11 58 49.6

B. A. C. 341, $1^h\ 3^m\ 18^s$.

November 5 . . +14 58 52.8

χ PISCIUM, $1^h\ 4^m\ 27^s$.

October 26 . . +20 20 34.4

WEISSE I, 76, $1^h\ 6^m\ 56^s$.

December 30 . . +10 7 26.5

O. ARG. S. 704, $1^h\ 8^m\ 2^s$.

December 23 . . −24 59 25.0

a^1 URSÆ MINORIS, $1^h\ 11^m\ 34^s$.

November 24 . . +88 36 42.6

(*) $1^h\ 13^m\ 48^s$.

November 5 . . +22 50 57.5

WEISSE I, 208, $1^h\ 14^m\ 28^s$.

January 6	. .	+11 14 41.7
November 6	. .	44.3

WEISSE I, 227, $1^h\ 15^m\ 33^s$.

November 5 . . − 2 34 (20.6)

(*) $1^h\ 26^m\ 3^s$.

January 6 . . −15 1 40.5

LACAILLE 444, $1^h\ 26^m\ 52^s$.

October 26 . . −24 50 25.3

(*) $1^h\ 27^m\ 14^s$.

		° ′ ″
December 28	. .	− 2 26 21.8
29	. .	42.5
30	. .	35.5

Excessively faint.

B. A. C. 469, $1^h\ 27^m\ 47^s$.

January 13	. .	+17 47 45.4
October 29	. .	46.8

101 PISCIUM, $1^h\ 28^m\ 46^s$.

January 16 . . +13 59 45.6

LACAILLE 459, $1^h\ 28^m\ 52^s$.

November 5 . . −36 0 44.9

B. A. C. 479, $1^h\ 28^m\ 55^s$.

October 29 . . −32 33 29.5

O. ARG. S. 938, $1^h\ 29^m\ 4^s$.

November 11 . . −30 32 35.0

51 ANDROMEDÆ, $1^h\ 29^m\ 58^s$.

January 13	. .	+47 58 8.8
November 6	. .	6.6

WEISSE I, 508, $1^h\ 30^m\ 33^s$.

November 3 . . + 1 55 11.9

(*) $1^h\ 31^m\ 15^s$.

January 6	. .	+ 3 25 23.0
November 8	. .	22.9

105 PISCIUM, $1^h\ 32^m\ 39^s$.

October 28	. .	+15 44 44.3
November 24	. .	44.5

B. A. C. 503, $1^h\ 32^m\ 39^s$.

December 29 . . −37 11 8.3

(*) $1^h\ 32^m\ 50^s$.

December 9	. .	− 2 53 28.7
28	. .	26.7

WEISSE I, 558, $1^h\ 32^m\ 55^s$.

December 30 . . +14 35 48.3

WEISSE I, 557, $1^h\ 32^m\ 57^s$.

December 30 . . +14 36 4.7

WEISSE I, 576, $1^h\ 33^m\ 36^s$.

November 11 . . + 6 25 42.0

WEISSE I, 582, $1^h\ 33^m\ 47^s$.

December 3 . . − 2 15 39.7

(*) $1^h\ 34^m\ 1^s$.

December 23	. .	+ 3 4 52.8
28	. .	52.9

B. A. C. 494, $1^h\ 34^m\ 19^s$.

November 25 . . +86 17 16.8

WEISSE I, 601, $1^h\ 34^m\ 24^s$.

December 23	. .	+ 3 3 6.0
28	. .	5.6

107 PISCIUM, $1^h\ 35^m\ 27^s$.

		° ′ ″
November 6	. .	+19 38 7.4

(*) $1^h\ 39^m\ 0^s$.

October 29 . . + 3 0 54.0

O. ARG. S. 1049, $1^h\ 39^m\ 11^s$.

November 5 . . −27 0 45.1

B. A. C. 539, $1^h\ 39^m\ 25^s$.

January 6 . . − 6 23 3.2

O. ARG. S. 1052, $1^h\ 39^m\ 30^s$.

November 5 . . −27 3 1.1

O. ARG. S. 1056, $1^h\ 39^m\ 42^s$.

November 5 . . −26 57 35.5

(*) $1^h\ 39^m\ 49^s$.

December 3 . . −36 45 34.4

(*) $1^h\ 39^m\ 45^s$.

November 3	. .	−26 54 19.8
5	. .	20.1
8	. .	23.3
December 9	. .	24.1

O. ARG. S. 1066, $1^h\ 40^m\ 59^s$.

November 11 . . −18 7 58.7

4 ARIETIS, $1^h\ 41^m\ 5^s$.

January 13 . . +16 18 27.0

(*) $1^h\ 42^m\ 5^s$.

December 29 . . +13 38 49.2

(*) $1^h\ 42^m\ 39^s$.

December 29 . . +13 39 3.6

1 ARIETIS, $1^h\ 42^m\ 54^s$.

January 16	. .	+21 37 43.8
November 6	. .	42.8

(*) $1^h\ 43^m\ 3^s$.

January 6 . . +13 42 6.9

(*) $1^h\ 43^m\ 15^s$.

January 6 . . +13 39 43.0

O. ARG. S. 1116, $1^h\ 44^m\ 1^s$.

January 13 . . −23 24 47.2

ζ CETI, $1^h\ 45^m\ 3^s$.

November 25 . . −10 58 39.9

WEISSE I, 800, $1^h\ 45^m\ 28^s$.

December 23	. .	−12 58 29.8
28	. .	31.5

α TRIANGULI, $1^h\ 45^m\ 37^s$.

January 16 . . −28 56 38.5

(*) $1^h\ 45^m\ 50^s$.

November 8 . . −23 47 33.9

WEISSE I, 819, 1^h 46^m 30^s.
° ′ ″
October 29 . . − 1 57 20.8

WEISSE I, 831, 1^h 47^m 7^s.
December 3 . . − 1 59 20.3

WEISSE I, 843, 1^h 47^m 48^s.
November 3 . . − 1 50 22.6

(*) 1^h 49^m 41^s.
November 24 . . −27 7 41.6

λ ARIETIS, (2d *,) 1^h 50^m 41^s.
December 9 . . +22 58 5.7
23 . . 7.0

LACAILLE 570, 1^h 50^m 57^s.
January 13 . . −26 15 23.8
November 8 . . 21.4

O. ARG. S. 1189, 1^h 51^m 3^s.
November 11 . . −18 18 45.9

B. A. C. 609, 1^h 52^m 27^s.
November 6 . . +11 39 44.8

DURCHMUSTERUNG 217, 1^h 52^m 28^s.
January 6 . . − 1 38 27.1
December 3 . . 25.4

LACAILLE 586, (1st *,) 1^h 52^m 56^s.
November 25 . . −23 33 9.1

LACAILLE 586, (2d *,) 1^h 52^m 56^s.
November 25 . . −23 33 12.3

O. ARG. S. 1219, 1^h 53^m 20^s.
December 28 . . −24 4 12.8

B. A. C. 619, 1^h 53^m 57^s.
January 16 . . −41 21 30.6

ANONYMOUS, 1^h 54^m 58^s.
January 16 . . −41 20 46.4

α PISCIUM, 1^h 55^m 19^s.
December 29 . . + 2 8 7.9

γ^1 ANDROMEDÆ, 1^h 55^m 45^s.
November 3 . . +41 42 17.7

γ^2 ANDROMEDÆ, 1^h 55^m 45^s.
November 3 . . +41 42 18.0

O. ARG. S. 1256, 1^h 56^m 38^s.
December 9 . . −27 22 8.6

O. ARG. S. 1259, 1^h 56^m 52^s.
November 11 . . −24 30 44.8

O. ARG. S. 1261, 1^h 56^m 57^s.
November 25 . . −22 32 16.8

(*) 1^h 57^m 4^s.
December 23 . . + 9 28 32.1

O. ARG. S. 1266, 1^h 57^m 24^s.
° ′ ″
January 6 . . −25 45 10.7
December 29 . . 10.9

(*) 1^h 57^m 40^s.
October 29 . . −18 8 16.7
December 3 . . 17.3

WEISSE I, 1045, 1^h 59^m 46^s.
November 6 . . + 9 51 24.7

WEISSE I, 1047, 1^h 59^m 51^s.
December 28 . . +14 2 13.7
30 . . 12.5

(*) 2^h 0^m 19^s.
November 15 . . + 3 9 55.2

(*) 2^h 4^m 36^s.
January 6 . . −28 52 21.4
16 . . 18.8

LACAILLE 649, 2^h 4^m 49^s.
January 6 . . −28 50 1.3

O. ARG. N. 2484, 2^h 5^m 10^s.
December 9 . . +52 30 46.1

(*) 2^h 5^m 11^s.
November 5 . . + 3 45 6.7
December 3 . . 11.0

LACAILLE 660, 2^h 5^m 12^s.
January 20 . . −38 58 45.8
November 24 . . 46.3

WEISSE II, 51, 2^h 5^m 14^s.
December 23 . . + 3 58 44.1

WEISSE II, 56, 2^h 5^m 33^s.
December 28 . . +11 16 13.1
30 . . 13.7

WEISSE II, 61, 2^h 5^m 51^s.
December 1 . . +11 14 51.6

O. ARG. S. 1384, 2^h 5^m 54^s.
December 29 . . −18 20 21.7

19 ARIETIS, 2^h 5^m 58^s.
November 17 . . +14 40 10.9

O. ARG. S. 1404, 2^h 7^m 35^s.
December 30 . . −29 34 45.8

θ ARIETIS, 2^h 10^m 52^s.
January 13 . . +19 17 55.6

(*) 2^h 11^m 42^s.
December 9 . . +55 18 34.9

WEISSE II, 155, 2^h 11^m 45^s.
January 16 . . +12 23 24.1

(*) 2^h 12^m 44^s.
° ′ ″
January 6 . . − 4 43 37.5
20 . . 38.1

ο CETI, 2^h 12^m 47^s.
November 5 . . − 3 34 11.9
6 . . 6.6
11 . . 7.0

B. A. C. 723, 2^h 13^m 3^s.
November 25 . . −26 33 42.2
December 29 . . 40.3

WEISSE II, 188, 2^h 13^m 33^s.
November 17 . . +13 4 23.6
24 . . 25.3

O. ARG. S. 1489, 2^h 13^m 58^s.
November 15 . . −24 13 53.6

O. ARG. N. 2680, 2^h 14^m 49^s.
December 3 . . +52 5 54.6

WEISSE II, 231, 2^h 15^m 39^s.
November 9 . . −11 22 11.0

κ FORNACIS, 2^h 16^m 35^s.
November 11 . . −24 24 27.1

LACAILLE 726, 2^h 18^m 27^s.
January 6 . . −26 26 18.9

(*) 2^h 19^m 21^s.
January 16 . . + 5 42 24.7

LACAILLE 727, 2^h 19^m 24^s.
December 9 . . −22 23 45.0

O. Arg. S. 1554, 2^h 19^m 56^s.
December 28 . . −24 25 48.0

O. ARG. S. 1558, 2^h 20^m 21^s.
January 20 . . −24 28 4.7
December 28 . . 4.7

12 TRIANGULI, 2^h 20^m 30^s.
January 13 . . +29 5 17.2

LACAILLE 744, 2^h 22^m 45^s.
December 3 . . −27 0 51.4

B. A. C. 766, 2^h 23^m 1^s.
January 13 . . +24 39 28.2

26 ARIETIS, 2^h 23^m 21^s.
November 17 . . +19 16 36.1
December 1 . . 38.4

LACAILLE 756, 2^h 23^m 36^s.
December 28 . . −24 41 9.9

WEISSE II, 379, 2^h 23^m 42^s.
December 29 . . +12 51 13.8

B. A. C. 773, 2^h 23^m 58^s.
° ′ ″
December 9 . . −23 15 46.3

B. A. C. 774, 2^h 24^m 19^s.
January 16 . . −25 46 1.2

WEISSE II, 397, 2^h 24^m 38^s.
December 30 . . + 1 41 31.4

LACAILLE 767, 2^h 24^m 41^s.
January 6 . . −33 41 14.4

B. A. C. 776, 2^h 24^m 46^s.
December 30 . . + 1 41 24.1

75 CETI, 2^h 25^m 32^s.
November 25 . . − 1 36 35.9

B. A. C. 790, (1st *,) 2^h 28^m 6^s.
January 20 . . −28 48 21.9

B. A. C. 790, (2d *,) 2^h 28^m 7^s.
January 20 . . −28 48 16.0

LACAILLE 789, 2^h 28^m 37^s.
January 6 . . −33 41 9.3

LACAILLE 787, 2^h 28^m 44^s.
November 24 . . −22 29 53.2

O. ARG. S. 1655, 2^h 28^m 58^s.
November 11 . . −17 51 38.2

ν CETI, 2^h 29^m 0^s.
January 16 . . + 5 1 29.7

LACAILLE 792, 2^h 29^m 28^s.
December 3 . . −29 16 0.2

B. A. C. 800, 2^h 29^m 39^s.
January 13 . . + 7 9 45.5

(*) 2^h 30^m 27^s.
December 9 . . +25 38 26.5

B. A. C. 803, 2^h 30^m 32^s.
November 25 . . −30 36 43.6

LACAILLE 802, 2^h 31^m 26^s.
November 17 . . −29 33 30.0

(*) 2^h 32^m 15^s.
December 30 . . −34 14 30.1

(*) 2^h 33^m 9^s.
November 24 . . −31 9 42.1

LACAILLE 816, 2^h 33^m 36^s.
January 16 . . −26 7 50.6

O. ARG. S. 1738, 2^h 34^m 42^s.
December 28 . . −24 41 41.5

O. Arg. S. 1744, $2^h\ 35^m\ 6^s$.		
		° ′ ″
January	6 . .	−18 22 40.5
Weisse II, 603, $2^h\ 35^m\ 45^s$.		
November	11 . .	+12 42 40.0
π Ceti, $2^h\ 37^m\ 56^s$.		
November	17 . .	−14 24 35.6
December	3 . .	35.3
(*) $2^h\ 38^m\ 19^s$.		
November	25 . .	−28 59 20.7
Weisse II, 694, $2^h\ 41^m\ 15^s$.		
January	6 . .	+12 24 21.7
β Fornacis, $2^h\ 43^m\ 36^s$.		
January	13 . .	−32 57 11.4
O. Arg. S. 1838, $2^h\ 43^m\ 38^s$.		
January	20 . .	−17 49 15.1
Lacaille 891, $2^h\ 43^m\ 52^s$.		
January	16 . .	−31 21 16.4
B. A. C. 894, $2^h\ 46^m\ 23^s$.		
January	6 . .	−31 21 13.5
Lalande 5358, $2^h\ 47^m\ 26^s$.		
December	23 . .	− 2 10 22.3
Lacaille 908, $2^h\ 47^m\ 27^s$.		
November	15 . .	−22 37 21.9
(*) $2^h\ 47^m\ 55^s$.		
December	9 . .	+25 38 25.9
	28 . .	26.2
(*) $2^h\ 47^m\ 55^s$.		
November	11 . .	−23 40 34.7
ρ^2 Arietis, $2^h\ 48^m\ 27^s$.		
January	22 . .	+17 48 11.7
η Eridani, $2^h\ 50^m\ 4^s$.		
December	29 . .	− 9 24 58.2
Lacaille 932, (1st *,) $2^h\ 51^m\ 26^s$.		
January	16 . .	−25 29 53.1
Weisse II, 881, $2^h\ 51^m\ 27^s$.		
December	30 . .	+14 37 59.1
Lacaille 932, (2d *,) $2^h\ 51^m\ 28^s$.		
January	16 . .	−25 29 32.3
(*) $2^h\ 52^m\ 2^s$.		
December	30 . .	+14 40 32.2
ρ^3 Eridani, $2^h\ 57^m\ 50^s$.		
January	13 . .	− 8 6 38.4
(*) $2^h\ 58^m\ 14^s$.		
December	3 . .	+13 46 7.9

(*) $2^h\ 58^m\ 25^s$.		
		° ′ ″
December	9 . .	−23 39 6.6
(*) $2^h\ 58^m\ 37^s$.		
November	11 . .	+13 46 6 1
(*) $2^h\ 58^m\ 42^s$.		
November	11 . .	+13 45 44.4
B. A. C. 978, $3^h\ 2^m\ 15^s$.		
January	6 . .	−28 19 51.2
Lacaille 988, $3^h\ 2^m\ 28^s$.		
January	13 . .	−30 48 48.8
Weisse III, 23, $3^h\ 3^m\ 20^s$.		
January	16 . .	−10 4 21.0
(*) $3^h\ 3^m\ 46^s$.		
February	1 . .	−28 51 40.5
	5 . .	41.1
Weisse III, 30, $3^h\ 3^m\ 57^s$.		
December	30 . .	+ 9 29 44.4
12 Eridani, $3^h\ 6^m\ 30^s$.		
January	22 . .	−29 30 4.0
December	29 . .	2.3
Weisse III, 95, $3^h\ 6^m\ 40^s$.		
January	23 . .	+ 3 9 10.1
(*) $3^h\ 7^m\ 9^s$.		
January	6 . .	−18 7 8.3
Lacaille 1010, $3^h\ 7^m\ 17^s$.		
December	23 . .	−28 3 43.7
(*) $3^h\ 7^m\ 27^s$.		
January	6 . .	−18 6 22.8
(*) $3^h\ 7^m\ 47^s$.		
December	28 . .	+12 39 26.0
Weisse III, 145, $3^h\ 9^m\ 35^s$.		
January	16 . .	+ 5 21 48.7
Weisse (2) III, 196, $3^h\ 9^m\ 51^s$.		
December	30 . .	+17 5 36.0
(*) $3^h\ 13^m\ 7^s$.		
February	5 . .	+22 42 44.3
Weisse III, 224, $3^h\ 13^m\ 33^s$.		
December	28 . .	+ 8 33 56.9
Weisse III, 228, $3^h\ 13^m\ 37^s$.		
January	6 . .	− 3 29 28.4
December	23 . .	23.3
Weisse III, 240, $3^h\ 14^m\ 14^s$.		
January	23 . .	− 3 34 48.1
(*) $3^h\ 14^m\ 33^s$.		
December	29 . .	+ 8 53 35.4

(*) $3^h\ 14^m\ 44^s$.		
		° ′ ″
January	16 . .	−24 35 3.6
B. A. C. 1046, $3^h\ 15^m\ 8^s$.		
January	22 . .	−26 45 47.6
(*) $3^h\ 15^m\ 57^s$.		
February	1 . .	+24 57 50.9
December	30 . .	52.2
B. A. C. 1063, $3^h\ 19^m\ 29^s$.		
January	23 . .	+49 23 39.2
(*) $3^h\ 21^m\ 28^s$.		
January	6 . .	+36 59 1.8
	22 . .	0.9
Weisse (2) III, 420, $3^h\ 21^m\ 31^s$.		
January	6 . .	+36 57 51.3
	22 . .	50.5
(*) $3^h\ 22^m\ 31^s$.		
February	1 . .	+ 5 25 38.8
December	28 . .	39.2
(*) $3^h\ 22^m\ 40^s$.		
February	1 . .	+ 5 28 27.0
December	28 . .	27.0
Rumker 879, $3^h\ 23^m\ 26^s$.		
January	16 . .	+18 21 17.5
Weisse (2) III, 461, $3^h\ 23^m\ 29^s$.		
January	6 . .	+37 1 50.6
Weisse (2) III, 464, $3^h\ 23^m\ 36^s$.		
January	6 . .	+37 4 11.0
	22 . .	10.5
Lacaille 1114, $3^h\ 24^m\ 3^s$.		
January	23 . .	−22 57 16.0
17 Eridani, $3^h\ 24^m\ 8^s$.		
December	3 . .	− 5 31 16.4
(*) $3^h\ 24^m\ 16^s$.		
December	29 . .	+ 7 5 14.9
	30 . .	6.5
	Very faint.	
12 Tauri, $3^h\ 33^m\ 3^s$.		
December	3 . .	+ 2 37 59.2
	29 . .	58.3
Weisse (2) III, 721, $3^h\ 33^m\ 54^s$.		
January	16 . .	+18 58 6.0
	23 . .	4.2
Rumker 940, $3^h\ 34^m\ 54^s$.		
January	6 . .	+14 22 24.5
December	3 . .	25.8
Weisse (2) III, 750, $3^h\ 35^m\ 23^s$.		
February	1 . .	+37 57 28.9
	5 . .	30.0
December	28 . .	30.5

(*) $3^h\ 35^m\ 23^s$.		
		° ′ ″
December	30 . .	+13 23 7.4
Weisse (2) III, 751, $3^h\ 35^m\ 26^s$.		
February	1 . .	+37 57 30.6
	5 . .	31.7
December	28 . .	31.9
o Persei, $3^h\ 36^m\ 5^s$.		
February	13 . .	+31 52 25.9
18 Tauri, $3^h\ 37^m\ 21^s$.		
January	23 . .	+24 25 46.0
February	8 . .	46.4
19 Tauri, $3^h\ 37^m\ 26^s$.		
January	13 . .	+24 3 26.2
February	1 . .	27.2
Lacaille 1196, $3^h\ 37^m\ 55^s$.		
December	23 . .	−31 25 57.2
21 Tauri, $3^h\ 38^m\ 7^s$.		
January	13 . .	+24 8 48.9
February	1 . .	49.3
(*) $3^h\ 39^m\ 38^s$.		
February	5 . .	+11 16 2.7
O. Arg. S. 2504, $3^h\ 40^m\ 4^s$.		
December	29 . .	−23 47 19.9
Weisse (2) III, 881, $3^h\ 40^m\ 28^s$.		
December	28 . .	+26 11 9.7
	30 . .	10.4
(*) $3^h\ 41^m\ 16^s$.		
January	16 . .	+15 6 13.8
	22 . .	13.7
Weisse III, 774, $3^h\ 41^m\ 29^s$.		
January	16 . .	+15 11 7.5
	22 . .	4.2
B. A. C. 1182, $3^h\ 41^m\ 32^s$.		
January	13 . .	+23 58 55.7
February	1 . .	54.6
Weisse III, 781, $3^h\ 41^m\ 40^s$.		
February	8 . .	+11 18 28.6
τ^7 Eridani, $3^h\ 41^m\ 59^s$.		
February	13 . .	−24 16 45.1
Weisse (2) III, 917, $3^h\ 42^m\ 28^s$.		
January	23 . .	+34 42 8.8
O. Arg. S. 2571, $3^h\ 44^m\ 6^s$.		
January	6 . .	−27 30 21.0
Weisse (2) III, 972, $3^h\ 45^m\ 29^s$.		
December	30 . .	+38 9 33.8
(*) $3^h\ 45^m\ 30^s$.		
December	30 . .	+38 8 18.7

B. A. C. 1205, 3^h 45^m 30^s.

° ′ ″
February 5 . . − 1 32 23.5
December 28 . . 23.6

τ^8 Eridani, 3^h 48^m 9^s.

January 22 . . −24 59 54.2

Lalande 7220, 3^h 48^m 17^s.

January 23 . . +22 44 40.6

Weisse (2) III, 1082, 3^h 50^m 37^s.

January 23 . . +22 43 50.3

(*) 3^h 55^m 25^s.

February 1 . . −21 30 33.3
5 . . 33.9
8 . . 34.3

Lacaille 1326, 3^h 57^m 1^s.

January 23 . . −34 50 43.4

Weisse III, 1092, 3^h 57^m 1^s.

February 13 . . +12 8 52.7

Lacaille 1324, 3^h 57^m 3^s.

January 22 . . −28 53 32.9

B. A. C. 1247, 3^h 58^m 15^s.

January 16 . . +83 28 55.4

ψ Tauri, 3^h 58^m 54^s.

February 15 . . +28 38 52.3
December 10 . . 51.6
29 . . 52.8

c Persei, 3^h 59^m 13^s.

December 13 . . +47 21 46.6

O. Arg. S. 2793, 3^h 59^m 46^s.

February 8 . . −30 32 7.7

ω^1 Tauri, 4^h 1^m 31^s.

February 15 . . +19 15 48.8
19 . . 49.3

(*) 4^h 2^m 7^s.

February 5 . . − 7 49 41.0

Weisse IV, 1, 4^h 2^m 34^s.

January 22 . . +17 45 32.0

(*) 4^h 4^m 3^s.

January 23 . . −28 9 12.5

Lalande 7819, 4^h 4^m 29^s.

January 16 . . − 9 9 37.1

(*) 4^h 5^m 59^s.

December 3 . . +44 25 46.1

(*) 4^h 6^m 6^s.

February 1 . . − 6 50 48.9
13 . . 48.8

(*) 4^h 7^m 14^s.

° ′ ″
February 5 . . −28 19 5.1

Weisse IV, 114, 4^h 7^m 19^s.

December 29 . . −10 43 9.9

Lacaille 1387, 4^h 8^m 0^s.

January 22 . . −33 7 41.1

(*) 4^h 8^m 7^s.

January 23 . . −31 36 53.7

B. A. C. 1308, 4^h 8^m 50^s.

February 8 . . −30 26 38.7

Lacaille 1389, 4^h 8^m 55^s.

December 10 . . −32 22 14.5

(*) 4^h 11^m 47^s.

February 1 . . −30 24 20.2

58 Tauri, 4^h 13^m 11^s.

February 5 . . +14 46 54.7

(*) 4^h 13^m 28^s.

February 13 . . −27 2 59.7

Rumker 1159, 4^h 13^m 50^s.

January 16 . . +17 57 15.1
February 15 . . 14.2

Lacaille 1416, 4^h 13^m 53^s.

December 29 . . −34 26 17.2

(*) 4^h 13^m 59^s.

January 23 . . −31 38 42.2

O. Arg. S. 2997, 4^h 14^m 20^s.

February 8 . . −29 6 10.3
December 10 . . 6.6

Lacaille 1433, 4^h 17^m 11^s.

December 3 . . −35 12 18.5

O. Arg. S. 3044, 4^h 18^m 11^s.

January 22 . . −27 57 36.2

υ^1 Tauri, 4^h 18^m 29^s.

January 13 . . +22 31 0.0

Lacaille 1449, 4^h 20^m 36^s.

January 23 . . −35 58 13.4

(*) 4^h 20^m 56^s.

February 5 . . +14 47 48.7
8 . . 47.1

(*) 4^h 21^m 1^s.

February 5 . . +14 46 28.9
13 . . 26.9

Lacaille 1459, 4^h 22^m 11^s.

January 23 . . −29 29 34.7
February 19 . . 34.0

Lacaille 1463, 4^h 22^m 39^s.

° ′ ″
January 16 . . −32 42 1.6

(*) 4^h 22^m 56^s.

February 1 . . +29 1 4.5

(*) 4^h 23^m 19^s.

December 29 . . +29 1 32.1

(*) 4^h 23^m 35^s.

January 16 . . −32 45 17.2
22 . . 17.0

Weisse (2) IV, 538, 4^h 25^m 48^s.

February 15 . . +21 57 51.8

Weisse (2) IV, 562, 4^h 26^m 54^s.

February 5 . . +22 6 25.0

(*) 4^h 29^m 18^s.

February 8 . . +22 0 59.6
13 . . 61.7

(*) 4^h 31^m 0^s.

January 16 . . −26 49 42.5

Lacaille 1537, 4^h 31^m 50^s.

January 23 . . −38 5 18.0

Weisse (2) IV, 720, 4^h 33^m 53^s.

February 1 . . +22 28 41.4

Weisse IV, 722, 4^h 34^m 2^s.

January 22 . . +14 34 10.3

(*) 4^h 34^m 4^s.

February 19 . . + 8 1 40.3

Weisse IV, 729, 4^h 34^m 15^s.

February 13 . . − 8 2 57.2
December 29 . . 54.4

B. A. C. 1450, 4^h 34^m 40^s.

January 13 . . −24 44 16.9

Lacaille 1557, 4^h 36^m 55^s.

February 8 . . −39 50 4.1

B. A. C. 1460, 4^h 37^m 11^s.

January 13 . . +10 54 5.8

(*) 4^h 40^m 19^s.

February 8 . . +10 44 1.1

Lacaille 1580, 4^h 40^m 41^s.

January 23 . . −25 23 54.3

(*) 4^h 41^m 1^s.

January 16 . . +10 47 5.3
February 1 . . 4.1

(*) 4^h 41^m 5^s.

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February 1 . . +10 41 11.4
5 . . 10.7

(*) 4^h 41^m 12^s.

February 5 . . +10 41 11.8

(*) 4^h 41^m 14^s.

January 16 . . +10 41 52.3
February 5 . . 50.8

(*) 4^h 41^m 15^s.

February 13 . . +10 38 5.7

(*) 4^h 41^m 17^s.

January 16 . . +10 44 2.0

(*) 4^h 41^m 20^s.

January 16 . . +10 42 47.0
February 8 . . 47.2

(*) 4^h 41^m 28^s.

February 1 . . +10 39 26.8
5 . . 26.1
13 . . 26.3

Lacaille 1595, 4^h 41^m 42^s.

February 10 . . −36 2 36.1
24 . . 32.4

(*) 4^h 41^m 52^s.

February 19 . . −29 59 46.5

(*) 4^h 41^m 52^s.

December 29 . . −29 38 28.7

π Orionis, (1st *,) 4^h 42^m 45^s.

January 22 . . + 6 43 57.0
March 1 . . 56.2

Lacaille 1610, 4^h 44^m 23^s.

January 23 . . −34 32 18.3

(*) 4^h 45^m 39^s.

February 5 . . +22 33 20.0

B. A. C. 1496, 4^h 45^m 39^s.

January 13 . . +74 3 45.1

(*) 4^h 45^m 59^s.

January 16 . . +43 53 17.6

Weisse IV, 986, 4^h 46^m 8^s.

February 1 . . + 8 20 16.9

(*) 4^h 46^m 28^s.

January 16 . . +43 54 20.5

B. A. C. 1513, 4^h 47^m 5^s.

January 23 . . −34 27 30.2

B. A. C. 1510, 4^h 48^m 9^s.

January 22 . . +73 52 13.0

Lacaille 1642, 4^h 48^m 46^s.

January 23 . . −38 21 34.2

(*) $4^h\ 48^m\ 49^s$.

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February 13 . . +30 0 56.8

(*) $4^h\ 49^m\ 26^s$.

January 16 . . +43 56 8.5

O. Arg. S. 3494, $4^h\ 49^m\ 28^s$.

February 24 . . −29 5 37.4

Lacaille 1652, $4^h\ 49^m\ 34^s$.

January 23 . . −38 22 29.9

O. Arg. S. 3506, $4^h\ 50^m\ 6^s$.

March 1 . . −23 27 18.7

O. Arg. S. 3516, $4^h\ 50^m\ 53^s$.

March 1 . . −23 29 44.6

Weisse IV, 1105, $4^h\ 51^m\ 19^s$.

February 1 . . + 1 28 20.2
8 . . 19.6

Weisse (2) 1138, $4^h\ 51^m\ 22^s$.

February 19 . . +22 23 16.8

π^6 Orionis, $4^h\ 51^m\ 46^s$.

February 8 . . + 1 30 44.8
December 29 . . 45.3

(*) $4^h\ 53^m\ 22^s$.

February 24 . . −29 5 11.7

Lacaille 1673, $4^h\ 53^m\ 57^s$.

February 10 . . −28 38 24.3

(*) $4^h\ 54^m\ 36^s$.

February 19 . . −28 48 18.4

O. Arg. N. 5439, $4^h\ 54^m\ 39^s$.

February 15 . . +45 35 36.7

(*) $4^h\ 54^m\ 41^s$.

February 13 . . + 5 52 18.8

Weisse IV, 1249, $4^h\ 55^m\ 54^s$.

January 13 . . +30 18 30.1

(*) $4^h\ 56^m\ 33^s$.

February 1 . . −31 35 46.3

(*) $4^h\ 56^m\ 42^s$.

February 8 . . +45 17 29.1

(*) $4^h\ 57^m\ 59^s$.

January 16 . . +45 4 45.6

Lacaille 1704, $4^h\ 58^m\ 28^s$.

February 5 . . −24 34 13.9

B. A. C. 1578, $4^h\ 59^m\ 53^s$.

February 13 . . −26 19 47.5

Radcliffe 1377, $4^h\ 59^m\ 54^s$.

January 23 . . +85 32 54.8

l Tauri, $5^h\ 0^m\ 7^s$.

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December 29 . . +20 14 40.3

B. A. C. 1565, $5^h\ 1^m\ 5^s$.

February 15 . . +79 4 27.7

(*) $5^h\ 1^m\ 12^s$.

February 19 . . −28 43 12.1

Weisse V, 22, $5^h\ 3^m\ 19^s$.

February 24 . . +29 44 25.2

O. Arg. S. 3710, $5^h\ 3^m\ 29^s$.

February 10 . . −25 40 13.9

(*) $5^h\ 3^m\ 40^s$.

February 1 . . + 4 15 35.8

Weisse V, 48, $5^h\ 4^m\ 30^s$.

March 1 . . +14 12 6.1

(* 130) Washington, $5^h\ 6^m\ 56^s$.

February 19 . . + 2 13 3.0

Weisse V, 153, $5^h\ 8^m\ 11^s$.

January 16 . . + 2 26 14.7

Weisse V, 156, $5^h\ 8^m\ 14^s$.

January 16 . . + 2 27 28.3

(*) $5^h\ 10^m\ 10^s$.

December 29 . . +30 14 4.5

Lacaille 1774, $5^h\ 10^m\ 17^s$.

January 23 . . −29 54 27.4
February 1 . . 27.2

B. A. C. 1641, $5^h\ 11^m\ 3^s$.

February 24 . . −35 4 25.0

Lacaille 1779, $5^h\ 11^m\ 14^s$.

February 5 . . −25 28 36.4

Lacaille 1787, $5^h\ 12^m\ 1^s$.

February 15 . . −31 25 30.4

(* 131) Washington, $5^h\ 12^m\ 39^s$.

February 13 . . + 0 59 2.1

(*) $5^h\ 12^m\ 45^s$.

March 1 . . −27 37 35.3

(*) $5^h\ 14^m\ 22^s$.

January 23 . . −25 23 23.0
February 19 . . 22.0

(*) $5^h\ 16^m\ 57^s$.

February 1 . . −20 10 0.5
5 . . 0.7

Schjellerup 1787, $5^h\ 21^m\ 3^s$.

January 23 . . − 0 22 15.5

(*) $5^h\ 22^m\ 31^s$.

February 5 . . +26 39 46.8

β Leporis, $5^h\ 22^m\ 38^s$.

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February 8 . . −20 51 54.0

(*) $5^h\ 22^m\ 45^s$.

March 1 . . −29 41 0.7

(*) $5^h\ 23^m\ 17^s$.

February 1 . . −26 36 52.7

(*) $5^h\ 23^m\ 21^s$.

January 23 . . −29 28 5.3

(*) $5^h\ 23^m\ 27^s$.

January 23 . . −29 27 27.9

O. Arg. N. 5930, $5^h\ 23^m\ 58^s$.

February 13 . . +70 16 31.6

119 Tauri, $5^h\ 24^m\ 35^s$.

December 29 . . +18 29 42.6

120 Tauri, $5^h\ 25^m\ 55^s$.

December 29 . . +18 26 41.3

(*) $5^h\ 29^m\ 34^s$.

February 5 . . +26 45 4.7

(*) $5^h\ 29^m\ 50^s$.

February 8 . . +25 31 40.2
15 . . 39.2

(*) $5^h\ 30^m\ 37^s$.

February 5 . . +26 40 51.8

Lacaille 1906, $5^h\ 30^m\ 57^s$.

January 23 . . −30 37 11.1

O. Arg. N. 6052, $5^h\ 31^m\ 20^s$.

March 1 . . +68 47 38.8

Weisse V, 776, $5^h\ 31^m\ 34^s$.

February 19 . . − 1 14 51.2

Lacaille 1913, $5^h\ 32^m\ 28^s$.

December 29 . . −26 47 49.6

O. Arg. N. 6082, $5^h\ 32^m\ 45^s$.

February 24 . . +70 12 3.0

(*) $5^h\ 33^m\ 20^s$.

February 13 . . +21 15 14.7

O. Arg. S. 4264, $5^h\ 39^m\ 2^s$.

January 23 . . −27 36 11.8

(*) $5^h\ 39^m\ 12^s$.

February 1 . . −20 46 45.1
19 . . 46.5

Weisse V, 1034, $5^h\ 41^m\ 42^s$.

February 5 . . + 9 50 51.6
15 . . 53.2

(*) $5^h\ 41^m\ 43^s$.

February 8 . . +23 39 54.6
13 . . 54.6

(*) $5^h\ 41^m\ 54^s$.

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February 1 . . +25 48 4.0
March 1 . . 0.8
December 29 . . 4.2

Lacaille 1990, $5^h\ 41^m\ 55^s$.

March 12 . . −28 41 20.1

(* 94) Washington, $5^h\ 44^m\ 17^s$.

January 23 . . +25 45 37.0
February 1 . . 38.2

Weisse V, 1176, $5^h\ 46^m\ 35^s$.

February 19 . . −14 35 22.1

O. Arg. S. 4395, $5^h\ 46^m\ 46^s$.

February 24 . . −25 58 34.4

(*) $5^h\ 47^m\ 50^s$.

March 1 . . +72 26 36.5

(*) $5^h\ 48^m\ 53^s$.

January 23 . . + 7 22 28.3

(*) $5^h\ 49^m\ 26^s$.

February 24 . . −28 56 32.9

O. Arg. N. 6356, $5^h\ 50^m\ 5^s$.

March 1 . . +72 23 39.2

O. Arg. S. 4453, $5^h\ 50^m\ 26^s$.

February 24 . . −28 58 23.5

O. Arg. S. 4457, $5^h\ 50^m\ 35^s$.

February 1 . . −29 9 28.0

(*) $5^h\ 50^m\ 49^s$.

January 23 . . + 7 21 4.8

(*) $5^h\ 51^m\ 45^s$.

February 5 . . +19 45 58.7

O. Arg. N. 6390, $5^h\ 52^m\ 31^s$.

February 19 . . +72 17 59.3

O. Arg. S. 4481, $5^h\ 52^m\ 6^s$.

February 24 . . −28 53 35.4

O. Arg. S. 4499, $5^h\ 53^m\ 7^s$.

February 15 . . −29 7 23.1
March 12 . . 26.8

(*) $5^h\ 53^m\ 8^s$.

February 8 . . +23 19 48.6

(*) $5^h\ 53^m\ 10^s$.

February 5 . . +19 48 22.3

Lalande 11343, $5^h\ 53^m\ 10^s$.

February 8 . . +23 17 46.2

Lacaille 2090, $5^h\ 54^m\ 11^s$.

February 13 . . −34 22 14.0

O. Arg. S. 4527, $5^h\ 54^m\ 56^s$.

° ′ ″

February 15 . . −29 12 55.2

Weisse (2) V, 1783, $5^h\ 55^m\ 19^s$.

March 1 . . +34 22 26.6

(*) $5^h\ 57^m\ 43^s$.

January 23 . . +73 32 58.5
February 1 . . 60.3

(*) $5^h\ 58^m\ 58^s$.

January 23 . . +73 34 54.4
February 1 . . 55.8

(*) $5^h\ 59^m\ 59^s$.

February 5 . . −14 48 44.4
8 . . 43.9

Weisse V, 1530, $6^h\ 0^m\ 9^s$.

February 10 . . − 4 10 56.3

Lacaille 2126, $6^h\ 0^m\ 19^s$.

March 12 . . −24 11 10.2

O. Arg. N. 6525, $6^h\ 1^m\ 6^s$.

February 13 . . +73 45 10.3
19 . . 9.3

O. Arg. S. 4680, $6^h\ 2^m\ 25^s$.

February 24 . . −30 36 40.2

π Columbæ, (1st *,) $6^h\ 2^m\ 36^s$.

February 15 . . −42 17 0.6

(*) $6^h\ 3^m\ 45^s$.

March 1 . . +31 27 2.2

(*) $6^h\ 3^m\ 53^s$.

March 1 . . +31 26 20.6

(*) $6^h\ 6^m\ 33^s$.

February 1 . . −26 42 12.4

(*) $6^h\ 7^m\ 2^s$.

February 5 . . −27 33 40.8
19 . . 39.6

(*) $6^h\ 7^m\ 3^s$.

March 12 . . +40 57 42.8

71 Orionis, $6^h\ 7^m\ 9^s$.

February 10 . . +19 11 52.4

O. Arg. N. 7006, $6^h\ 25^m\ 20^s$.

February 8 . . +48 2 43.8

(*) $6^h\ 25^m\ 32^s$.

February 13 . . −29 56 17.5

O. Arg. S. 5251, $6^h\ 26^m\ 50^s$.

February 19 . . −29 12 56.4

Lalande 12557, $6^h\ 27^m\ 1^s$.

February 5 . . +24 43 59.6

(*) $6^h\ 27^m\ 7^s$.

° ′ ″

February 15 . . −31 6 13.8

23 Geminorum, $6^h\ 28^m\ 27^s$.

February 10 . . +16 54 0.1

Lalande 12678, $6^h\ 33^m\ 13^s$.

March 12 . . +32 45 16.7
18 . . 20.1

O. Arg. S. 5463, $6^h\ 34^m\ 29^s$.

February 5 . . −23 35 12.2
8 . . 13.0

Lacaille 2388, $6^h\ 34^m\ 41^s$.

February 10 . . −30 20 43.1

Weisse VI, 1069, $6^h\ 35^m\ 49^s$.

February 13 . . −14 21 7.1

Lacaille 2399, $6^h\ 36^m\ 6^s$.

February 24 . . −30 31 26.0

(*) $6^h\ 37^m\ 44^s$.

February 19 . . +23 50 10.9
March 1 . . 9.1

O. Arg. S. 5574, $6^h\ 37^m\ 59^s$.

February 15 . . −29 6 35.0

(*) $6^h\ 38^m\ 18^s$.

February 24 . . +38 40 18.9
March 12 . . 16.6

(*) $6^h\ 38^m\ 21^s$.

February 24 . . +38 41 42.1
March 12 . . 39.5

O. Arg. S. 5654, $6^h\ 40^m\ 48^s$.

March 18 . . −28 40 32.3

(*) $6^h\ 40^m\ 55^s$.

February 5 . . +23 35 54.5

(*) $6^h\ 41^m\ 38^s$.

February 8 . . +52 8 22.9

Lacaille 2454, $6^h\ 43^m\ 26^s$.

February 10 . . −28 4 14.0

O. Arg. S. 5725, $6^h\ 43^m\ 27^s$.

February 15 . . −28 13 28.2

O. Arg. S. 5772, $6^h\ 45^m\ 5^s$.

February 19 . . −27 9 30.4

B. A. C. 2251, $6^h\ 45^m\ 16^s$.

February 5 . . −31 33 21.4

(*) $6^h\ 45^m\ 19^s$.

February 5 . . −31 33 2.6

(*) $6^h\ 45^m\ 28^s$.

March 12 . . −28 32 53.6

(*) $6^h\ 45^m\ 36^s$.

° ′ ″

March 12 . . −28 34 49.9

(*) $6^h\ 45^m\ 36^s$.

March 12 . . −28 35 0.6

Lacaille 2494, $6^h\ 47^m\ 15^s$.

February 8 . . −33 45 45.0

(*) $6^h\ 48^m\ 6^s$.

March 1 . . −24 15 26.6

B. A. C. 2266, $6^h\ 48^m\ 21^s$.

February 10 . . −28 21 50.4

Lacaille 2507, $6^h\ 48^m\ 45^s$.

February 15 . . −23 46 0.7

O. Arg. S. 5887, $6^h\ 49^m\ 17^s$.

March 18 . . −27 23 47.6

Lacaille 2519, $6^h\ 49^m\ 53^s$.

February 5 . . −31 32 19.4

Lacaille 2526, $6^h\ 50^m\ 30^s$.

February 24 . . −25 21 8.6

(*) $6^h\ 51^m\ 58^s$.

February 19 . . −30 43 23.4

Lacaille 2549, $6^h\ 53^m\ 6^s$.

February 10 . . −30 34 13.5

(*) $6^h\ 53^m\ 55^s$.

February 13 . . −26 5 19.2

O. Arg. S. 6073, $6^h\ 56^m\ 6^s$.

February 15 . . −30 28 57.8
March 1 . . 57.5

(*) $6^h\ 56^m\ 10^s$.

March 1 . . −30 27 7.1

(*) $6^h\ 56^m\ 12^s$.

March 1 . . −30 26 20.9

(*) $6^h\ 56^m\ 12^s$.

February 15 . . −30 25 48.7

(*) $7^h\ 2^m\ 7^s$.

February 19 . . −26 3 32.5
24 . . 33.0

O. Arg. S. 6262, $7^h\ 2^m\ 40^s$.

February 19 . . −26 4 40.0

(*) $7^h\ 2^m\ 57^s$.

February 15 . . −31 12 21.0

Lacaille 2637, $7^h\ 3^m\ 8^s$.

February 15 . . −31 13 17.1

Weisse VII, 63, $7^h\ 3^m\ 36^s$.

March 12 . . −14 34 36.6

Lacaille 2641, $7^h\ 4^m\ 17^s$.

° ′ ″

March 1 . . −25 1 20.9

48 Geminorum, $7^h\ 4^m\ 29^s$.

February 10 . . +24 20 37.9

B. A. C. 2371, $7^h\ 6^m\ 59^s$.

March 18 . . −20 36 23.9

53 Geminorum, $7^h\ 7^m\ 47^s$.

March 27 . . +28 7 15.5

O. Arg. S. 6442, $7^h\ 8^m\ 35^s$.

February 15 . . −27 4 22.6

(*) $7^h\ 10^m\ 2^s$.

February 10 . . −23 28 17.0

(*) $7^h\ 10^m\ 14^s$.

March 12 . . −14 37 50.8

Lacaille 2684, $7^h\ 10^m\ 17^s$.

February 10 . . −23 30 48.6

(*) $7^h\ 13^m\ 7^s$.

March 18 . . −29 39 1.0

O. Arg. S. 6623, $7^h\ 14^m\ 18^s$.

March 1 . . −26 19 56.4
5 . . 55.4

(*) $7^h\ 15^m\ 0^s$.

February 15 . . −14 24 11.7

(*) $7^h\ 15^m\ 26^s$.

February 19 . . +45 6 5.7

(*) $7^h\ 17^m\ 32^s$.

February 15 . . −14 30 52.1

Lacaille 2767, (1st *,) $7^h\ 17^m\ 33^s$.

February 24 . . −35 40 29.2

Lacaille 2767, (2d *,) $7^h\ 17^m\ 33^s$.

February 24 . . −35 40 20.8

(*) $7^h\ 17^m\ 36^s$.

February 10 . . −30 59 48.7

O. Arg. S. 6734, $7^h\ 18^m\ 12^s$.

March 15 . . −27 35 0.5
18 . . 3.2

(*) $7^h\ 18^m\ 13^s$.

February 24 . . −35 35 8.6

(*) $7^h\ 18^m\ 31^s$.

February 10 . . −31 2 55.1

(*) $7^h\ 19^m\ 6^s$.

March 12 . . −14 37 48.8
27 . . 44.6

Weisse VII, 569, $7^h\ 19^m\ 54^s$.

March 1 . . +10 27 41.2

(*) $7^{h}\ 20^{m}\ 7^{s}$.
° ′ ″
March 1 . . +10 20 48.0

(*) $7^{h}\ 21^{m}\ 5^{s}$.
March 12 . . +15 37 26.8

LACAILLE 2814, $7^{h}\ 22^{m}\ 36^{s}$.
March 5 . . −28 6 28.5

(*) $7^{h}\ 23^{m}\ 17^{s}$.
March 31 . . −18 36 32.5

WEISSE (2) VII, 667, $7^{h}\ 23^{m}\ 49^{s}$.
March 12 . . +15 31 15.0

WEISSE (2) VII, 681, $7^{h}\ 24^{m}\ 8^{s}$.
March 12 . . +15 36 54.6

WEISSE (2) VII, 727, $7^{h}\ 25^{m}\ 37^{s}$.
February 10 . . +16 15 28.6

WEISSE VII, 816, $7^{h}\ 27^{m}\ 34^{s}$.
February 15 . . +13 17 29.4
March 5 . . 32.5

WEISSE (2) VII, 789, $7^{h}\ 28^{m}\ 0^{s}$.
February 24 . . +41 7 47.7

WEISSE (2) VII, 791, $7^{h}\ 28^{m}\ 0^{s}$.
February 24 . . +41 4 13.9

LACAILLE 2857, $7^{h}\ 29^{m}\ 13^{s}$.
March 12 . . −26 43 54.6

LACAILLE 2859, $7^{h}\ 29^{m}\ 15^{s}$.
March 18 . . −33 11 1.8

LACAILLE 2867, $7^{h}\ 30^{m}\ 7^{s}$.
March 27 . . −28 4 58.5

(*) $7^{h}\ 30^{m}\ 34^{s}$.
February 19 . . −29 46 20.9

LACAILLE 2876, $7^{h}\ 31^{m}\ 43^{s}$.
March 31 . . −23 29 5.7

(*) $7^{h}\ 33^{m}\ 9^{s}$.
March 12 . . +15 33 18.9

B. A. C. 2526, $7^{h}\ 33^{m}\ 9^{s}$.
February 15 . . + 5 31 41.9
March 12 . . 38.6

(*) $7^{h}\ 33^{m}\ 48^{s}$.
February 19 . . −29 50 35.2

(*) $7^{h}\ 33^{m}\ 53^{s}$.
March 12 . . + 5 29 39.3

B. A. C. 2521, $7^{h}\ 34^{m}\ 35^{s}$.
March 5 . . +80 35 3.7

O. ARG. S. 7239, $7^{h}\ 35^{m}\ 27^{s}$.
March 18 . . −27 38 42.3

O. ARG. S. 7289, $7^{h}\ 36^{m}\ 59^{s}$.
° ′ ″
March 18 . . −27 37 39.4

LALANDE 15079, $7^{h}\ 37^{m}\ 49^{s}$.
February 24 . . −11 0 16.4

LALANDE 15073, $7^{h}\ 38^{m}\ 24^{s}$.
March 15 . . +21 26 5.2

O. ARG. S. 7376, $7^{h}\ 39^{m}\ 57^{s}$.
March 27 . . −27 19 35.5

WEISSE (2) VII, 1143, $7^{h}\ 40^{m}\ 14^{s}$.
March 5 . . +21 21 10.8
15 . . 10.7

LACAILLE 2952, $7^{h}\ 40^{m}\ 19^{s}$.
February 15 . . −23 56 28.0

B. A. C. 2581, $7^{h}\ 40^{m}\ 40^{s}$.
March 31 . . −33 55 7.0

(*) $7^{h}\ 40^{m}\ 53^{s}$.
March 27 . . −27 16 19.6

WEISSE VII, 1259, $7^{h}\ 42^{m}\ 20^{s}$.
March 1 . . −11 53 49.4

O. ARG. S. 7442, $7^{h}\ 42^{m}\ 20^{s}$.
February 15 . . −23 51 55.2

O. ARG. S. 7445, $7^{h}\ 42^{m}\ 26^{s}$.
March 27 . . −27 18 2.4

(*) $7^{h}\ 42^{m}\ 38^{s}$.
February 19 . . −29 48 50.9

O. ARG. S. 7464, $7^{h}\ 43^{m}\ 9^{s}$.
February 24 . . −26 43 21.7
March 18 . . 23.2

O. ARG. S. 7465, $7^{h}\ 43^{m}\ 11^{s}$.
February 24 . . −26 40 15.3
March 18 . . 16.7

O. ARG. S. 7473, $7^{h}\ 43^{m}\ 32^{s}$.
March 12 . . −29 56 20.1

(*) $7^{h}\ 48^{m}\ 43^{s}$.
March 15 . . −25 48 52.2

WEISSE (2) 1366, $7^{h}\ 48^{m}\ 56^{s}$.
March 1 . . +20 14 23.0

O. ARG. S. 7636, $7^{h}\ 49^{m}\ 4^{s}$.
March 18 . . −27 45 58.4
31 . . 58.0

(*) $7^{h}\ 50^{m}\ 3^{s}$.
April 3 . . −30 34 35.6

(*) $7^{h}\ 50^{m}\ 58^{s}$.
March 5 . . +11 59 41.2
12 . . 39.1

WEISSE VII, 1504, $7^{h}\ 51^{m}\ 45^{s}$.
° ′ ″
March 5 . . +12 2 43.3
12 . . 41.7

WEISSE (2) VII, 1520, $7^{h}\ 55^{m}\ 49^{s}$.
March 15 . . +28 9 23.1

(*) $7^{h}\ 56^{m}\ 48^{s}$.
March 1 . . +20 9 44.0

B. A. C. 2689, $7^{h}\ 57^{m}\ 18^{s}$.
March 5 . . −36 41 23.0

8 CANCRI, $7^{h}\ 57^{m}\ 46^{s}$.
March 18 . . +13 29 10.7
27 . . 11.2

WEISSE (2) VII, 1669, $8^{h}\ 0^{m}\ 59^{s}$.
February 24 . . +16 49 35.2

(*) $8^{h}\ 1^{m}\ 23^{s}$.
March 12 . . +42 0 58.6

O. ARG. S. 8072, $8^{h}\ 3^{m}\ 5^{s}$.
March 24 . . −24 0 34.8

WEISSE VIII, 22, $8^{h}\ 3^{m}\ 29^{s}$.
February 24 . . +16 44 25.4

O. ARG. S. 8166, $8^{h}\ 5^{m}\ 5^{s}$.
March 18 . . −21 51 8.6

O. ARG. S. 8169, $8^{h}\ 5^{m}\ 25^{s}$.
March 18 . . −29 45 51.9

WEISSE (2) VIII, 87, $8^{h}\ 6^{m}\ 4^{s}$.
April 3 . . +27 31 8.2
8 . . 6.0

O. ARG. S. 8225, $8^{h}\ 7^{m}\ 38^{s}$.
February 26 . . −23 54 5.7

β CANCRI, $8^{h}\ 9^{m}\ 25^{s}$.
March 27 . . + 9 35 6.8

30 LYNCIS, $8^{h}\ 9^{m}\ 51^{s}$.
March 31 . . +58 8 44.2

(*) $8^{h}\ 10^{m}\ 28^{s}$.
March 12 . . −30 10 57.7
April 8 . . 54.4

(*) $8^{h}\ 10^{m}\ 32^{s}$.
March 12 . . −30 12 14.7
April 8 . . 14.1

O. ARG. S. 8343, $8^{h}\ 12^{m}\ 13^{s}$.
March 5 . . −24 54 55.4

LACAILLE 3248, $8^{h}\ 12^{m}\ 18^{s}$.
March 18 . . −32 28 9.1

O. ARG. S. 8345, $8^{h}\ 12^{m}\ 19^{s}$.
March 1 . . −24 57 31.6

O. ARG. S. 8338, $8^{h}\ 12^{m}\ 55^{s}$.
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March 5 . . −24 58 13.2

31 LYNCIS, $8^{h}\ 13^{m}\ 52^{s}$.
March 15 . . +43 36 8.8

(*) $8^{h}\ 14^{m}\ 13^{s}$.
February 24 . . −26 40 26.5

LALANDE 16367, $8^{h}\ 15^{m}\ 7^{s}$.
March 27 . . +27 30 25.6

B. A. C. 2787, $8^{h}\ 16^{m}\ 57^{s}$.
April 3 . . +85 30 18.7

WEISSE VIII, 415, $8^{h}\ 17^{m}\ 1^{s}$.
February 26 . . +13 55 25.7

(*) $8^{h}\ 17^{m}\ 11^{s}$.
March 31 . . −29 16 37.6

RUMKER 2505, $8^{h}\ 17^{m}\ 57^{s}$.
March 12 . . +57 1 39.9

RUMKER, 2508, $8^{h}\ 18^{m}\ 38^{s}$.
March 12 . . +57 5 30.2

LACAILLE 3202, $8^{h}\ 18^{m}\ 47^{s}$.
March 18 . . −32 28 41.9

υ^1 CANCRI, (2d *,) $8^{h}\ 18^{m}\ 51^{s}$.
March 1 . . +24 57 39.2

B. A. C. 2827, $8^{h}\ 19^{m}\ 24^{s}$.
April 3 . . −23 37 32.6

LACAILLE 3312, $8^{h}\ 19^{m}\ 54^{s}$.
April 8 . . −31 31 6.0

WEISSE (2) VIII, 458, $8^{h}\ 20^{m}\ 41^{s}$.
March 1 . . +24 58 11.2

(*) $8^{h}\ 20^{m}\ 46^{s}$.
February 24 . . −26 43 3.8

(*) $8^{h}\ 21^{m}\ 33^{s}$.
March 18 . . −31 36 5.8

WEISSE (2) VIII, 490, $8^{h}\ 22^{m}\ 6^{s}$.
March 27 . . +16 38 23.5

LACAILLE 3331, $8^{h}\ 22^{m}\ 21^{s}$.
March 18 . . −31 33 56.7

WEISSE VIII, 569, $8^{h}\ 22^{m}\ 38^{s}$.
February 26 . . +12 1 51.7

(*) $8^{h}\ 23^{m}\ 7^{s}$.
March 5 . . −28 16 35.2

υ CANCRI, (3d *,) $8^{h}\ 23^{m}\ 45^{s}$.
March 15 . . +24 31 2.6

LACAILLE 3341, $8^h\ 23^m\ 46^s$.

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March 5 . . −28 14 4.0

(*) $8^h\ 23^m\ 56^s$.

March 31 . . −26 53 57.2

O. ARG. S. 8620, $8^h\ 24^m\ 30^s$.

April 3 . . −29 53 30.1

(*) $8^h\ 24^m\ 40^s$.

March 5 . . −28 15 29.1

(*) $8^h\ 25^m\ 59^s$.

April 8 . . −19 47 53.3

(*) $8^h\ 26^m\ 50^s$.

April 8 . . −19 50 31.3

(*) $8^h\ 28^m\ 21^s$.

March 1 . . +10 8 4.8

WEISSE VIII, 721, $8^h\ 28^m\ 48^s$.

February 24 . . +10 21 22.4

(*) $8^h\ 29^m\ 15^s$.

March 31 . . +23 41 57.8

LACAILLE 3399, $8^h\ 29^m\ 16^s$.

March 18 . . −32 8 53.0

WEISSE VIII, 738, $8^h\ 29^m\ 19^s$.

February 26 . . +12 9 6.9
March 12 . . 4.0

B. A. C. 2898, $8^h\ 29^m\ 55^s$.

April 3 . . −26 23 46.8

(*) $8^h\ 29^m\ 56^s$.

March 27 . . −30 50 18.7

c CANCRI, (1st *,) $8^h\ 29^m\ 58^s$.

March 1 . . +10 6 20.4

LACAILLE 3419, $8^h\ 30^m\ 57^s$.

March 27 . . −30 53 19.3

LACAILLE 3434, $8^h\ 32^m\ 17^s$.

April 8 . . −33 17 30.6

WEISSE (2) VIII, 810, $8^h\ 33^m\ 10^s$.

February 24 . . +27 33 47.3

f MALI, $8^h\ 34^m\ 14^s$.

February 26 . . −29 5 57.8
March 31 . . 57.9

(*) $8^h\ 34^m\ 55^s$.

April 3 . . −14 23 46.5

b MALI, $8^h\ 34^m\ 57^s$.

April 16 . . −34 50 55.1

O. ARG. S. 8856, $8^h\ 35^m\ 2^s$.

March 12 . . −26 55 3.6

γ CANCRI, $8^h\ 35^m\ 42^s$.

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March 15 . . +21 56 2.8

WEISSE (2) VIII, 894, $8^h\ 36^m\ 3^s$.

February 24 . . +27 41 26.0

WEISSE VIII, 936, $8^h\ 36^m\ 37^s$.

March 18 . . +14 5 24.6

(*) $8^h\ 37^m\ 3^s$.

March 1 . . +14 7 52.2
5 . . 51.7
18 . . 53.6

LACAILLE 3474, $8^h\ 37^m\ 35^s$.

February 26 . . −29 3 29.0
April 8 . . 31.8

LACAILLE 3485, $8^h\ 37^m\ 51^s$.

March 27 . . −35 28 40.4

LACAILLE 3500, $8^h\ 39^m\ 37^s$.

April 3 . . −30 30 21.2

WEISSE VIII, 1050, $8^h\ 41^m\ 17^s$.

March 12 . . + 5 55 8.9

O. ARG. S. 8978, $8^h\ 42^m\ 5^s$.

February 26 . . −29 17 1.3

O. ARG. S. 8979, $8^h\ 42^m\ 7^s$.

February 26 . . −29 15 11.6

WEISSE VIII, 1077, $8^h\ 42^m\ 39^s$.

March 12 . . + 5 55 54.6

(*) $8^h\ 43^m\ 42^s$.

April 3 . . −37 31 23.6

O. ARG. S. 9040, $8^h\ 44^m\ 14^s$.

April 8 . . −24 5 52.3
14 . . 50.9
March 18 . . 51.1

(*) $8^h\ 44^m\ 25^s$.

February 24 . . −32 23 11.6

B. A. C. 3006, $8^h\ 44^m\ 30^s$.

February 24 . . −32 17 44.5

c MALI, $8^h\ 44^m\ 58^s$.

March 15 . . −27 13 44.3
31 . . 44.6

(*) $8^h\ 45^m\ 8^s$.

March 1 . . +13 45 16.5

(*) $8^h\ 45^m\ 9^s$.

March 1 . . +13 43 13.0

B. A. C. 3015, $8^h\ 45^m\ 48^s$.

April 16 . . +17 51 30.1

LACAILLE 3574, $8^h\ 47^m\ 4^s$.

February 26 . . −32 0 41.7

(*) $8^h\ 47^m\ 27^s$.

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February 26 . . −32 4 39.6

B. A. C. 3031, $8^h\ 48^m\ 24^s$.

March 5 . . +14 40 34.8

60 CANCRI, $8^h\ 48^m\ 45^s$.

April 16 . . +12 7 15.3

(*) $8^h\ 48^m\ 55^s$.

April 8 . . −13 33 58.5

LALANDE 17605, $8^h\ 49^m\ 24^s$.

April 14 . . +38 45 35.2

LALANDE 17662, $8^h\ 50^m\ 0^s$.

April 3 . . −13 24 28.9

(*) $8^h\ 50^m\ 40^s$.

March 12 . . −13 12 1.4

WEISSE (2) VIII, 1291, $8^h\ 53^m\ 12^s$.

March 18 . . +21 58 17.2

(*) $8^h\ 54^m\ 1^s$.

March 27 . . −34 48 18.8

68 CANCRI, $8^h\ 54^m\ 22^s$.

March 15 . . +17 35 22.2
31 . . 22.2

O. ARG. S. 9243, $8^h\ 55^m\ 5^s$.

April 14 . . −23 38 47.1

B. A. C. 3082, $8^h\ 55^m\ 29^s$.

April 16 . . −26 9 14.4

O. ARG. S. 9258, $8^h\ 55^m\ 58^s$.

February 26 . . −24 55 25.5

LACAILLE 3643, $8^h\ 56^m\ 8^s$.

April 16 . . −26 3 52.0

(*) $8^h\ 56^m\ 48^s$.

April 3 . . −35 10 40.2
8 . . 44.0

WEISSE VIII, 1476, $8^h\ 58^m\ 25^s$.

March 12 . . −12 44 27.0
18 . . 22.9

B. A. C. 3104, $8^h\ 59^m\ 6^s$.

March 31 . . +15 47 35.1

(*) $9^h\ 1^m\ 28^s$.

February 26 . . +81 55 19.0

(*) $9^h\ 1^m\ 47^s$.

March 27 . . −23 30 18.6

(*) $9^h\ 2^m\ 10^s$.

April 3 . . −27 40 29.4

20 HYDRÆ, $9^h\ 3^m\ 11^s$.

March 15 . . − 8 15 39.7

(*) $9^h\ 3^m\ 25^s$.

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April 16 . . −28 26 1.7

LACAILLE 3700, $9^h\ 3^m\ 58^s$.

March 18 . . −29 17 27.3

36 LYNCIS, $9^h\ 5^m\ 14^s$.

March 31 . . +43 45 7.5

CARRINGTON 1338, $9^h\ 5^m\ 46^s$.

February 26 . . +81 49 21.3

(*) $9^h\ 6^m\ 10^s$.

March 27 . . −23 34 5.8
April 8 . . 6.5

B. A. C. 3143, $9^h\ 6^m\ 34^s$.

March 12 . . −38 43 41.9

π CANCRI, (2d *,) $9^h\ 8^m\ 0^s$.

April 3 . . +15 28 44.8

LACAILLE 3733, $9^h\ 8^m\ 52^s$.

April 16 . . −32 1 6.7

(*) $9^h\ 9^m\ 13^s$.

April 14 . . +20 11 10.2

LACAILLE 3741, $9^h\ 9^m\ 28^s$.

March 27 . . −35 25 27.6

B. A. C. 3174, $9^h\ 11^m\ 48^s$.

February 26 . . −38 51 26.4

(*) $9^h\ 12^m\ 5^s$.

March 18 . . −28 35 29.7
April 8 . . 31.4

(*) $9^h\ 12^m\ 26^s$.

April 3 . . −35 8 44.0

(*) $9^h\ 13^m\ 42^s$.

February 26 . . −38 53 12.4

(*) $9^h\ 15^m\ 47^s$.

April 8 . . −34 48 23.4

(*) $9^h\ 16^m\ 43^s$.

April 16 . . −14 56 22.0

(*) $9^h\ 17^m\ 38^s$.

March 18 . . −28 38 11.2

(*) $9^h\ 17^m\ 48^s$.

March 18 . . −28 31 14.6

SCHJELLERUP 3476, $9^h\ 19^m\ 59^s$.

March 27 . . − 8 2 18.1

LALANDE 18604, $9^h\ 20^m\ 46^s$.

March 31 . . +14 18 50.0
April 14 . . 49.9

(*) $9^h 20^m 56^s$.

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April 3 . . −27 48 42.7

(*) $9^h 21^m 44^s$.

April 3 . . −27 49 53.2

B. A. C. 3235, $9^h 22^m 11^s$.

April 8 . . −34 26 34.0

(*) $9^h 24^m 10^s$.

April 16 . . −32 44 34.8

Lacaille 3874, $9^h 24^m 46^s$.

April 16 . . −32 50 3.4

(*) $9^h 25^m 19^s$.

March 27 . . −36 4 26.4

26 Ursæ Majoris, $9^h 25^m 51^s$.

March 31 . . +52 37 40.0

Lacaille 3905, $9^h 27^m 59^s$.

March 18 . . −38 3 51.0
April 14 . . 51.3

O. Arg. S. 9888, $9^h 29^m 37^s$.

April 8 . . −20 25 27.9

Lacaille 3923, $9^h 30^m 39^s$.

April 24 . . −24 7 25.4

O. Arg. S. 9914, $9^h 30^m 54^s$.

April 21 . . −23 55 7.5

O. Arg. S. 9956, $9^h 32^m 46^s$.

April 21 . . −23 49 55.1

B. A. C. 3306, $9^h 33^m 23^s$.

April 3 . . −39 1 31.8

(*) $9^h 33^m 47^s$.

April 16 . . −38 56 34.3

(*) $9^h 36^m 12^s$.

April 8 . . −37 54 33.3

(*) $9^h 36^m 16^s$.

March 27 . . −23 40 16.9
April 14 . . 17.9

Lacaille 4006, $9^h 40^m 28^s$.

April 3 . . −35 15 42.0
24 . . 42.5

Brisbane 2651, $9^h 40^m 52^s$.

April 16 . . −40 2 28.2

Brisbane 2657, $9^h 41^m 14^s$.

April 16 . . −40 4 50.2

(*) $9^h 41^m 24^s$.

April 14 . . −29 40 18.9

Weisse IX, 929, $9^h 43^m 44^s$.

April 21 . . +14 43 33.8

Lacaille 4036, $9^h 43^m 57^s$.

° ′ ″

April 8 . . −36 34 57.1

Lacaille 4045, $9^h 44^m 39^s$.

March 27 . . −39 33 49.2

(*) $9^h 45^m 11^s$.

April 24 . . +18 6 11.0

(*) $9^h 48^m 28^s$.

April 8 . . −27 53 9.0

Lacaille 4065, $9^h 48^m 52^s$.

April 14 . . −34 17 36.8

(*) $9^h 49^m 30^s$.

April 21 . . −32 44 54.3

O. Arg. S. 10227, $9^h 50^m 11^s$.

April 8 . . −27 53 11.0

O. Arg. S. 10236, $9^h 50^m 46^s$.

April 3 . . −29 30 21.5

O. Arg. S. 10241, $9^h 50^m 59^s$.

April 16 . . −27 55 24.8
24 . . 22.8

Lacaille 4082, $9^h 51^m 18^s$.

April 14 . . −34 12 30.4

(*) $9^h 56^m 16^s$.

April 24 . . +13 29 23.0

(*) $9^h 56^m 35^s$.

April 24 . . +13 30 24.5

(*) $9^h 58^m 46^s$.

April 16 . . +21 12 12.9

Lacaille 4132, $9^h 58^m 50^s$.

April 14 . . −27 33 32.3

Lacaille 4134, $9^h 59^m 13^s$.

April 14 . . −27 33 58.8

Lacaille 4142, $9^h 59^m 46^s$.

April 21 . . −32 45 38.1

O. Arg. S. 10387, $10^h 1^m 49^s$.

April 3 . . −23 25 20.0

(*) $10^h 2^m 22^s$.

April 8 . . +12 52 59.6

(*) $10^h 3^m 11^s$.

April 8 . . +12 54 52.1

(*) $10^h 3^m 37^s$.

April 21 . . +13 7 56.8

(*) $10^h 4^m 10^s$.

April 16 . . −36 8 19.6

Weisse X, 75, $10^h 6^m 24^s$.

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April 14 . . +12 47 19.0
24 . . 15.9

21 Sextantis, $10^h 7^m 56^s$.

May 5 . . − 7 20 56.2

O. Arg. S. 10488, $10^h 9^m 48^s$.

April 8 . . −30 33 19.3

(*) $10^h 9^m 59^s$.

April 21 . . −38 38 39.2

Weisse (2) X, 197, $10^h 10^m 39^s$.

April 16 . . +38 9 26.5

Weisse (2) X, 204, $10^h 11^m 6^s$.

April 14 . . +31 16 4.8

Lacaille 4242, $10^h 12^m 51^s$.

April 24 . . −36 9 16.9

Weisse X, 255, $10^h 16^m 1^s$.

April 14 . . − 3 5 8.7

(*) $10^h 16^m 12^s$.

May 5 . . −35 34 7.1

B. A. C. 3557, $10^h 17^m 43^s$.

April 16 . . −37 21 5.0

(*) $10^h 17^m 48^s$.

April 21 . . −29 37 33.4

Lacaille 4287, $10^h 19^m 10^s$.

April 24 . . −37 38 39.3

26 Sextantis, $10^h 19^m 56^s$.

May 10 . . − 0 19 39.2

(*) $10^h 21^m 53^s$.

April 8 . . −33 44 11.3
May 5 . . 8.7

(*) $10^h 22^m 6^s$.

April 14 . . +64 57 50.7

Lacaille 4307, $10^h 23^m 18^s$.

April 16 . . −37 23 43.2

O. Arg. S. 10684, $10^h 24^m 37^s$.

April 21 . . −24 33 25.4

Weisse X, 425, $10^h 25^m 15^s$.

April 24 . . +10 5 24.5

(*) $10^h 26^m 4^s$.

April 8 . . −33 43 38.8

(*) $10^h 27^m 18^s$.

April 16 . . − 4 12 18.3

Lacaille 4360, $10^h 29^m 53^s$.

May 10 . . −25 59 59.0

Lacaille 4364, $10^h 30^m 34^s$.

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May 5 . . −26 59 0.1

O. Arg. S. 10775, $10^h 31^m 38^s$.

April 24 . . −28 25 26.1

Lacaille 4384, $10^h 32^m 58^s$.

April 14 . . −39 59 43.8

Lacaille 4389, $10^h 33^m 50^s$.

April 16 . . −32 56 11.1

(*) $10^h 37^m 20^s$.

April 24 . . −28 22 54.0
May 5 . . 55.4

O. Arg. S. 10840, $10^h 37^m 30^s$.

April 21 . . −30 11 10.1

O. Arg. S. 10872, $10^h 40^m 14^s$.

April 16 . . −27 28 54.4

O. Arg. S. 10874, $10^h 40^m 15^s$.

April 16 . . −27 27 26.2

(*) $10^h 40^m 58^s$.

April 24 . . −35 24 44.4

(*) $10^h 42^m 53^s$.

May 5 . . −29 47 21.9

Lacaille 4480, $10^h 43^m 23^s$.

April 21 . . −38 29 3.6

Weisse X, 781, $10^h 44^m 15^s$.

April 14 . . +12 16 5.5
May 10 . . 6.2

Lacaille 4506, $10^h 47^m 38^s$.

April 24 . . −31 38 6.6

Lacaille 4505, $10^h 47^m 42^s$.

April 21 . . −26 3 18.5

Lacaille 4508, $10^h 47^m 53^s$.

April 16 . . −42 25 35.8

54 Leonis, (2d *,) $10^h 48^m 31^s$.

May 5 . . +25 26 32.4

Lalande 21014, $10^h 49^m 17^s$.

May 10 . . +23 56 42.7

O. Arg. S. 11015, $10^h 51^m 43^s$.

April 14 . . −27 37 14.4

(*) $10^h 53^m 2^s$.

April 21 . . −35 48 27.6

Lacaille 4567, $10^h 56^m 10^s$.

April 16 . . −40 24 48.7

Weisse (2) X, 1112, $10^h 56^m 11^s$.

May 10 . . +36 50 31.0

(*) $10^{h}\ 58^{m}\ 10^{s}$.

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May 5 . . +34 29 53.3

B. A. C. 3792, $10^{h}\ 58^{m}\ 44^{s}$.

April 24 . . −35 6 15.1

(*) $11^{h}\ 0^{m}\ 56^{s}$.

April 21 . . −28 59 11.4

LACAILLE, 4616, $11^{h}\ 2^{m}\ 29^{s}$.

April 14 . . −38 46 8.6

(*) $11^{h}\ 3^{m}\ 1^{s}$.

April 21 . . −28 53 46.0

B. A. C. 3823, $11^{h}\ 3^{m}\ 41^{s}$.

April 24 . . −29 5 20.5

LACAILLE 4633, $11^{h}\ 4^{m}\ 18^{s}$.

May 10 . . −31 51 31.7

WEISSE (2) XI, 53, $11^{h}\ 4^{m}\ 55^{s}$.

May 17 . . +35 42 46.3

O. ARG. S. 11226, $11^{h}\ 5^{m}\ 58^{s}$.

April 24 . . −29 4 35.0

O. ARG. N. 11584, $11^{h}\ 7^{m}\ 56^{s}$.

April 14 . . +58 55 24.2

LACAILLE 4693, $11^{h}\ 12^{m}\ 9^{s}$.

April 21 . . −23 37 57.3

LACAILLE 4703, $11^{h}\ 12^{m}\ 56^{s}$.

May 17 . . −39 47 21.4

O. ARG. N. 11674, $11^{h}\ 13^{m}\ 13^{s}$.

April 14 . . +72 26 13.8

WEISSE XI, 318, $11^{h}\ 19^{m}\ 18^{s}$.

April 14 . . −13 2 12.0
May 5 . . 13.5

O. ARG. S. 11394, $11^{h}\ 20^{m}\ 50^{s}$.

May 17 . . −23 6 4.9

O. ARG. S. 11410, $11^{h}\ 21^{m}\ 53^{s}$.

May 17 . . −23 6 36.5

B. A. C. 3911, $11^{h}\ 22^{m}\ 55^{s}$.

May 10 . . + 8 19 0.7

B. A. C. 3925, $11^{h}\ 26^{m}\ 8^{s}$.

May 5 . . − 7 6 34.8

LACAILLE 4805, $11^{h}\ 30^{m}\ 10^{s}$.

May 17 . . −33 55 54.1

WEISSE XI, 562, $11^{h}\ 33^{m}\ 3^{s}$.

May 10 . . − 0 43 8.5

O. ARG. S. 11610, $11^{h}\ 37^{m}\ 14^{s}$.

May 15 . . −28 57 24.2

LACAILLE 4867, $11^{h}\ 37^{m}\ 24^{s}$.

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May 15 . . −29 1 39.1

WEISSE XI, 646, $11^{h}\ 37^{m}\ 58^{s}$.

May 10 . . − 7 5 56.1

RUMKER 3727, $11^{h}\ 38^{m}\ 27^{s}$.

May 17 . . +14 59 7.3

LACAILLE 4909, $11^{h}\ 44^{m}\ 28^{s}$.

May 17 . . −26 21 25.8

B. A. C. 4024, $11^{h}\ 48^{m}\ 4^{s}$.

May 15 . . −24 59 34.2

LACAILLE 4979, $11^{h}\ 55^{m}\ 6^{s}$.

May 17 . . −33 55 37.5

O. ARG. S. 11848, $11^{h}\ 55^{m}\ 39^{s}$.

May 15 . . −25 42 51.4

LACAILLE 5042, $12^{h}\ 3^{m}\ 4^{s}$.

May 15 . . −32 45 50.2

B. A. C. 4095, $12^{h}\ 3^{m}\ 18^{s}$.

May 17 . . −33 58 52.8

WEISSE XII, 49, $12^{h}\ 4^{m}\ 51^{s}$.

May 17 . . + 8 5 36.7

(*) $12^{h}\ 11^{m}\ 47^{s}$.

May 15 . . −25 51 7.6

(*) $12^{h}\ 12^{m}\ 1^{s}$.

May 17 . . +23 50 35.1

12 COMÆ, $12^{h}\ 15^{m}\ 57^{s}$.

June 7 . . +26 34 6.5

O. ARG. S. 12124, $12^{h}\ 16^{m}\ 34^{s}$.

May 15 . . −25 44 59.3

LACAILLE 5131, $12^{h}\ 16^{m}\ 57^{s}$.

May 17 . . −29 36 49.9

O. ARG. S. 12161, $12^{h}\ 19^{m}\ 49^{s}$.

May 15 . . −26 27 42.6

LACAILLE 5189, $12^{h}\ 24^{m}\ 59^{s}$.

May 15 . . −40 20 10.9
17 . . 10.8

LACAILLE 5226, $12^{h}\ 31^{m}\ 23^{s}$.

May 17 . . −38 4 52.6

γ VIRGINIS, (1st *,) $12^{h}\ 35^{m}\ 3^{s}$.

June 7 . . − 0 44 5.2

γ VIRGINIS, (2d *,) $12^{h}\ 35^{m}\ 3^{s}$.

June 7 . . − 0 44 10.1

(*) $12^{h}\ 36^{m}\ 10^{s}$.

May 17 . . −35 17 49.0

WEISSE XII, 626, $12^{h}\ 38^{m}\ 1^{s}$.

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May 15 . . +14 3 43.4

LACAILLE 5281, $12^{h}\ 41^{m}\ 1^{s}$.

May 17 . . −44 0 25.7

(*) $12^{h}\ 43^{m}\ 27^{s}$.

May 15 . . −37 13 39.4

WEISSE XII, 820, $12^{h}\ 48^{m}\ 59^{s}$.

May 15 . . − 2 50 45.4

WEISSE XII, 835, $12^{h}\ 49^{m}\ 45^{s}$.

June 7 . . − 0 14 48.0

O. ARG. S. 12538, $12^{h}\ 50^{m}\ 12^{s}$.

May 17 . . −21 28 2.4

O. ARG. S. 12564, $12^{h}\ 52^{m}\ 28^{s}$.

May 17 . . −21 25 31.3

k VIRGINIS, $12^{h}\ 52^{m}\ 55^{s}$.

June 11 . . − 3 6 34.9

LACAILLE 5368, $12^{h}\ 55^{m}\ 20^{s}$.

May 15 . . −28 33 54.7

LACAILLE 5371, $12^{h}\ 55^{m}\ 51^{s}$.

June 7 . . −33 35 31.2

B. A. C. 4369, $12^{h}\ 56^{m}\ 32^{s}$.

June 7 . . −33 33 2.7

(*) $12^{h}\ 57^{m}\ 16^{s}$.

May 17 . . −37 5 38.4

B. A. C. 4405, $13^{h}\ 3^{m}\ 32^{s}$.

May 17 . . −41 32 23.4

(*) $13^{h}\ 4^{m}\ 27^{s}$.

May 15 . . −11 14 2.3

(*) $13^{h}\ 5^{m}\ 8^{s}$.

June 7 . . +13 2 0.3

B. A. C. 4431, $13^{h}\ 7^{m}\ 18^{s}$.

June 11 . . + 2 8 57.8

WEISSE XIII, 145, $13^{h}\ 10^{m}\ 16^{s}$.

May 15 . . + 2 52 26.3
17 . . 29.1

B. A. C. 4455, $13^{h}\ 12^{m}\ 54^{s}$.

June 11 . . −10 59 16.2

WEISSE XIII, 223, $13^{h}\ 14^{m}\ 43^{s}$.

May 15 . . −11 3 50.8

LACAILLE 5510, $13^{h}\ 15^{m}\ 19^{s}$.

May 17 . . −25 9 34.2

(*) $13^{h}\ 19^{m}\ 35^{s}$.

May 15 . . −34 56 30.8

WEISSE XIII, 304, $13^{h}\ 19^{m}\ 58^{s}$.

June 7 . . − 5 37 29.6

WEISSE XIII, 318, $12^{h}\ 20^{m}\ 47^{s}$.

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June 11 . . + 0 17 59.3

(*) $13^{h}\ 21^{m}\ 12^{s}$.

May 17 . . −32 45 45.4

(*) $13^{h}\ 27^{m}\ 32^{s}$.

May 15 . . −36 53 18.5

LACAILLE 5621, $13^{h}\ 31^{m}\ 23^{s}$.

June 7 . . −32 26 53.2

(*) $13^{h}\ 32^{m}\ 33^{s}$.

June 11 . . −26 29 23.0

LACAILLE 5636, $13^{h}\ 33^{m}\ 1^{s}$.

May 15 . . −33 41 51.3

LACAILLE 5639, $13^{h}\ 33^{m}\ 31^{s}$.

May 15 . . −33 47 53.6

B. A. C. 4581, $13^{h}\ 38^{m}\ 20^{s}$.

June 7 . . −25 27 42.2

O. ARG. S. 13149, $13^{h}\ 40^{m}\ 56^{s}$.

June 11 . . −30 5 55.4

LACAILLE 5724, $13^{h}\ 45^{m}\ 48^{s}$.

June 11 . . −37 37 19.0

B. A. C. 4631, $13^{h}\ 45^{m}\ 55^{s}$.

June 18 . . −35 1 16.6

LACAILLE 5729, $13^{h}\ 46^{m}\ 17^{s}$.

June 7 . . −34 40 10.3

LACAILLE 5779, $13^{h}\ 53^{m}\ 5^{s}$.

June 7 . . −43 33 48.3
11 . . 52.3

LACAILLE 5790, $13^{h}\ 55^{m}\ 14^{s}$.

June 18 . . −26 13 8.2

(*) $13^{h}\ 59^{m}\ 26^{s}$.

June 11 . . −14 53 13.8

B. A. C. 4691, $14^{h}\ 0^{m}\ 2^{s}$.

June 17 . . −15 34 12.8

O. ARG. S. 13394, $14^{h}\ 0^{m}\ 38^{s}$.

June 7 . . −26 43 28.0

O. ARG. S. 13438, $14^{h}\ 3^{m}\ 54^{s}$.

June 18 . . −25 43 35.3

LACAILLE 5877, $14^{h}\ 8^{m}\ 56^{s}$.

June 7 . . −34 24 7.8

LACAILLE 5878, $14^{h}\ 9^{m}\ 44^{s}$.

June 18 . . −41 59 14.4

Lacaille 5886, $14^{h}\ 11^{m}\ 30^{s}$.

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June 16 . . −36 24 1.8

Weisse XIV, 199, (2d *,) $14^{h}\ 12^{m}\ 27^{s}$.

June 11 . . −13 6 30.6

Weisse XIV, 236, $14^{h}\ 14^{m}\ 30^{s}$.

June 7 . . − 4 37 4.2

(*) $14^{h}\ 16^{m}\ 17^{s}$.

June 18 . . −27 33 28.4

(*) $14^{h}\ 18^{m}\ 13^{s}$.

June 11 . . −26 8 37.7

Lacaille 5959, $14^{h}\ 22^{m}\ 20^{s}$.

June 7 . . −24 57 33.6

Lacaille 5963, $14^{h}\ 23^{m}\ 6^{s}$.

June 18 . . −38 57 25.6

(*) $14^{h}\ 23^{m}\ 13^{s}$.

June 16 . . − 3 8 20.1

B. A. C. 4800, $14^{h}\ 23^{m}\ 30^{s}$.

June 17 . . −24 44 3.4

(*) $14^{h}\ 29^{m}\ 5^{s}$.

June 7 . . −36 57 47.6

Lacaille 6015, $14^{h}\ 30^{m}\ 9^{s}$.

June 11 . . −38 13 36.2

Lacaille 6020, $14^{h}\ 30^{m}\ 28^{s}$.

June 18 . . −34 42 33.4

B. A. C. 4858, $14^{h}\ 37^{m}\ 59^{s}$.

June 18 . . −34 38 20.5

Lacaille 6086, $14^{h}\ 38^{m}\ 53^{s}$.

June 11 . . −37 44 19.4

Lamont 4482, $14^{h}\ 38^{m}\ 57^{s}$.

June 7 . . + 0 11 9.6

Lacaille 6100, $14^{h}\ 40^{m}\ 29^{s}$.

June 18 . . −35 17 46.0

(*) $14^{h}\ 49^{m}\ 22^{s}$.

June 17 . . −26 16 27.8

Lacaille 6162, $14^{h}\ 49^{m}\ 25^{s}$.

June 16 . . −28 37 48.0

B. A. C. 4923, (1st *,) $14^{h}\ 49^{m}\ 50^{s}$.

June 7 . . −20 49 30.5

B. A. C. 4923, (2d *,) $14^{h}\ 49^{m}\ 51^{s}$.

June 7 . . −20 49 35.0

Lacaille 6178, $14^{h}\ 50^{m}\ 59^{s}$.

June 18 . . −37 21 26.4

Lacaille 6186, $14^{h}\ 52^{m}\ 56^{s}$.

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June 18 . . −37 32 18.0

δ Libræ, $14^{h}\ 54^{m}\ 0^{s}$.

July 9 . . − 8 0 2.2

Lacaille 6199, $14^{h}\ 55^{m}\ 25^{s}$.

June 18 . . −35 25 49.9

Lacaille 6204, (1st *,) $14^{h}\ 55^{m}\ 55^{s}$.

June 16 . . −27 19 27.6

Lacaille 6204, (2d *,) $14^{h}\ 55^{m}\ 55^{s}$.

June 16 . . −27 19 23.0

Groombridge 2210, $14^{h}\ 56^{m}\ 26^{s}$.

June 11 . . +86 29 12.7

Lacaille 6229, $14^{h}\ 59^{m}\ 10^{s}$.

June 17 . . −32 24 17.4

Weisse XIV, 1110, $14^{h}\ 59^{m}\ 46^{s}$.

June 11 . . − 1 49 48.3

B. A. C. 4984, $15^{h}\ 2^{m}\ 14^{s}$.

June 16 . . −23 29 12.0

O. Arg. S. 14349, $15^{h}\ 5^{m}\ 2^{s}$.

June 18 . . −25 11 34.6

B. A. C. 5001, $15^{h}\ 5^{m}\ 26^{s}$.

July 3 . . +29 43 26.7

23 Libræ, $15^{h}\ 5^{m}\ 50^{s}$.

July 9 . . −24 48 59.8

26 Libræ, $15^{h}\ 7^{m}\ 11^{s}$.

July 16 . . −17 16 51.8

Lacaille 6293, $15^{h}\ 8^{m}\ 34^{s}$.

June 17 . . −37 57 52.8

Lacaille 6318, $15^{h}\ 12^{m}\ 1^{s}$.

June 16 . . −34 26 59.3

Lalande 27907, $15^{h}\ 12^{m}\ 50^{s}$.

June 11 . . −21 47 7.8

Lacaille 6343, $15^{h}\ 14^{m}\ 13^{s}$.

June 18 . . −34 14 18.7

Lacaille 6351, $15^{h}\ 14^{m}\ 52^{s}$.

June 19 . . −28 52 19.8

Lacaille 6354, $15^{h}\ 15^{m}\ 19^{s}$.

June 18 . . −34 16 29.8

B. A. C. 5064, $15^{h}\ 15^{m}\ 25^{s}$.

July 9 . . +50 41 9.1

o Libræ, (2d *,) $15^{h}\ 15^{m}\ 45^{s}$.

July 16 . . −14 40 5.1

Lacaille 6372, $15^{h}\ 17^{m}\ 38^{s}$.

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July 3 . . −36 0 44.4

O. Arg. S. 14533, $15^{h}\ 17^{m}\ 47^{s}$.

June 11 . . −27 38 2.6

O. Arg. S. 14544, $15^{h}\ 18^{m}\ 32^{s}$.

June 16 . . −20 55 17.0

O. Arg. S. 14554, $15^{h}\ 19^{m}\ 8^{s}$.

July 16 . . −22 2 46.3

Lacaille 6388, $15^{h}\ 20^{m}\ 50^{s}$.

June 18 . . −38 10 47.0

(*) $15^{h}\ 23^{m}\ 26^{s}$.

June 19 . . −23 12 24.9

Lacaille 6409, $15^{h}\ 23^{m}\ 40^{s}$.

June 16 . . −32 26 1.9

Weisse (2) XV, 518, $15^{h}\ 23^{m}\ 41^{s}$.

July 16 . . +39 10 28.3

B. A. C. 5105, $15^{h}\ 24^{m}\ 32^{s}$.

July 9 . . −23 26 6.3

(*) $15^{h}\ 25^{m}\ 21^{s}$.

June 17 . . −32 44 52.9

O. Arg. S. 14648, $15^{h}\ 26^{m}\ 9^{s}$.

June 18 . . −24 40 9.4

Lacaille 6439, $15^{h}\ 27^{m}\ 58^{s}$.

July 10 . . −32 39 24.2

B. A. C. 5163, $15^{h}\ 31^{m}\ 41^{s}$.

June 16 . . −27 13 0.2

O. Arg. S. 14736, $15^{h}\ 31^{m}\ 52^{s}$.

July 9 . . −23 22 25.4

Lacaille 6473, $15^{h}\ 32^{m}\ 10^{s}$.

July 3 . . −30 47 13.3

(*) $15^{h}\ 34^{m}\ 9^{s}$.

June 19 . . −35 20 19.6

τ^{6} Serpentis, $15^{h}\ 34^{m}\ 59^{s}$.

July 16 . . +16 26 45.3

Lacaille 6495, $15^{h}\ 35^{m}\ 20^{s}$.

July 9 . . −30 7 2.7

Lacaille 6522, $15^{h}\ 39^{m}\ 28^{s}$.

June 16 . . −37 16 6.3

O. Arg. S. 14909, $15^{h}\ 41^{m}\ 32^{s}$.

June 19 . . −19 24 56.3

χ Lupi, $15^{h}\ 42^{m}\ 39^{s}$.

July 3 . . −33 13 42.4

δ Coronæ Borealis, $15^{h}\ 44^{m}\ 8^{s}$.

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July 16 . . +26 28 5.4

(*) $15^{h}\ 46^{m}\ 45^{s}$.

June 17 . . −18 33 44.5

18 Ursæ Minoris, $15^{h}\ 46^{m}\ 53^{s}$.

June 16 . . +80 23 18.9

B. A. C. 5266, $15^{h}\ 47^{m}\ 46^{s}$.

July 9 . . −26 21 33.7

ξ Lupi, (2d *,) $15^{h}\ 48^{m}\ 32^{s}$.

July 10 . . −34 34 54.4

48 Libræ, $15^{h}\ 50^{m}\ 53^{s}$.

June 19 . . −13 54 6.3

B. A. C. 5296, $15^{h}\ 51^{m}\ 32^{s}$.

July 16 . . −29 42 29.3

(*) $15^{h}\ 52^{m}\ 37^{s}$.

July 9 . . −26 16 47.8

O. Arg. S. 15147, $15^{h}\ 55^{m}\ 8^{s}$.

June 17 . . −23 48 30.8

July 3 . . 30.3

51 Libræ, (2d *,) $15^{h}\ 57^{m}\ 12^{s}$.

July 16 . . −11 0 41.3

Weisse XV, 1086, $15^{h}\ 57^{m}\ 54^{s}$.

July 9 . . + 6 22 18.1

O. Arg. S. 15199, $15^{h}\ 58^{m}\ 0^{s}$.

July 20 . . −21 28 50.8

Lacaille 6686, $15^{h}\ 58^{m}\ 41^{s}$.

July 10 . . −36 24 1.2

O. Arg. S. 15227, $15^{h}\ 59^{m}\ 5^{s}$.

July 20 . . −21 30 35.7

O. Arg. S. 15292, $16^{h}\ 1^{m}\ 49^{s}$.

June 19 . . −26 5 35.1

B. A. C. 5374, $16^{h}\ 2^{m}\ 55^{s}$.

July 16 . . −29 4 13.7

O. Arg. N. 15952, $16^{h}\ 5^{m}\ 2^{s}$.

June 17 . . +65 1 58.1

Lacaille 6796, $16^{h}\ 13^{m}\ 4^{s}$.

July 9 . . −32 59 12.5

Lacaille 6797, $16^{h}\ 13^{m}\ 12^{s}$.

July 9 . . −32 55 12.5

(*) $16^{h}\ 23^{m}\ 41^{s}$.

June 17 . . −33 11 21.8

Weisse (2) XVI, 703, $16^{h}\ 23^{m}\ 48^{s}$.

July 9 . . +41 44 51.9

Lacaille 6871, $16^{h}\ 24^{m}\ 33^{s}$.

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June 19 . . −33 15 1.3

O. Arg. S. 15713, $16^{h}\ 24^{m}\ 44^{s}$.

July 10 . . −20 28 15.8

(*) $16^{h}\ 26^{m}\ 29^{s}$.

July 16 . . −33 56 45.9

Weisse (2) XVI, 788, $16^{h}\ 27^{m}\ 37^{s}$.

July 20 . . +33 47 37.4

Weisse XVI, 544, $16^{h}\ 29^{m}\ 50^{s}$.

July 22 . . − 8 37 6.6

B. A. C. 5556, $16^{h}\ 30^{m}\ 1^{s}$.

July 9 . . −29 39 43.8

O. Arg. S. 15790, $16^{h}\ 30^{m}\ 57^{s}$.

June 17 . . −28 38 26.1

Lacaille 6924, $16^{h}\ 31^{m}\ 59^{s}$.

August 2 . . −35 25 42.0

B. A. C. 5564, $16^{h}\ 32^{m}\ 4^{s}$.

July 13 . . −25 48 3.0

O. Arg. S. 15834, $16^{h}\ 32^{m}\ 52^{s}$.

July 21 . . −24 8 46.4

B. A. C. 5567, $16^{h}\ 32^{m}\ 52^{s}$.

July 20 . . −20 9 10.0

Weisse XVI, 619, $16^{h}\ 33^{m}\ 4^{s}$.

June 18 . . − 5 49 11.6

Lacaille 6930, $16^{h}\ 33^{m}\ 18^{s}$.

June 19 . . −32 53 17.4

24 Scorpii, $16^{h}\ 34^{m}\ 1^{s}$.

August 9 . . −17 29 16.0

O. Arg. S. 15850, $16^{h}\ 34^{m}\ 20^{s}$.

July 16 . . −16 6 36.2

Lacaille 6976, $16^{h}\ 38^{m}\ 14^{s}$.

June 17 . . −32 42 27.3

Weisse XVI, 758, $16^{h}\ 40^{m}\ 26^{s}$.

June 18 . . − 5 59 18.4

Weisse XVI, 780, $16^{h}\ 41^{m}\ 37^{s}$.

August 2 . . + 1 19 27.6

ε Scorpii, $16^{h}\ 41^{m}\ 42^{s}$.

August 6 . . −34 3 14.2

B. A. C. 5665, $16^{h}\ 45^{m}\ 51^{s}$.

June 17 . . −30 32 4.8

B. A. C. 5672, $16^{h}\ 46^{m}\ 25^{s}$.

July 16 . . −30 45 44.9

(*) $16^{h}\ 47^{m}\ 21^{s}$.

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August 9 . . −36 58 27.6

(*) $16^{h}\ 47^{m}\ 30^{s}$.

August 9 . . −37 2 43.7

Lacaille 7087, $16^{h}\ 53^{m}\ 11^{s}$.

July 16 . . −33 10 18.8

O. Arg. S. 16213, $16^{h}\ 53^{m}\ 31^{s}$.

July 22 . . −20 15 26.8

Weisse XVI, 1001, $16^{h}\ 54^{m}\ 16^{s}$.

August 6 . . − 4 1 26.4

(*) $16^{h}\ 54^{m}\ 18^{s}$.

July 21 . . −20 24 5.8

O. Arg. S. 16240, $16^{h}\ 54^{m}\ 58^{s}$.

July 29 . . −26 54 24.7

(*) $16^{h}\ 55^{m}\ 59^{s}$.

August 3 . . −24 6 19.2

31 Ophiuchi, $16^{h}\ 56^{m}\ 42^{s}$.

July 13 . . −25 27 22.5

Weisse XVI, 1048, $16^{h}\ 56^{m}\ 55^{s}$.

July 20 . . − 9 4 48.0

Weisse (2) XVI, 1735, $16^{h}\ 56^{m}\ 59^{s}$.

July 10 . . +25 41 28.1
August 14 . . 25.8

O. Arg. S. 16291, $16^{h}\ 57^{m}\ 0^{s}$.

July 22 . . −20 18 29.0

B. A. C. 5748, $16^{h}\ 57^{m}\ 19^{s}$.

July 6 . . −10 54 11.6

Lacaille 7133, $16^{h}\ 59^{m}\ 8^{s}$.

July 16 . . −40 50 53.3

60 Herculis, $16^{h}\ 59^{m}\ 21^{s}$.

August 13 . . +12 55 17.1

Lacaille 7160, $17^{h}\ 3^{m}\ 18^{s}$.

July 21 . . −38 39 24.5
August 6 . . 25.2

(*) $17^{h}\ 5^{m}\ 23^{s}$.

June 19 . . −39 36 36.2

Lacaille 7174, $17^{h}\ 6^{m}\ 27^{s}$.

June 17 . . −38 3 31.6
July 6 . . 32.6

O. Arg. N. 16908, $17^{h}\ 7^{m}\ 41^{s}$.

August 9 . . +59 20 1.0

(*) $17^{h}\ 8^{m}\ 9^{s}$.

July 21 . . −35 19 48.9

38 Ophiuchi, $17^{h}\ 9^{m}\ 32^{s}$.

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July 10 . . −26 28 59.4
22 . . 52.6

(*) $17^{h}\ 10^{m}\ 3^{s}$.

July 13 . . −34 50 23.9
August 6 . . 28.0

O. Arg. S. 16574, $17^{h}\ 10^{m}\ 8^{s}$.

July 16 . . −29 49 20.4

Lacaille 7241, $17^{h}\ 13^{m}\ 46^{s}$.

July 20 . . −37 40 22.6

(*) $17^{h}\ 13^{m}\ 52^{s}$.

August 14 . . −35 14 52.8

Lacaille 7244, $17^{h}\ 13^{m}\ 52^{s}$.

August 13 . . −35 46 58.6

Lacaille 7245, $17^{h}\ 14^{m}\ 3^{s}$.

August 2 . . −37 5 20.8
18 . . 19.7

O. Arg. S. 16710, $17^{h}\ 16^{m}\ 4^{s}$.

July 6 . . −30 24 11.6

O. Arg. S. 16749, $17^{h}\ 17^{m}\ 37^{s}$.

July 21 . . −28 31 50.6

Weisse (2) XVII, 486, $17^{h}\ 17^{m}\ 38^{s}$.

July 16 . . +17 0 3.9

Weisse (2) XVII, 487, $17^{h}\ 17^{m}\ 43^{s}$.

July 16 . . +17 1 37.7

Weisse (2) 523, $17^{h}\ 19^{m}\ 10^{s}$.

July 16 . . +17 3 17.8

B. A. C. 5888, $17^{h}\ 19^{m}\ 43^{s}$.

August 6 . . −12 23 40.8
13 . . 42.8

Weisse (2) XVII, 552, $17^{h}\ 20^{m}\ 6^{s}$.

August 9 . . +17 2 0.2

B. A. C. 5896, $17^{h}\ 20^{m}\ 36^{s}$.

August 14 . . −25 23 54.4

O. Arg. N. 17136, $17^{h}\ 20^{m}\ 37^{s}$.

July 29 . . +77 29 6.1

B. A. C. 5897, $17^{h}\ 20^{m}\ 46^{s}$.

June 17 . . −31 25 26.6
July 22 . . 23.5

Weisse (2) XVII, 596, $17^{h}\ 21^{m}\ 10^{s}$.

August 9 . . +17 5 0.0

O. Arg. S. 16816, $17^{h}\ 21^{m}\ 29^{s}$.

July 13 . . −20 51 5.7

Weisse XVII, 387, $17^{h}\ 22^{m}\ 50^{s}$.

August 2 . . − 5 48 39.8
18 . . 39.5

O. Arg. S. 16897, $17^{h}\ 24^{m}\ 1^{s}$.

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July 20 . . −22 53 51.5

B. A. C. 5914, $17^{h}\ 24^{m}\ 31^{s}$.

July 10 . . −32 57 32.7

B. A. C. 5916, $17^{h}\ 24^{m}\ 44^{s}$.

August 6 . . −29 33 8.4

O. Arg. S. 16908, $17^{h}\ 24^{m}\ 49^{s}$.

July 6 . . −15 59 40.2

B. A. C. 5919, $17^{h}\ 24^{m}\ 49^{s}$.

August 3 . . + 2 49 30.4

(*) $17^{h}\ 25^{m}\ 5^{s}$.

August 9 . . −32 30 50.3

λ Herculis, $17^{h}\ 25^{m}\ 28^{s}$.

August 10 . . +26 12 39.6

(*) $17^{h}\ 25^{m}\ 51^{s}$.

August 9 . . −32 27 59.3

(*) $17^{h}\ 25^{m}\ 58^{s}$.

August 9 . . −32 24 35.8

52 Ophiuchi, $17^{h}\ 27^{m}\ 28^{s}$.

August 13 . . −21 57 12.2
14 . . 10.7

O. Arg. S. 16966, $17^{h}\ 27^{m}\ 42^{s}$.

July 21 . . −18 9 15.9

(*) $17^{h}\ 27^{m}\ 56^{s}$.

July 13 . . −37 21 7.5

B. A. C. 5960, $17^{h}\ 31^{m}\ 32^{s}$.

July 29 . . −32 7 25.1

Weisse XVII, 620, $17^{h}\ 32^{m}\ 5^{s}$.

August 18 . . +12 48 52.3

B. A. C. 5961, $17^{h}\ 32^{m}\ 27^{s}$.

August 2 . . −28 50 53.7

B. A. C. 5968, $17^{h}\ 32^{m}\ 57^{s}$.

July 27 . . −32 2 22.1

Lacaille 7395, $17^{h}\ 33^{m}\ 22^{s}$.

June 17 . . −33 26 0.6
July 22 . . 2.4

κ Scorpii, $17^{h}\ 33^{m}\ 28^{s}$.

August 16 . . −38 57 34.2

(*) $17^{h}\ 35^{m}\ 0^{s}$.

July 20 . . −28 0 38.7
21 . . 36.1

Lacaille 7406, $17^{h}\ 35^{m}\ 4^{s}$.

August 6 . . −38 44 22.0

(*) 17^h 35^m 7^s.

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July 10 . . −34 23 8.1

O. Arg. S. 17114, 17^h 35^m 23^s.

August 9 . . −19 26 31.8

O. Arg. S. 17132, 17^h 36^m 23^s.

August 13 . . −28 6 59.2

Lacaille 7420, 17^h 37^m 27^s.

August 10 . . −39 12 27.1
26 . . 27.7

Dorpat 2204, (1st *,) 17^h 38^m 57^s.

August 27 . . −13 15 9.8
September 1 . . 10.7

Dorpat 2204, (2d *,) 17^h 38^m 57^s.

August 27 . . −13 14 55.6
September 1 . . 56.8

(*) 17^h 39^m 6^s.

June 17 . . −34 20 42.0

Lacaille 7430, 17^h 39^m 7^s.

July 29 . . −34 15 27.1
August 2 . . 29.6

Lacaille 7443, 17^h 40^m 22^s.

August 6 . . −38 56 9.4

ι^2 Scorpii, 17^h 41^m 4^s.

August 18 . . −40 2 43.0

Lacaille 7459, 17^h 42^m 16^s.

September 3 . . −33 39 49.4

B. A. C. 6026, 17^h 42^m 49^s.

August 13 . . −30 30 56.1

(*) 17^h 42^m 49^s.

July 13 . . −28 36 56.3
27 . . 58.0

(*) 17^h 43^m 38^s.

July 27 . . −28 34 59.9

O. Arg. S. 17281, 17^h 43^m 49^s.

July 20 . . −25 44 0.8

(*) 17^h 44^m 12^s.

July 10 . . −34 58 56.1

B. A. C. 6038, 17^h 44^m 40^s.

September 7 . . −34 51 38.0
9 . . 38.5

B. A. C. 6045, 17^h 45^m 41^s.

September 4 . . −34 50 47.9

Weisse XVII, 905, 17^h 45^m 55^s.

August 2 . . − 7 52 37.5

63 Ophiuchi, 17^h 46^m 51^s.

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September 1 . . −24 51 27.2
10 . . 27.7

O. Arg. S. 17354, 17^h 47^m 41^s.

August 6 . . −27 0 27.2

Lacaille 7490, 17^h 47^m 46^s.

September 2 . . −40 16 51.9

O. Arg. S. 17361, 17^h 47^m 56^s.

August 6 . . −26 59 54.5

O. Arg. S. 17376, 17^h 48^m 20^s.

August 13 . . −23 21 58.1
21 . . 57.4

O. Arg. S. 17379, 17^h 48^m 46^s.

June 17 . . −27 6 45.8
August 26 . . 45.7

Lacaille 7499, 17^h 48^m 49^s.

September 3 . . −39 4 47.2

Lacaille 7504, 17^h 48^m 55^s.

September 3 . . −39 6 54.7

B. A. C. 6066, 17^h 49^m 10^s.

August 18 . . −23 55 3.2

O. Arg. S. 17412, 17^h 50^m 17^s.

July 21 . . −25 7 25.4

(*) 17^h 50^m 46^s.

July 20 . . −31 25 35.0

O. Arg. S. 17426, 17^h 51^m 2^s.

August 30 . . −25 10 24.0

Dorpat 2245, 17^h 51^m 40^s.

August 10 . . +18 20 55.0

O. Arg. S. 17466, 17^h 52^m 54^s.

July 6 . . −24 11 55.6
September 7 . . 57.7

(*) 17^h 52^m 59^s.

August 16 . . −36 22 9.4

O. Arg. S. 17469, 17^h 53^m 6^s.

August 2 . . −29 34 44.3

(*) 17^h 53^m 14^s.

August 13 . . −23 32 42.9

O. Arg. S. 17503, 17^h 54^m 22^s.

August 6 . . −15 38 30.8

O. Arg. S. 17512, 17^h 54^m 41^s.

September 4 . . −24 14 34.1

(*) 17^h 54^m 49^s.

July 10 . . −21 30 15.1
29 . . 13.4

Lacaille 7534, 17^h 55^m 24^s.

° ′ ″

September 1 . . −40 38 10.3

(*) 17^h 55^m 27^s.

August 18 . . −22 52 55.3

O. Arg. S. 17509, 17^h 55^m 38^s.

August 18 . . −22 54 3.2

95 Herculis, (2d *,) 17^h 56^m 1^s.

September 11 . . +21 35 53.6

(*) 17^h 56^m 4^s.

August 18 . . −22 50 13.4

(*) 17^h 56^m 16^s.

August 26 . . −24 11 3.8

O. Arg. S. 17555, 17^h 56^m 26^s.

August 27 . . −24 23 10.4

O. Arg. S. 17558, 17^h 56^m 29^s.

September 3 . . −27 51 58.6

(*) 17^h 56^m 39^s.

August 9 . . −23 35 58.0

B. A. C. 6108, 17^h 56^m 47^s.

August 30 . . −25 36 28.5

O. Arg. S. 17597, 17^h 58^m 3^s.

August 10 . . −24 12 4.7

O. Arg. S. 17610, 17^h 58^m 30^s.

August 16 . . −25 28 58.6

B. A. C. 6120, 17^h 58^m 32^s.

August 13 . . −28 22 17.4

70 Ophiuchi, 17^h 58^m 51^s.

July 27 . . + 2 30 54.7

Rumker 6208, 17^h 58^m 59^s.

August 3 . . +45 7 39.5

Lalande 33147, 17^h 59^m 4^s.

July 10 . . −21 30 49.6

O. Arg. S. 17648, 17^h 59^m 32^s.

August 6 . . −21 12 43.1

Lacaille 7588, 18^h 1^m 26^s.

August 2 . . −32 43 57.3

Lamont 5993, 18^h 1^m 38^s.

September 3 . . + 2 35 17.6

B. A. C. 6145, 18^h 1^m 40^s.

July 6 . . −30 44 45.4
September 10 . . 45.4

(*) 18^h 1^m 54^s.

September 1 . . −31 7 36.4

Lacaille 7595, 18^h 2^m 57^s.

° ′ ″

August 13 . . −35 2 54.4

B. A. C. 6153, 18^h 3^m 1^s.

August 26 . . −25 47 5.1
September 4 . . 6.9

(*) 18^h 3^m 4^s.

July 13 . . −39 22 1.6
August 27 . . 3.4

73 Ophiuchi, 18^h 3^m 7^s.

July 22 . . + 3 58 30.4

(*) (1st *,) 18^h 3^m 11^s.

August 7 . . −17 9 43.2
September 7 . . 43.0

(*) (2d *,) 18^h 3^m 11^s.

August 9 . . −17 9 51.8
September 7 . . 50.9

Lacaille 7598, 18^h 3^m 19^s.

July 13 . . −39 21 58.6
21 . . 59.0

Lacaille 7605, 18^h 3^m 54^s.

August 10 . . −39 10 57.9

O. Arg. S. 17796, 18^h 4^m 12^s.

August 6 . . −20 26 54.1
16 . . 56.4

O. Arg. S. 17809, 18^h 4^m 33^s.

August 18 . . −19 27 32.6

(*) 18^h 5^m 12^s.

September 9 . . −21 3 32.7

(*) 18^h 5^m 25^s.

July 29 . . −34 37 36.2

(*) 18^h 5^m 55^s.

September 1 . . −21 4 46.7

(*) 18^h 6^m 1^s.

September 1 . . −21 5 42.7

O. Arg. S. 17861, 18^h 6^m 27^s.

September 11 . . −28 52 18.5

O. Arg. S. 17861, 18^h 6^m 27^s.

September 10 . . −21 44 40.3

(*) 18^h 6^m 47^s.

August 30 . . −18 57 46.1

O. Arg. S. 17905, 18^h 7^m 38^s.

August 30 . . −19 1 42.7

O. Arg. S. 17916, 18^h 7^m 49^s.

August 30 . . −18 57 39.6

O. Arg. S. 17927, 18^h 8^m 3^s.

September 3 . . −28 58 13.0

Star	Date	° ′ ″
(*) $18^h\ 8^m\ 9^s$.		
	August 30	−18 56 55.7
B. A. C. 6187, $18^h\ 8^m\ 46^s$.		
	August 13	−27 45 7.8
17 Sagittarii, $18^h\ 8^m\ 49^s$.		
	August 2	−20 35 2.5
Lacaille 7646, $18^h\ 8^m\ 56^s$.		
	July 6	−34 8 55.6
B. A. C. 6199, $18^h\ 10^m\ 37^s$.		
	July 20	−25 38 59.0
(*) $18^h\ 12^m\ 44^s$.		
	July 13	−28 24 0.0
18 Sagittarii, $18^h\ 12^m\ 51^s$.		
	August 10	−30 59 40.2
(*) $18^h\ 13^m\ 2^s$.		
	July 21	−17 48 4.7
	August 6	4.1
Taylor 8458, $18^h\ 14^m\ 14^s$.		
	August 9	−26 28 27.9
	16	27.0
(*) $18^h\ 14^m\ 32^s$.		
	August 9	−26 30 15.7
	16	17.4
	26	16.9
	27	19.8
η Serpentis, $18^h\ 14^m\ 34^s$.		
	August 13	− 2 55 49.3
(*) $18^h\ 15^m\ 44^s$.		
	August 9	−26 25 56.5
	16	55.3
O. Arg. S. 18151, $18^h\ 16^m\ 3^s$.		
	August 27	−26 30 36.8
(*) $18^h\ 16^m\ 10^s$.		
	August 16	−29 30 57.3
O. Arg. S. 18160, $18^h\ 16^m\ 35^s$.		
	August 27	−26 33 25.6
(*) $18^h\ 20^m\ 11^s$.		
	July 29	−28 51 16.1
	August 6	20.5
(*) $18^h\ 22^m\ 38^s$.		
	July 20	−32 22 19.1
(*) $18^h\ 23^m\ 50^s$.		
	June 17	−33 6 50.0
(*) $18^h\ 24^m\ 37^s$.		
	July 10	−33 4 16.8
B. A. C. 6309, $18^h\ 25^m\ 33^s$.		
	August 10	−18 27 34.0

Star	Date	° ′ ″
(*) $18^h\ 25^m\ 56^s$.		
	August 9	−30 57 45.2
B. A. C. 6319, $18^h\ 27^m\ 23^s$.		
	July 27	−30 2 10.1
B. A. C. 6321, $18^h\ 27^m\ 38^s$.		
	July 20	−29 47 54.8
O. Arg. S. 18489, $18^h\ 30^m\ 42^s$.		
	July 29	−18 29 26.3
O. Arg. S. 18525, $18^h\ 32^m\ 45^s$.		
	August 9	−25 7 39.5
	26	39.2
Weisse XVIII, 793, $18^h\ 33^m\ 14^s$.		
	August 18	− 9 15 21.1
(*) $18^h\ 34^m\ 27^s$.		
	September 10	−38 0 12.2
(*) $18^h\ 34^m\ 46^s$.		
	September 20	−31 45 34.8
(*) $18^h\ 35^m\ 14^s$.		
	August 10	−11 13 55.2
O. Arg. S. 18584, $18^h\ 35^m\ 38^s$.		
	July 10	−19 20 59.1
O. Arg. S. 18587, $18^h\ 35^m\ 49^s$.		
	August 30	−21 2 35.6
B. A. C. 6363, $18^h\ 35^m\ 53^s$.		
	August 27	−39 48 44.8
Lacaille 7831, $18^h\ 35^m\ 56^s$.		
	August 27	−39 52 14.1
O. Arg. N. 18555, $18^h\ 37^m\ 39^s$.		
	August 6	+72 9 37.6
(*) $18^h\ 39^m\ 29^s$.		
	September 7	−37 9 6.3
Weisse XVIII, 971, $18^h\ 39^m\ 37^s$.		
	August 10	−12 24 53.3
	16	54.8
	26	56.2
Weisse XVIII, 972, $18^h\ 39^m\ 41^s$.		
	August 26	−12 31 13.2
	September 3	11.0
6 Aquilæ, $18^h\ 40^m\ 14^s$.		
	July 10	− 4 53 4.2
Lacaille 7865, $18^h\ 40^m\ 33^s$.		
	August 9	−34 53 10.6
Dorpat 2391, (1st *,) $18^h\ 41^m\ 43^s$.		
	August 27	− 6 8 12.9
	30	14.0

Star	Date	° ′ ″
Dorpat 2391, (2d *,) $18^h\ 41^m\ 42^s$.		
	August 27	− 6 8 48.7
(*) $18^h\ 42^m\ 13^s$.		
	July 20	−37 23 37.9
B. A. C. 6400, $18^h\ 42^m\ 21^s$.		
	July 27	−22 59 31.4
Lalande 34984, $18^h\ 42^m\ 40^s$.		
	September 29	− 6 3 25.4
Weisse XVIII, 1058, $18^h\ 42^m\ 42^s$.		
	September 29	− 6 5 19.5
Lacaille 7896, $18^h\ 44^m\ 32^s$.		
	September 1	−37 25 36.1
B. A. C. 6422, $18^h\ 44^m\ 54^s$.		
	August 9	−27 54 37.9
Lacaille 7901, $18^h\ 44^m\ 56^s$.		
	July 29	−36 26 26.0
β Lyræ, (2d *,) $18^h\ 45^m\ 16^s$.		
	July 27	+33 12 5.1
O. Arg. S. 18831, $18^h\ 47^m\ 46^s$.		
	July 20	−28 17 31.7
Lacaille 7919, $18^h\ 48^m\ 4^s$.		
	July 10	−39 4 42.7
Lacaille 7922, $18^h\ 48^m\ 31^s$.		
	August 10	−39 59 24.6
62 Serpentis, $18^h\ 49^m\ 8^s$.		
	August 13	+ 6 27 17.3
(*) $18^h\ 49^m\ 23^s$.		
	September 1	−37 29 4.6
B. A. C. 6455, $18^h\ 49^m\ 40^s$.		
	August 9	−30 59 34.4
(*) $18^h\ 49^m\ 43^s$.		
	September 27	−19 19 16.3
O. Arg. S. 18883, $18^h\ 50^m\ 0^s$.		
	August 6	−28 55 16.9
Weisse XVIII, 1285, $18^h\ 51^m\ 44^s$.		
	August 16	−12 45 38.2
	18	38.1
(*) $18^h\ 51^m\ 51^s$.		
	August 27	− 8 21 22.4
	September 3	24.4
Weisse XVIII, 1294, $18^h\ 52^m\ 0^s$.		
	August 26	− 9 8 33.9
Weisse XVIII, 1301, $18^h\ 52^m\ 12^s$.		
	August 27	− 8 19 55.8

Star	Date	° ′ ″
B. A. C. 6479, $18^h\ 52^m\ 26^s$.		
	August 30	−25 7 10.8
O. Arg. S. 18953, $18^h\ 53^m\ 25^s$.		
	August 13	−19 31 36.4
ε Aquilæ, $18^h\ 53^m\ 42^s$.		
	September 16	−14 53 38.7
Lacaille 7960, $18^h\ 53^m\ 58^s$.		
	September 4	−36 16 45.4
	9	41.2
Weisse XVIII, 1344, $18^h\ 54^m\ 0^s$.		
	August 9	−14 41 54.0
	September 1	54.3
γ Lyræ, $18^h\ 54^m\ 4^s$.		
	September 20	+32 30 47.4
	21	47.7
B. A. C. 6488, $18^h\ 54^m\ 8^s$.		
	September 10	−15 27 47.0
12 Aquilæ, $18^h\ 54^m\ 42^s$.		
	September 4	− 5 55 10.5
	13	10.8
g Aquilæ, $18^h\ 55^m\ 3^s$.		
	August 18	− 3 53 5.2
Lalande 35499, $18^h\ 55^m\ 14^s$.		
	September 27	−19 17 16.7
(*) $18^h\ 55^m\ 39^s$.		
	August 6	− 7 37 33.6
(*) $18^h\ 55^m\ 49^s$.		
	August 30	− 7 29 0.5
	September 3	5.8
O. Arg. S. 19007, $18^h\ 56^m\ 26^s$.		
	August 16	−20 59 18.4
B. A. C. 6504, $18^h\ 56^m\ 39^s$.		
	July 29	−21 43 3.8
B. A. C. 6505, $18^h\ 56^m\ 46^s$.		
	July 27	−25 25 9.7
Weisse XVIII, 1443, $18^h\ 57^m\ 32^s$.		
	August 27	− 8 53 52.0
γ Coronæ Australis, $18^h\ 57^m\ 34^s$.		
	August 26	−37 14 47.4
Lacaille 7990, $18^h\ 58^m\ 4^s$.		
	September 10	−37 59 31.6
Weisse (2) XVIII, 816, $18^h\ 58^m\ 37^s$.		
	September 16	+21 2 7.2
τ Sagittarii, $18^h\ 58^m\ 46^s$.		
	September 7	−27 51 27.0

O. Arg. S. 19083, (1st *,) $18^h\ 59^m\ 20^s$.

		° ′ ″
July	20 . .	−16 25 29.5
August	10 . .	29.7

O. Arg. S. 19083, (2d *,) $18^h\ 59^m\ 20^s$.

August	10 . .	−16 25 20.9
September	1 . .	22.6

B. A. C. 6525, $18^h\ 59^m\ 20^s$.

August	13 . .	−28 50 2.3
	31 . .	1.0

(*) $18^h\ 59^m\ 30^s$.

September	13 . .	−18 56 6.1

Lamont 6587, $18^h\ 59^m\ 32^s$.

September	10 . .	− 1 18 47.3
	28 . .	46.8

Dorpat 2447, (1st *,) $18^h\ 59^m\ 50^s$.

September	29 . .	− 1 32 20.2
October	1 . .	19.5

Dorpat 2447, (2d *,) $18^h\ 59^m\ 50^s$.

September	29 . .	− 1 32 37.5
October	1 . .	33.7

Weisse XVIII, 1525, $18^h\ 59^m\ 53^s$.

September	3 . .	+13 39 45.4
	20 . .	45.9

B. A. C. 6531, $18^h\ 59^m\ 54^s$.

September	21 . .	−25 54 3.7

(*) $19^h\ 0^m\ 0^s$.

September	29 . .	− 1 32 39.2

Lacaille 7998, (1st *,) $19^h\ 0^m\ 11^s$.

September	30 . .	−33 59 30.6

Lacaille 7998, (2d *,) $19^h\ 0^m\ 11^s$.

September	30 . .	−33 59 28.6

Weisse XVIII, 1539, $19^h\ 0^m\ 21^s$.

September	3 . .	+13 38 40.1

(*) $19^h\ 0^m\ 27^s$.

August	9 . .	−18 56 5.0

α Coronæ Australis, $19^h\ 0^m\ 36^s$.

August	18 . .	−38 6 15.3

Weisse XVIII, 1542, $19^h\ 0^m\ 44^s$.

September	10 . .	− 1 19 26.0
	28 . .	21.6

Lacaille 8008, $19^h\ 0^m\ 53^s$.

September	9 . .	−36 22 2.1

(*) $19^h\ 0^m\ 58^s$.

August	9 . .	−18 55 30.5

Lacaille 8023, $19^h\ 3^m\ 16^s$.

August	27 . .	−33 34 14.5

(*) $19^h\ 3^m\ 58^s$.

		° ′ ″
September	27 . .	− 8 2 58.1

(*) $19^h\ 5^m\ 2^s$.

July	10 . .	− 8 10 39.4

Lacaille 8041, $19^h\ 6^m\ 52^s$.

August	6 . .	−37 10 10.7

(*) $19^h\ 6^m\ 53^s$.

August	26 . .	− 8 32 41.8
September	7 . .	39.8

(*) $19^h\ 7^m\ 20^s$.

August	30 . .	−33 48 7.5

(*) $19^h\ 7^m\ 58^s$.

September	1 . .	−22 15 29.8
	16 . .	33.7

Lalande 36229, (1st *,) $19^h\ 9^m\ 6^s$.

August	13 . .	−38 48 58.9
September	3 . .	59.6

Lalande 36229, (2d *,) $19^h\ 9^m\ 9^s$.

August	13 . .	−38 48 48.4
September	3 . .	50.5

η Lyræ (2d *,) $19^h\ 9^m\ 20^s$.

September	18 . .	+38 55 35.6

Lacaille 8061, $19^h\ 10^m\ 41^s$.

August	30 . .	−37 7 33.7

Lacaille 8064, $19^h\ 10^m\ 42^s$.

September	2 . .	−36 53 19.3
	4 . .	18.6

Lalande 36252, $19^h\ 11^m\ 7^s$.

August	27 . .	−22 20 8.2

23 Aquilæ, $19^h\ 11^m\ 54^s$.

July	20 . .	+ 0 51 6.1

23 Aquilæ, (2d *,) $19^h\ 11^m\ 54^s$.

September	28 . .	+ 0 51 8.9
	30 . .	6.1

B. A. C. 6604, $19^h\ 12^m\ 43^s$.

July	6 . .	−24 26 35.9

Dorpat 2497, (1st *,) $19^h\ 13^m\ 41^s$.

August	6 . .	+ 5 20 59.5

Dorpat 2497, (2d *,) $19^h\ 13^m\ 41^s$.

August	6 . .	+ 5 21 29.0

o Sagittarii, (2d *,) $19^h\ 14^m\ 15^s$.

July	27 . .	−18 32 45.8
September	13 . .	48.9

ν Sagittarii, $19^h\ 14^m\ 16^s$.

August	10 . .	−16 11 45.2

Dorpat 2501, (2d *,) $19^h\ 15^m\ 11^s$.

September	9 . .	− 4 58 27.3

O. Arg. S. 19451, $19^h\ 15^m\ 14^s$.

		° ′ ″
August	30 . .	−26 28 25.9
September	1 . .	26.5

Lacaille 8092, $19^h\ 15^m\ 28^s$.

August	13 . .	−33 47 14.8

(*) $19^h\ 15^m\ 46^s$.

September	18 . .	−28 57 3.9

(*) $19^h\ 16^m\ 47^s$.

July	29 . .	− 8 27 52.5

(*) $19^h\ 17^m\ 4^s$.

October	1 . .	−34 32 4.2

(*) $19^h\ 17^m\ 16^s$.

September	3 . .	−23 17 31.8

(*) $19^h\ 17^m\ 29^s$.

August	18 . .	−15 16 32.9

(*) $19^h\ 17^m\ 47^s$.

September	27 . .	− 8 9 15.5

(*) $19^h\ 21^m\ 53^s$.

August	31 . .	−26 1 0.0

α Vulpeculæ, $19^h\ 23^m\ 19^s$.

July	29 . .	+24 24 16.1

O. Arg. S. 19665, $19^h\ 24^m\ 6^s$.

July	27 . .	−19 39 23.0
August	10 . .	25.2

O. Arg. S. 19674, $19^h\ 24^m\ 37^s$.

August	27 . .	−23 0 46.1

O. Arg. S. 19689, $19^h\ 25^m\ 11^s$.

August	30 . .	−22 16 26.6

β Cygni, (1st * N.,) $19^h\ 25^m\ 27^s$.

July	20 . .	+27 41 20.5

B. A. C. 6700, $19^h\ 27^m\ 51^s$.

July	6 . .	−21 3 27.7

k Aquilæ, $19^h\ 27^m\ 56^s$.

September	13 . .	−10 50 31.0

O. Arg. S. 19748, $19^h\ 28^m\ 27^s$.

September	1 . .	−19 52 36.8

(*) $19^h\ 28^m\ 31^s$.

September	3 . .	−41 47 35.9

(*) $19^h\ 28^m\ 42^s$.

September	2 . .	−27 22 50.2

O. Arg. S. 19758, $19^h\ 28^m\ 53^s$.

September	4 . .	−27 47 5.6

(*) $19^h\ 28^m\ 56^s$.

September	27 . .	+19 30 45.6

(*) $19^h\ 29^m\ 13^s$.

		° ′ ″
September	14 . .	+19 30 48.0

(*) $19^h\ 29^m\ 15^s$.

September	20 . .	−39 2 42.2

(*) $19^h\ 29^m\ 15^s$.

September	9 . .	−40 1 58.2
October	1 . .	60.8

O. Arg. S. 19770, $19^h\ 29^m\ 15^s$.

September	30 . .	−19 4 10.4

(*) $19^h\ 29^m\ 16^s$.

September	16 . .	−19 31 0.5

Weisse XIX, 722, $19^h\ 29^m\ 43^s$.

August	30 . .	−10 26 34.0
September	28 . .	34.3

Lacaille 8170, $19^h\ 30^m\ 22^s$.

August	27 . .	−41 50 6.4

(*) $19^h\ 30^m\ 55^s$.

August	10 . .	−27 21 23.6

(*) $19^h\ 34^m\ 9^s$.

August	31 . .	−24 41 35.1
September	1 . .	31.0

(*) $19^h\ 34^m\ 14^s$.

September	2 . .	−32 32 24.0

(*) $19^h\ 34^m\ 52^s$.

September	14 . .	−33 56 59.6

(*) $19^h\ 34^m\ 56^s$.

September	4 . .	−33 56 60.5
	10 . .	56.4

Lacaille 8197, $19^h\ 35^m\ 24^s$.

July	29 . .	−41 54 45.8

(*) $19^h\ 36^m\ 23^s$.

July	20 . .	+ 8 3 20.1

O. Arg. S. 19924, $19^h\ 37^m\ 49^s$.

August	27 . .	−27 1 9.7
September	3 . .	10.6

(*) $19^h\ 39^m\ 8^s$.

August	10 . .	−28 40 48.6
September	7 . .	39.2

Faint.

(*) $19^h\ 39^m\ 45^s$.

September	9 . .	−28 41 54.6
	18 . .	50.8
	20 . .	55.7

O. Arg. S. 19960, $19^h\ 40^m\ 21^s$.

August	30 . .	−26 58 35.8

(* 119) Washington, $19^h\ 41^m\ 53^s$.

September	21 . .	+58 26 31.5

B. A. C. 6786, $19^{h}\ 42^{m}\ 22^{s}$.

	° ′ ″
September 2 . .	−27 2 23.8

Lacaille 8237, $19^{h}\ 42^{m}\ 28^{s}$.

September 1 . . −42 25 9.5

O. Arg. S. 19998, $19^{h}\ 42^{m}\ 42^{s}$.

July 20 . . −26 29 37.2

O. Arg. S. 20022, $19^{h}\ 44^{m}\ 43^{s}$.

September 30 . . −27 10 6.5

O. Arg. S. 20024, $19^{h}\ 44^{m}\ 48^{s}$.

September 30 . . −27 13 15.5
October 1 . . 10.1

(*) $19^{h}\ 46^{m}\ 39^{s}$.

September 3 . . −19 39 1.2

Lalande 37873, $19^{h}\ 47^{m}\ 48^{s}$.

July 29 . . −19 37 48.0

O. Arg. S. 20078, $19^{h}\ 48^{m}\ 35^{s}$.

September 9 . . −27 57 44.7

(*) $19^{h}\ 48^{m}\ 53^{s}$.

September 14 . . −22 42 46.4

(*) $19^{h}\ 48^{m}\ 55^{s}$.

September 18 . . −22 42 36.5

O. Arg. S. 20101, $19^{h}\ 49^{m}\ 35^{s}$.

August 10 . . −25 31 14.1

O. Arg. S. 20113, $19^{h}\ 50^{m}\ 41^{s}$.

August 26 . . −18 57 51.5

O. Arg. S. 20123, $19^{h}\ 51^{m}\ 9^{s}$.

September 1 . . −27 35 34.8

O. Arg. S. 20124, $19^{h}\ 51^{m}\ 11^{s}$.

September 10 . . −25 26 26.0

Lacaille 8293, $19^{h}\ 51^{m}\ 23^{s}$.

September 27 . . −38 3 8.1

B. A. C. 6844, $19^{h}\ 51^{m}\ 24^{s}$.

September 2 . . −43 23 37.4

B. A. C. 6855, $19^{h}\ 52^{m}\ 18^{s}$.

July 27 . . +16 8 45.6

Lacaille 8302, $19^{h}\ 52^{m}\ 21^{s}$.

September 4 . . −32 31 38.5

γ Sagittæ, $19^{h}\ 52^{m}\ 57^{s}$.

September 16 . . +19 8 26.0

O. Arg. S. 20145, $19^{h}\ 53^{m}\ 5^{s}$.

September 3 . . −22 59 23.1

Weisse XIX, 1320, $19^{h}\ 53^{m}\ 49^{s}$.

	° ′ ″
July 20 . .	−14 18 33.3

Lacaille 8307, $19^{h}\ 54^{m}\ 9^{s}$.

September 4 . . −43 16 52.8
28 . . 53.7

Lacaille 8313, $19^{h}\ 54^{m}\ 54^{s}$.

September 14 . . −36 57 20.7

Lacaille 8312, $19^{h}\ 54^{m}\ 55^{s}$.

September 20 . . −37 53 6.4

15 Vulpeculæ, $19^{h}\ 55^{m}\ 45^{s}$.

July 29 . . +27 23 48.5
September 13 . . 47.2

B. A. C. 6877, $19^{h}\ 56^{m}\ 4^{s}$.

September 9 . . −32 25 4.4

(*) $19^{h}\ 56^{m}\ 31^{s}$.

September 10 . . +36 44 19.3
October 5 . . 20.1

Lacaille 8326, $19^{h}\ 56^{m}\ 42^{s}$.

September 29 . . −36 44 35.1

Lacaille 8326, $19^{h}\ 56^{m}\ 45^{s}$.

August 30 . . −36 39 29.4

64 Sagittarii, $19^{h}\ 57^{m}\ 53^{s}$.

October 6 . . −11 57 51.8

(*) $19^{h}\ 58^{m}\ 31^{s}$.

October 1 . . −19 4 20.9

Lacaille 8340, $19^{h}\ 58^{m}\ 51^{s}$.

August 10 . . −35 54 1.5

(*) $19^{h}\ 59^{m}\ 35^{s}$.

October 5 . . −39 10 25.9

B. A. C. 6922, $20^{h}\ 2^{m}\ 36^{s}$.

August 26 . . −36 25 29.4

Lacaille 8365, $20^{h}\ 2^{m}\ 37^{s}$.

July 20 . . −32 42 8.3

(*) $20^{h}\ 4^{m}\ 54^{s}$.

September 14 . . −14 4 41.9
20 . . 44.3

(*) $20^{h}\ 4^{m}\ 50^{s}$.

September 27 . . −14 4 39.6
28 . . 43.3

(*) $20^{h}\ 5^{m}\ 49^{s}$.

September 27 . . −14 3 59.4

(*) $20^{h}\ 6^{m}\ 4^{s}$.

September 20 . . −14 4 7.2

(*) $20^{h}\ 6^{m}\ 35^{s}$.

September 14 . . −14 4 1.4

(*) $20^{h}\ 6^{m}\ 48^{s}$.

	° ′ ″
September 28 . .	−14 1 39.0

(*) $20^{h}\ 7^{m}\ 6^{s}$.

September 13 . . +20 45 25.9

O. Arg. S. 20339, $20^{h}\ 7^{m}\ 22^{s}$.

September 10 . . −15 44 38.5

B. A. C. 6949, $20^{h}\ 7^{m}\ 46^{s}$.

August 10 . . −11 16 54.6

ρ Aquilæ, $20^{h}\ 8^{m}\ 15^{s}$.

September 11 . . +14 48 11.5

(*) $20^{h}\ 8^{m}\ 29^{s}$.

September 4 . . −39 23 49.4

(*) $20^{h}\ 9^{m}\ 48^{s}$.

September 20 . . −12 18 39.4

(*) $20^{h}\ 10^{m}\ 8^{s}$.

September 10 . . −24 20 49.0

O. Arg. S. 20533, $20^{h}\ 21^{m}\ 24^{s}$.

July 20 . . −21 19 45.1
August 26 . . 46.9

(*) $20^{h}\ 26^{m}\ 37^{s}$.

August 26 . . −0 7 39.1

(*) $20^{h}\ 26^{m}\ 39^{s}$.

August 31 . . −0 2 36.0
September 2 . . 40.2

B. A. C. 7114, $20^{h}\ 29^{m}\ 16^{s}$.

September 13 . . +40 39 5.4

(*) $20^{h}\ 29^{m}\ 42^{s}$.

September 3 . . −33 53 33.2

τ^{1} Capricorni, (1st *,) $20^{h}\ 30^{m}\ 3^{s}$.

July 29 . . −15 35 40.0
September 7 . . 42.4

Weisse XX, 743, $20^{h}\ 30^{m}\ 9^{s}$.

September 9 . . + 2 2 50.2

(*) $20^{h}\ 30^{m}\ 34^{s}$.

September 29 . . +27 27 43.4

(*) $20^{h}\ 30^{m}\ 35^{s}$.

September 30 . . +27 29 39.3

(*) $20^{h}\ 31^{m}\ 0^{s}$.

September 11 . . −21 49 54.6

Weisse XX, 767, $20^{h}\ 31^{m}\ 12^{s}$.

September 10 . . −13 4 54.2
14 . . 54.9

(*) $20^{h}\ 31^{m}\ 21^{s}$.

September 20 . . +27 29 52.3
28 . . 55.8

β Delphini, $20^{h}\ 31^{m}\ 26^{s}$.

	° ′ ″
September 18 . .	+14 8 42.2

Weisse XX, 779, $20^{h}\ 31^{m}\ 37^{s}$.

September 14 . . −13 6 37.1
16 . . 35.9

(*) $20^{h}\ 31^{m}\ 52^{s}$.

September 10 . . −13 3 38.5

Lacaille 8529, $20^{h}\ 33^{m}\ 20^{s}$.

September 4 . . −32 3 18.2

B. A. C. 7148, $20^{h}\ 33^{m}\ 39^{s}$.

September 9 . . −28 27 12.8

Weisse XX, 841, $20^{h}\ 33^{m}\ 50^{s}$.

October 6 . . − 7 15 16.6

(*) $20^{h}\ 33^{m}\ 55^{s}$.

September 20 . . − 9 5 51.2

Weisse XX, 846, $20^{h}\ 33^{m}\ 59^{s}$.

October 6 . . − 7 14 27.2

Weisse XX, 851, $20^{h}\ 33^{m}\ 59^{s}$.

October 5 . . − 7 19 1.5
6 . . 3.9

Weisse XX, 847, $20^{h}\ 34^{m}\ 0^{s}$.

September 21 . . − 9 58 52.9

B. A. C. 7155, $20^{h}\ 34^{m}\ 21^{s}$.

September 11 . . −40 1 16.4

(*) $20^{h}\ 35^{m}\ 18^{s}$.

October 7 . . +44 48 13.1

(*) $20^{h}\ 36^{m}\ 52^{s}$.

September 27 . . +34 58 30.1

(*) $20^{h}\ 36^{m}\ 55^{s}$.

September 10 . . −35 37 58.1
October 5 . . 57.8
9 . . 62.3

Lalande 40043, $20^{h}\ 37^{m}\ 4^{s}$.

September 27 . . +34 59 31.8

(*) $20^{h}\ 37^{m}\ 8^{s}$.

September 20 . . +34 58 20.4
28 . . 23.2

Lalande 40043, $20^{h}\ 37^{m}\ 19^{s}$.

September 20 . . +34 59 29.6

(*) $20^{h}\ 37^{m}\ 47^{s}$.

September 3 . . −27 24 31.8

B. A. C. 7175, $20^{h}\ 37^{m}\ 49^{s}$.

August 26 . . −39 40 8.9

Lacaille 8549, $20^{h}\ 38^{m}\ 0^{s}$.

September 14 . . −36 35 22.2

(*) 20^h 39^m 3^s.

° ′ ″

September 10 . . −35 37 24.0

O. Arg. S. 20827, 20^h 39^m 48^s.

September 18 . . −25 23 8.0

Lacaille 8559, 20^h 39^m 53^s.

August 31 . . −43 28 51.4
September 2 . . 56.1

B. A. C. 7195, 20^h 40^m 42^s.

September 11 . . −23 19 18.2

B. A. C. 7197, 20^h 40^m 45^s.

September 11 . . −23 12 36.8
13 . . 38.5

Weisse (2) XX, 1357, 20^h 40^m 50^s.

September 27 . . +33 53 55.4
29 . . 52.9

O. Arg. S. 20857, 20^h 40^m 53^s.

July 29 . . −22 33 5.5

Weisse XX, 1023, 20^h 41^m 6^s.

September 21 . . −10 13 31.0
30 . . 32.2

(*) 20^h 41^m 6^s.

October 6 . . −13 57 53.3

Lacaille 8574, 20^h 41^m 23^s.

September 4 . . −30 40 8.1

Weisse (2) XX, 1373, 20^h 41^m 56^s.

September 27 . . +33 53 52.9
29 . . 52.5

Weisse XX, 1059, 20^h 42^m 8^s.

October 7 . . −10 52 8.1

(*) 20^h 42^m 9^s.

September 27 . . +33 54 35.9

B. A. C. 7210, 20^h 42^m 16^s.

October 13 . . −27 50 46.5

B. A. C. 7212, 20^h 42^m 38^s.

September 9 . . −38 23 38.0

Lacaille 8586, 20^h 43^m 6^s.

August 10 . . −41 23 17.1

Lacaille 8594, 20^h 43^m 43^s.

October 6 . . −30 15 51.5

(*) 20^h 43^m 58^s.

October 1 . . −21 30 34.3

O. Arg. S. 20906, 20^h 44^m 15^s.

September 21 . . −31 10 49.9

Weisse XX, 1125, 20^h 44^m 52^s.

September 16 . . − 9 31 45.0

Lacaille 8603, 20^h 45^m 1^s.

September 28 . . −41 33 42.0

Lacaille 8610, 20^h 45^m 6^s.

° ′ ″

September 21 . . −31 12 20.5

O. Arg. S. 20921, 20^h 45^m 29^s.

September 29 . . −28 30 9.8

7 Aquarii, 20^h 49^m 51^s.

August 26 . . −10 11 36.3

Lacaille 8628, 20^h 51^m 18^s.

August 31 . . −43 31 4.1
September 1 . . 8.7

Lacaille 8633, 20^h 52^m 42^s.

August 10 . . −39 14 44.3
September 4 . . 48.3

Lacaille 8642, 20^h 53^m 25^s.

September 7 . . −33 24 4.5
9 . . 4.1

B. A. C. 7287, 20^h 54^m 1^s.

September 11 . . −27 23 12.3
14 . . 12.2

B. A. C. 7286, 20^h 54^m 5^s.

September 20 . . −39 1 59.6
30 . . 63.6

O. Arg. S. 21046, 20^h 54^m 36^s.

September 30 . . −19 45 11.1

Lacaille 8657, 20^h 55^m 44^s.

August 26 . . −43 29 56.4

(*) 20^h 57^m 18^s.

August 31 . . −32 51 33.5

(*) 21^h 0^m 55^s.

September 4 . . −30 3 17.5
9 . . 18.0
11 . . 17.8

Lacaille 8699, 21^h 1^m 1^s.

September 2 . . −37 13 30.5

Lacaille 8701, 21^h 1^m 11^s.

September 14 . . −28 59 45.8

Lalande 41011, 21^h 2^m 39^s.

September 28 . . +28 5 54.2

(*) 21^h 3^m 5^s.

August 10 . . −23 50 3.8

B. A. C. 7349, 21^h 3^m 51^s.

September 20 . . −40 47 29.3

O. Arg. S. 21196, 21^h 4^m 26^s.

September 29 . . −24 39 5.6

Lacaille 8737, 21^h 6^m 50^s.

August 26 . . −41 2 33.2
31 . . 32.2
September 2 . . 31.5

(*) 21^h 10^m 9^s.

° ′ ″

September 7 . . −22 8 27.2
9 . . 30.6

(*) 21^h 10^m 23^s.

September 20 . . +36 39 32.9
28 . . 32.7

ι Capricorni, 21^h 14^m 59^s.

October 5 . . −17 23 9.0

(*) 21^h 16^m 3^s.

September 29 . . +38 22 43.8
30 . . 42.0

B. A. C. 7424, 21^h 16^m 41^s.

October 7 . . −23 18 4.8

Lalande 41550, 21^h 16^m 55^s.

September 11 . . −23 50 45.9

18 Aquarii, 21^h 17^m 9^s.

September 4 . . −13 26 2.8

Lacaille 8804, 21^h 17^m 19^s.

September 1 . . −35 24 40.5

Lalande, 41614, 21^h 17^m 23^s.

October 6 . . +38 12 27.8

B. A. C. 7431, 21^h 17^m 28^s.

October 9 . . +48 49 57 2

(*) 21^h 17^m 52^s.

September 9 . . −23 49 21.6

(*) 21^h 21^m 41^s.

October 7 . . +69 51 38.8

(*) 21^h 22^m 33^s.

September 14 . . −23 48 33.3

(*) 21^h 22^m 36^s.

September 14 . . −23 46 36.9
20 . . 37.4

(* 39) Washington, 21^h 23^m 47^s.

September 28 . . −16 25 22.3

(*) 21^h 23^m 49^s.

September 11 . . +69 54 44.3
October 6 . . 44.8

(*) 21^h 23^m 52^s.

October 5 . . +69 57 22.5

2 Pegasi, 21^h 24^m 6^s.

September 30 . . +23 4 14.7

O. Arg. S. 21442, 21^h 24^m 8^s.

September 4 . . −19 48 23.0

Lalande 41870, 21^h 25^m 16^s.

August 26 . . −12 50 19.9

β Cephei, (Comp.,) 21^h 27^m 0^s.

° ′ ″

September 11 . . +69 59 21.3
October 6 . . 20.5

O. Arg. S. 21492, 21^h 28^m 30^s.

September 2 . . −26 14 43.8

74 Cygni, 21^h 31^m 43^s.

August 30 . . +39 49 50.7

(*) 21^h 31^m 47^s.

October 7 . . −25 5 23.6

(*) 21^h 32^m 0^s.

September 28 . . −25 4 51.2

(*) 21^h 33^m 42^s.

September 29 . . −25 0 59.3
30 . . 63.6

Lacaille 8887, 21^h 34^m 31^s.

October 18 . . −38 31 18.7

B. A. C. 7538, 21^h 34^m 43^s.

October 27 . . −44 5 5.4

κ Capricorni, 21^h 35^m 22^s.

August 26 . . −19 27 27.0

Lacaille 8896, 21^h 36^m 28^s.

September 2 . . −39 8 24.4

(*) 21^h 39^m 50^s.

September 20 . . − 1 7 54.5

θ Piscis Australis, 21^h 40^m 5^s.

September 28 . . −31 29 55.2

B. A. C. 7586, 21^h 40^m 27^s.

October 13 . . +24 57 46.8

Schjellerup 8841, 21^h 40^m 33^s.

September 20 . . − 1 7 33.6
October 5 . . 35.4

(*) 21^h 40^m 40^s.

September 9 . . − 1 7 54.4
14 . . 54.4
20 . . 54.5
October 5 . . 51.9

(*) 21^h 42^m 21^s.

October 6 . . + 2 3 9.7

B. A. C. 7599, 21^h 42^m 39^s.

October 29 . . −13 19 38.7

O. Arg. S. 21687, 21^h 44^m 2^s.

September 2 . . −28 0 17.4

Lacaille 8948, 21^h 45^m 24^s.

October 18 . . −37 30 12.6

(*) 21^h 46^m 6^s.

September 30 . . − 7 6 28.2

(*) 21^h 46^m 29^s.

° ′ ″

September 11 . . + 3 3 52.9

Weisse XXI, 1087, 21^h 47^m 17^s.

October 29 . . −11 58 30.7

(*) 21^h 50^m 13^s.

October 6 . . −21 45 43.1

(*) 21^h 50^m 14^s.

October 6 . . −21 44 7.0

O. Arg. N. 23362, 22^h 0^m 33^s.

September 4 . . +52 52 46.3
14 . . 43.1

O. Arg. S. 21909, 22^h 0^m 45^s.

September 9 . . −23 14 50.4
11 . . 50.2

(*) 22^h 0^m 54^s.

October 6 . . +53 0 14.5
8 . . 14.8

O. Arg. N. 23385, 22^h 1^m 7^s.

October 5 . . +52 59 29.9

O. Arg. N. 23425, 22^h 1^m 50^s.

October 7 . . +53 5 38.3

O. Arg. N. 23438, 22^h 2^m 3^s.

October 18 . . +52 30 32.6

(*) 22^h 2^m 14^s.

October 6 . . +53 3 25.6

(*) 22^h 3^m 13^s.

September 2 . . −40 10 55.0

O. Arg. S. 21964, 22^h 4^m 34^s.

November 27 . . −22 0 45.4

B. A. C. 7739, 22^h 5^m 15^s.

October 27 . . −27 43 28.6

O. Arg. S. 21980, 22^h 5^m 42^s.

October 29 . . −22 7 27.2

(*) 22^h 8^m 52^s.

September 20 . . −21 56 25.1
November 25 . . 26.4

Weisse XXII, 167, 22^h 9^m 31^s.

September 11 . . −12 18 39.5

Weisse XXII, 175, 22^h 9^m 41^s.

September 11 . . −12 17 41.7

30 Pegasi, 22^h 13^m 45^s.

September 14 . . + 5 8 10.6

Weisse XXII, 300, 22^h 15^m 53^s.

September 28 . . −11 53 39.5
October 5 . . 37.9

Weisse XXII, 303, 22^h 15^m 54^s.

September 9 . . + 2 22 2.7

(*) 22^h 18^m 24^s.

° ′ ″

September 20 . . + 3 8 53.8

(*) 22^h 19^m 5^s.

September 14 . . −29 0 32.0

Lacaille 9139, 22^h 21^m 22^s.

October 18 . . −37 38 0.8

(*) 22^h 21^m 36^s.

October 1 . . −16 19 42.7
6 . . 43.2

Weisse XXII, 449, 22^h 22^m 9^s.

October 5 . . −10 35 53.7

(*) 22^h 22^m 20^s.

October 7 . . −10 36 8.5

(*) 22^h 22^m 22^s.

October 7 . . −10 36 31.2

(*) 22^h 22^m 51^s.

October 29 . . −31 6 9.2

Lacaille 9159, 22^h 23^m 40^s.

October 18 . . −31 41 23.4

(*) 22^h 24^m 3^s.

October 16 . . −33 1 9.0

β Piscis Australis, 22^h 24^m 5^s.

October 16 . . −33 0 40.1

(*) 22^h 24^m 8^s.

September 20 . . −34 30 47.2

Lacaille 9163, 22^h 24^m 12^s.

October 13 . . −35 57 23.8

58 Aquarii, 22^h 24^m 46^s.

September 28 . . −11 34 12.4

O. Arg. S. 22204, 22^h 25^m 22^s.

October 9 . . −28 22 44.8

(*) 22^h 26^m 39^s.

December 7 . . −32 58 9.3

(*) 22^h 26^m 42^s.

September 2 . . −37 19 51.6

(*) 22^h 26^m 43^s.

November 3 . . −37 20 26.0

W. Z. LIV, 13, 22^h 27^m 13^s.

September 14 . . −28 3 42.2

(*) 22^h 27^m 52^s.

November 5 . . −28 8 34.5

(*) 22^h 30^m 4^s.

September 11 . . + 3 50 14.9

(*) 22^h 30^m 58^s.

° ′ ″

October 6 . . −35 22 51.9

Lacaille 9194, 22^h 31^m 20^s.

October 8 . . −39 49 46.0

Lacaille 9196, 22^h 31^m 25^s.

October 27 . . −39 9 4.1

Weisse XXII, 645, 22^h 31^m 31^s.

October 29 . . + 8 41 10.1

Weisse XXII, 658, 22^h 31^m 55^s.

October 9 . . + 8 35 1.5

Piazzi 169, 22^h 32^m 16^s.

October 7 . . + 3 51 18.8

(*) 22^h 35^m 14^s.

November 25 . . +53 39 55.4

O. Arg. S. 22374, 22^h 37^m 19^s.

October 16 . . −24 26 44.1

(*) 22^h 38^m 42^s.

September 14 . . −21 33 11.8

(*) 22^h 38^m 58^s.

September 20 . . −21 28 56.7

(*) 22^h 39^m 3^s.

September 14 . . −21 31 38.8
28 . . 38.8

Lacaille 9248, 22^h 38^m 54^s.

October 13 . . −34 50 49.2

B. A. C. 7951, (1st *,) 22^h 41^m 7^s.

October 6 . . − 4 54 10.2
8 . . 9.2

B. A. C. 7951, (2d *,) 22^h 41^m 7^s.

October 6 . . − 4 54 7.8
8 . . 8.0

(*) 22^h 41^m 11^s.

October 6 . . − 4 55 19.0

(*) 22^h 42^m 4^s.

September 11 . . −30 13 42.3

O. Arg. S. 22432, 22^h 42^m 13^s.

November 5 . . −20 56 46.4

Lacaille 9269, 22^h 42^m 14^s.

October 18 . . −23 46 41.5

Rumker 10641, 22^h 42^m 20^s.

December 9 . . − 7 12 50.4

O. Arg. N. 24689, 22^h 42^m 25^s.

November 25 . . +57 51 42.3

(*) 22^h 42^m 36^s.

October 7 . . −14 15 48.1

(*) 22^h 42^m 42^s.

° ′ ″

October 29 . . −33 29 26.9

O. Arg. S. 22436, 22^h 42^m 56^s.

October 28 . . −20 58 48.0

(*) 22^h 43^m 16^s.

November 8 . . − 6 15 10.9

μ Pegasi, 22^h 43^m 41^s.

November 1 . . +23 54 57.8

Lacaille 9283, 22^h 44^m 14^s.

November 10 . . −24 27 12.9

(*) 22^h 44^m 46^s.

October 9 . . −40 8 24.1

δ Piscis Australis, 22^h 48^m 43^s.

September 28 . . −33 14 0.2

O. Arg. S. 22508, 22^h 50^m 17^s.

December 7 . . −24 31 55.2

Lacaille 9313, 22^h 50^m 35^s.

November 3 . . −38 47 43.5
25 . . 46.7

Lalande 44877, 22^h 50^m 37^s.

September 14 . . −20 58 7.9
October 9 . . 7.7

B. A. C. 7998, 22^h 51^m 20^s.

November 10 . . −36 12 51.8

(*) 22^h 51^m 37^s.

December 9 . . +38 41 41.5

(*) 22^h 51^m 41^s.

December 9 . . +38 36 37.9

(1st *) 22^h 51^m 42^s.

October 6 . . −26 47 24.7
8 . . 23.8

(2d *) 22^h 51^m 42^s.

October 6 . . −26 47 33.2
8 . . 31.8

(3d *) 22^h 51^m 42^s.

October 6 . . −26 51 39.1

B. A. C. 8002, 22^h 52^m 28^s.

October 18 . . −30 9 29.7

Weisse XXII, 1088, 22^h 52^m 56^s.

November 5 . . − 5 3 32.4

(*) 22^h 53^m 9^s.

October 6 . . −26 49 45.0

(*) 22^h 55^m 26^s.

October 7 . . − 4 32 53.0

WEISSE XXII, 1149, $22^h\ 55^m\ 30^s$.

		° ′ ″
November 8	. .	−12 0 35.2

WEISSE XXII, 1150, $22^h\ 55^m\ 32^s$.

November 8	. .	−12 0 27.1

RUMKER 10800, $22^h\ 55^m\ 49^s$.

October 9	. .	− 3 54 15.1

o ANDROMEDÆ, $22^h\ 55^m\ 58^s$.

November 1	. .	+41 37 44.5

(*) $22^h\ 56^m\ 0^s$.

November 25	. .	− 8 31 21.4

(*) $22^h\ 56^m\ 19^s$.

December 10	. .	−41 30 52.3

LACAILLE 9352, $22^h\ 57^m\ 37^s$.

October 8	. .	−36 36 3.7
18	. .	0.7

LACAILLE 9359, $22^h\ 57^m\ 48^s$.

September 20	. .	−27 50 9.1
October 28	. .	9.4

(*) $22^h\ 57^m\ 55^s$.

December 7	. .	− 4 11 39.8

LACAILLE 9361, $22^h\ 58^m\ 13^s$.

October 13	. .	−25 3 3.5

(*) $22^h\ 58^m\ 22^s$.

December 9	. .	+38 13 26.7

(*) $22^h\ 59^m\ 9^s$.

November 25	. .	− 8 27 47.4

h^4 AQUARII, $23^h\ 0^m\ 25^s$.

October 16	. .	− 8 23 40.5

ι GRUIS, $23^h\ 2^m\ 58^s$.

September 20	. .	−45 57 6.8

(*) $23^h\ 3^m\ 49^s$.

December 9	. .	+38 13 43.9

WEISSE XXIII, 47, $23^h\ 4^m\ 35^s$.

		° ′ ″
September 14	. .	+ 2 26 54.9

WEISSE XXIII, 98, $23^h\ 6^m\ 55^s$.

October 8	. .	− 7 0 20.5

WEISSE XXIII, 95, $23^h\ 6^m\ 58^s$.

October 7	. .	− 4 31 13.5

(*) $23^h\ 7^m\ 11^s$.

October 13	. .	−20 24 10.6

O. ARG. S. 22691, $23^h\ 7^m\ 26^s$.

October 26	. .	−18 5 0.6

(*) $23^h\ 8^m\ 44^s$.

November 3	. .	−22 2 3.8

O. ARG. S. 22712, $23^h\ 8^m\ 47^s$.

October 7	. .	−22 58 11.2
November 5	. .	10.8

LACAILLE 9415, $23^h\ 9^m\ 8^s$.

October 29	. .	−41 22 12.4

O. ARG. S. 22721, $23^h\ 9^m\ 40^s$.

November 8	. .	−21 53 32.1
10	. .	31.4

LACAILLE 9443, $23^h\ 12^m\ 35^s$.

October 27	. .	−42 40 13.6

LACAILLE 9444, $23^h\ 12^m\ 40^s$.

September 20	. .	−34 25 1.4

(*) $23^h\ 12^m\ 43^s$.

November 25	. .	−39 9 14.7

WEISSE XXIII, 242, $23^h\ 13^m\ 3^s$.

October 8	. .	− 2 17 7.7
November 11	. .	4.5

LACAILLE 9445, $23^h\ 13^m\ 10^s$.

December 3	. .	−43 51 34.3

WEISSE XXIII, 246, $23^h\ 13^m\ 22^s$.

		° ′ ″
October 8	. .	− 2 18 55.0
November 11	. .	55.4

(*) $23^h\ 13^m\ 41^s$.

December 3	. .	−34 36 36.9

τ PEGASI, $23^h\ 14^m\ 12^s$.

October 28	. .	+23 1 44.5

64 PEGASI, $23^h\ 15^m\ 33^s$.

September 28	. .	+31 6 1.7

97 AQUARII, $23^h\ 15^m\ 50^s$.

October 7	. .	−15 45 6.0

(*) $23^h\ 16^m\ 8^s$.

November 5	. .	+66 20 43.1

(*) $23^h\ 20^m\ 9^s$.

November 10	. .	+66 17 14.7

(*) $23^h\ 20^m\ 17^s$.

November 5	. .	+66 12 54.3

69 PEGASI, $23^h\ 21^m\ 11^s$.

October 9	. .	+24 27 15.2

(*) $23^h\ 21^m\ 33^s$.

September 20	. .	−35 55 37.6

(*) $23^h\ 22^m\ 28^s$.

November 24	. .	+ 5 39 34.5

(*) $23^h\ 23^m\ 25^s$.

November 11	. .	+ 5 42 11.7

(*) $23^h\ 30^m\ 1^s$.

September 20	. .	−37 31 11.6

WEISSE XXIII, 609, $23^h\ 30^m\ 38^s$.

October 9	. .	− 1 50 3.3

(*) $23^h\ 30^m\ 46^s$.

September 20	. .	−37 31 11.6

WEISSE XXIII, 679, $23^h\ 33^m\ 52^s$.

		° ′ ″
November 8	. .	+ 7 7 8.6

(*) $23^h\ 42^m\ 57^s$.

September 20	. .	−32 7 34.2

(*) $23^h\ 45^m\ 9^s$.

October 26	. .	−32 5 45.0

22 PISCIUM, $23^h\ 45^m\ 19^s$.

October 7	. .	+ 2 12 29.6

(*) $23^h\ 46^m\ 8^s$.

November 11	. .	+28 53 10.8

B. A. C. 8296, $23^h\ 46^m\ 12^s$.

October 18	. .	+20 56 54.7

(*) $23^h\ 47^m\ 36^s$.

October 29	. .	− 5 40 17.1
November 5	. .	17.5

WEISSE XXIII, 1002, $23^h\ 49^m\ 50^s$.

October 7	. .	+ 0 31 37.9

LACAILLE 9662, $23^h\ 50^m\ 45^s$.

October 26	. .	−37 25 43.6
29	. .	42.4
November 3	. .	42.1

(*) $23^h\ 51^m\ 58^s$.

November 11	. .	−20 44 54.9

(*) $23^h\ 52^m\ 1^s$.

November 8	. .	−20 44 57.8

(*) $23^h\ 52^m\ 22^s$.

October 16	. .	−30 10 54.0

(*) $23^h\ 52^m\ 52^s$.

November 5	. .	+ 6 9 52.3

LACAILLE 9722, $23^h\ 59^m\ 36^s$.

September 20	. .	−33 32 24.6

(*) $23^h\ 59^m\ 49^s$.

October 7	. .	+28 18 16.2

RIGHT ASCENSIONS, NORTH POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS

DEDUCED FROM

OBSERVATIONS WITH THE TRANSIT CIRCLE.

AND

COMPARED WITH THE TABLES.

1869.

RIGHT ASCENSIONS, NORTH POLAR DISTANCES, AND SEMI-DIAMETERS

OF THE

SUN, MOON, AND PLANETS.

SUN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	m. s.	s.		° ′ ″	″	′ ″	″
Jan. 6	N.	. .	19 11 36.98	+ 0.43	1 10.64	− 0.13	. .	112 25 59.0	− 1.5	16 16.4	− 1.9
7	F.	. .	19 15 59.18	+ 0.11	1 10.72	+ 0.02					
8	N.	. .	19 20 21.30	+ 0.22	1 10.57	− 0.06	. .	112 10 12.0	+ 2.6	15.2	− 3.0
13	N.	. .	19 42 2.78	+ 0.04	1 10.20	− 0.03	. .	111 22 59.6	− 0.6	16.4	− 1.6
16	F.	. .	19 54 56.30	+ 0.22	1 9.98	− 0.07					
20	N.	. .	20 11 57.09	+ 0.08	1 9.46	− 0.09	. .	109 59 50.9	− 0.8	16.5	− 0.9
23	F.	. .	20 24 34.52	− 0.01	1 9.13	− 0.10	. .	109 18 28.3	− 3.1	13.3	− 3.8
26	F.	. .	20 37 4.74	− 0.03	1 8.90	0.00	. .	108 33 58.3	− 1.5	17.0	+ 0.2
28	F.	. .	20 45 20.95	+ 0.11	1 8.65	− 0.02	. .	108 4 37.2	− 0.3	13.6	− 2.9
Feb. 1	N.	. .	21 1 43.40	+ 0.20	1 8.16	− 0.05	. .	106 56 2.3	− 1.1	14.4	− 1.5
6	T.	. .	21 21 53.05	+ 0.01	1 7.57	− 0.07	. .	105 26 12.4	− 0.7	14.6	− 0.5
8	N.	. .	21 29 46.78	. .	1 7.31	− 0.10					
11	N.	. .	21 41 43.24	+ 0.09	1 7.02	− 0.05	. .	103 49 50.0	+ 1.0	12.4	− 1.8
12	F.	. .	21 45 38.86	+ 0.01	1 6.94	− 0.02	. .	103 29 49.4	− 0.3	13.0	− 1.0
13	T.	. .	21 49 33.73	− 0.06	1 6.82	− 0.03	. .	103 9 36.6	− 0.4	14.4	+ 0.6
16	F.	. .	22 1 14.16	+ 0.04	1 6.60	− 0.06	. .	102 37 43.8	− 0.3	11.7	− 1.5
18	N.	. .	22 8 57.43	+ 0.09	1 6.27	− 0.07	. .	101 25 31.2	+ 0.4	10.8	− 2.0
19	F.	. .	22 12 47.98	+ 0.09	1 6.26	+ 0.01	. .	101 4 8.4	− 0.5	12.2	− 0.4
20	T.	. .	22 16 37.80	+ 0.05	1 6.06	− 0.09	. .	100 42 34.3	− 0.6	12.4	+ 0.1
24	T.	. .	22 31 50.78	+ 0.08	1 5.74	− 0.05	. .	99 14 47.4	− 1.1	12.6	+ 1.2
25	N.	. .	. . . .	. .	. . .	. .	. .	98 52 32.3	+ 2.1	8.9	− 3.3
March 1	F.	. .	22 50 38.80	+ 0.12	1 5.38	− 0.01	. .	97 21 59.8	− 3.1	10.4	+ 0.2
3	F.	. .	22 58 6.40	+ 0.10	1 5.12	− 0.13	. .	96 36 10.0	+ 0.6	6.6	− 3.1
5	F.	. .	23 5 32.23	+ 0.08	1 5.14	+ 0.02	. .	95 49 52.5	− 2.0	6.5	− 2.7
6	T.	. .	23 9 14.44	− 0.02	1 5.00	+ 0.06	. .	95 26 39.6	+ 0.2	9.4	+ 0.4
9	F.	. .	23 20 19.04	− 0.09	1 5.06	+ 0.19	. .	94 16 27.9	− 1.1	5.8	− 2.4
11	N.	. .	23 27 40.55	+ 0.02	1 4.76	− 0.04	. .	93 29 25.7	+ 0.7	6.1	− 1.5
12	F.	. .	23 31 21.02	+ 0.25	1 4.69	− 0.06	N.	93 5 47.4	− 1.7		
13	T.	. .	23 35 0.75	+ 0.02	1 4.63	− 0.08	. .	92 42 11.6	+ 0.4	6.4	− 0.7
16	F.	. .	23 45 59.22	+ 0.13	1 4.58	− 0.02	. .	91 31 6.0	− 2.8	7.4	+ 1.1
17	T.	. .	23 49 38.00	− 0.08	1 4.46	− 0.12	S.	91 7 26.2	− 0.2		
18	N.	. .	23 53 16.95	+ 0.07	1 4.48	− 0.08	. .	90 43 43.9	+ 0.1	4.4	− 1.4
23	F.	. .	0 11 28.74	+ 0.19	1 4.45	− 0.03	. .	88 45 21.5	− 0.1	3.8	− 0.6
24	T.	. .	0 15 6.58	0.00	1 4.43	− 0.04	. .	88 21 46.5	− 0.3	3.8	− 0.3
27	T.	. .	0 26 0.46	+ 0.02	1 4.40	− 0.06	. .	87 11 15.2	+ 1.1	4.2	+ 0.9
31	T.	. .	0 40 32.68	+ 0.03	1 4.47	− 0.02	. .	85 38 1.4	+ 0.9	2.1	− 2.4
April 3	T.	. .	0 51 27.92	+ 0.01	1 4.48						
5	N.	. .	0 58 45.78	+ 0.18	1 4.50	− 0.10	. .	83 43 16.8	+ 0.1	1.0	− 0.3
12	N.	. .	. . . .	. .	. . .	. .	. .	81 7 17.2	+ 0.5	15 57.6	− 1.3
13	F.	I.	1 28 5.97	. .	. . .	. .	S.	80 45 29.9	− 2.1		
21	Ha.	II.	1 57 47.12	+ 0.22	. . .	. .	N.	77 57 31.1	− 4.5		
22	N.	. .	2 1 31.38	+ 0.07	1 5.34	− 0.10	. .	77 37 27.5	+ 1.4	54.6	− 1.7
23	Ha.	. .	2 16 33.50	. .	. . .	. .	. .	77 17 27.8	− 1.1	56.2	+ 0.2
26	N.	. .	2 16 33.50	− 0.03	1 5.64	− 0.08	. .	76 18 52.3	− 2.2	53.7	− 1.6
27	F.	. .	2 20 20.29	− 0.02	1 5.70	− 0.09	. .	76 31 48.2	− 0.9	52.6	− 2.4
28	Ha.	. .	. . . .	. .	. . .	. .	. .	75 40 56.0	− 1.8	53.8	− 1.0
May 4	F.	. .	2 47 2.82	+ 0.02	1 6.30	− 0.04	. .	73 52 53.4	− 2.9	49.0	− 4.4
5	Ha.	. .	2 50 54.03	+ 0.03	1 6.28	− 0.14	. .	73 35 50.2	+ 0.3	52.0	− 1.1
8	F.	. .	3 1 31.06	− 0.01	1 6.72	+ 0.05	. .	72 46 8.9	− 0.5	52.3	− 0.1
10	N.	. .	3 11 19.42 :	+ 0.73 :	1 6.70	− 0.13	. .	72 14 27.0	− 0.6	50.2	+ 0.2
15	F.	. .	3 29 57.90	+ 0.09	1 7.20	− 0.04	. .	71 0 29.6	0.0	50.8	− 0.2
17	N.	. .	3 37 53.44	+ 0.06	1 7.29	− 0.11	. .	70 33 9.0	+ 1.6	49.2	− 1.4
18	F.	. .	3 41 52.02	+ 0.04	1 7.40	− 0.08					
20	N.	. .	3 49 50.78	+ 0.01	1 7.52	− 0.11	. .	69 54 32.0	− 1.1	48.8	− 1.3
21	Ha.	. .	. . . .	. .	. . .	. .	. .	69 42 20.4	− 1.9	48.9	− 1.0
24	N.	. .	4 5 54.74	+ 0.12	1 7.78	− 0.16	. .	69 7 56.9	− 0.3	48.1	− 1.3
26	Ha.	. .	4 13 59.51	− 0.08	1 7.96	− 0.12	. .	68 46 47.3	− 0.1	48.1	− 1.0
31	N.	. .	. . . .	. .	. . .	. .	. .	68 0 23.1	+ 2.7	47.5	− 0.9
June 3	N.	. .	4 46 38.22	+ 0.25	1 8.41	− 0.13	. .	67 37 1.6	+ 0.3	45.8	− 2.2
4	Ha.	. .	. . . .	. .	. . .	. .	. .	67 30 1.8	+ 0.3	47.8	0.0

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Correction to Tables of— Peirce.	Correction to Tables of— Hansen.	Limb.	Geocentric North Polar Distance of Center.	Correction to Tables of— Peirce.	Correction to Tables of— Hansen.
1869.	h. m. s.			h. m. s.	s.	s.		° ′ ″	″	″
Jan. 19	5 15 19.0	F.	I.	1 12 41.36	− 0.08	+ 0.02	S.	87 17 8.8	+ 1.4	− 1.1
20	5 58 50.7	N.	I.	2 0 16.80	− 0.06	+ 0.08	S.	83 8 6.8	+ 3.2	+ 1.2
22	7 32 57.3	F.	I.	3 42 31.93	− 0.07	− 0.08	S.	75 38 29.5	+ 0.1	− 0.8
23	8 25 1.9	F.	I.	4 38 41.12	+ 0.18	+ 0.06	S.	72 45 8.2	+ 3.2	+ 2.2
27	12 22 3.4	F.	II.	8 52 8.34	+ 0.17	− 0.15	S.	72 59 8.7	− 3.5	− 3.3
Feb. 1	16 58 6.6	N.	. .	. . . . .	. .	. .	S.	95 51 27.7	− 0.1	− 1.8
4	19 29 17.8	F.	II.	16 32 5.36	+ 0.17	− 0.50	S.	116 56 51.3	− 0.3	− 1.5
5	20 19 49.9	T.	II.	17 26 42.28	0.00	− 0.62				
13	1 48 48.6	T.	I.	23 24 8.87	− 0.22	− 0.02				
16	3 55 27.4	F.	I.	1 43 59.58:	− 0.07	0.00				
19	6 14 20.1	F.	I.	4 14 5.36	+ 0.24	− 0.04	S.	73 53 17.0	− 2.1	− 1.1
20	7 6 33.2	T.	I.	5 10 23.36:	+ 0.55	− 0.03	S.	71 33 39.3	+ 0.2	+ 1.5
24	11 0 39.9	T.	I.	9 20 55.33	− 0.16	− 0.16	N.	74 23 37.4	− 1.2	+ 0.1
26	12 57 12.7	F.	II.	11 25 39.09	− 0.14	− 0.34	S.	83 11 56.3	− 1.1	+ 0.4
27	13 52 43.6	T.	II.	12 55 16.56	− 0.05	− 0.43	S.	88 26 55.5:	+ 5.7:	+ 7.0:
March 4	18 15 36.7	N.	II.	17 8 35.58	+ 0.23	− 0.47	S.	108 25 21.8	− 4.8	− 6.2
5	19 6 46.4	F.	II.	18 3 50.27	+ 0.12	− 0.53	S.	109 14 4.0		
6	19 57 4.7	F.	II.	18 58 13.36	− 0.10	− 0.71				
8	21 23 43.1	F.	II.	20 43 0.72	+ 0.14	− 0.44				
18	4 9 56.7	N.	I.	3 55 48.64	+ 0.08	+ 0.09	S.	74 43 27.7	− 0.8	− 0.8
20	5 52 39.4	T.	I.	5 46 41.06	+ 0.27	+ 0.01	N.	70 28 51.9	+ 1.0	+ 3.7
21	6 47 58.2	N.	I.	6 46 5.42	+ 0.50	0.00	N.	69 56 31.5	− 1.1	+ 0.9
23	8 43 11.0	F.	I.	8 49 30.49	+ 0.63	− 0.04	N.	72 45 55.8	+ 1.2	+ 0.1
24	9 41 6.8	T.	I.	9 51 32.24	+ 0.36	+ 0.06	N.	76 6 25.0	+ 2.2	+ 1.3
27	12 29 24.7	T.	II.	12 52 7.48	− 0.28	− 0.34	N.	90 56 30.4	− 1.1	− 0.4
30	15 12 8.1	F.	II.	15 47 7.22	+ 0.25	− 0.40	S.	104 50 38.5	+ 2.9	− 0.9
31	16 5 55.6	T.	II.	16 44 59.53:	+ 0.22	− 0.49				
April 3	18 41 41.8	T.	II.	19 33 1.53	− 0.10	− 0.57	N.	109 41 38.3	+ 2.2	+ 1.3
4	19 30 22.2	N.	II.	20 25 44.52	− 0.14	− 0.57	N.	108 16 5.8	+ 1.9	+ 1.7
5	20 17 1.2	F.	II.	21 16 29.85	− 0.16	− 0.63	N.	116 0 13.6	− 0.4	− 0.4
6	21 1 55.8	T.	II.	22 5 27.93	− 0.07	− 0.51	N.	103 2 54.0	+ 6.2	+ 6.9
7	21 45 24.8	N.	II.	22 22 59.95	+ 0.05	− 0.44				
15	2 56 57.5	N.	I.	4 33 0.74	+ 0.38	+ 0.23				
16	3 48 42.6	F.	. .	. . . . .		. .	N.	70 39 59.3	+ 7.1	+ 8.5
17	4 42 40.4	Ha.	I.	6 26 54.06	+ 0.29	+ 0.23	N.	69 45 2.1	+ 1.6	+ 4.1
19	6 34 17.8	N.	I.	8 26 42.87	+ 0.01	− 0.11	N.	71 37 22.4	− 2.2	0.0
21	8 25 38.0	Ha.	I.	10 26 14.53	+ 0.20	− 0.08	N.	78 17 58.0	+ 0.1	− 0.3
22	9 20 9.1	N.	I.	11 24 51.15	+ 0.27	− 0.01	N.	82 59 56.6	+ 1.3	+ 0.1
24	11 7 47.6	F.	I.	13 20 40.44	− 0.10	− 0.21	N.	93 31 53.6	− 1.7	− 2.5
29	15 40 19.9	N.	II.	18 13 40.22	+ 0.06	− 0.37	N.	110 14 22.7	+ 4.5	+ 0.1
May 2	18 12 2.9	N.	II.	20 57 37.65	− 0.28	− 0.53	N.	107 11 59.9	+ 4.0	+ 2.3
3	18 58 5.2	F.	II.	21 47 44.29	− 0.19	− 0.44	N.	104 26 33.7	+ 4.0	+ 3.5
17	5 25 56.3	N.	I.	9 8 33.66	+ 0.26	− 0.02	N.	73 11 21.6	+ 2.8	+ 4.0
20	8 5 57.1	N.	I.	12 0 50.48	+ 0.05	− 0.13	N.	85 59 9.3	− 0.3	− 0.7
22	9 49 58.5	F.	I.	13 53 2.03	+ 0.11	− 0.18	N.	96 19 56.1	− 0.8	− 1.6
24	11 36 52.3	N.	I.	15 48 6.90	− 0.10	− 0.26	N.	105 5 20.2	+ 0.3	− 0.7
25	12 31 43.7	F.	II.	16 47 2.50	− 0.45	− 0.48	N.	108 6 48.8	+ 3.0	+ 1.0
26	13 26 46.8	Ha.	. .	. . . . .	. .	. .	N.	109 57 52.1	+ 4.1	+ 1.2
June 5	21 11 1.9	N.	II.	2 11 9.14	− 0.37	− 0.62				

MERCURY.

Date.	Observer.	Part observed.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Part observed.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
Jan. 26	F.	C.	21 29 53.50	+ 0.11	. .	. .	C.	105 12 10.6	+ 0.8		
Feb. 11	N.	I.	22 50 46.00	+ 0.21	. .	. .	C.	96 33 54.1	− 0.1		
March 2	T.	II.	21 35 50.52	+ 0.34	. .	. .	C.	105 19 37.6	− 0.1		
4	F.	II.	21 36 34.43	+ 0.17	. .	. .	C.	102 45 18.2	− 3.2		
10	N.	C.	21 47 20.88	+ 0.35	. .	. .	C.	103 13 38.4	− 2.5		
11	F.	C.	21 50 9.73	+ 0.16	. .	. .	C.	103 11 33.9	− 2.9		
12	T.	II.	21 53 13.14	+ 0.21	. .	. .	N.	103 7 41.5	− 1.5		
15	F.	II.	22 3 39.10	+ 0.25	. .	. .	N.	102 45 29.3	+ 0.5		
22	F.	II.	22 33 38.86	+ 0.35	. .	. .	C.	100 56 57.4	+ 0.5		
23	T.	II.	22 38 25.66	+ 0.22	. .	. .	N.	100 35 26.3	− 0.1		
26	T.	II.	22 53 22.07	+ 0.28	. .	. .	C.	99 22 36.7	− 0.1		
30	T.	II.	23 14 30.58	+ 0.31	. .	. .	N.	97 26 51.1	− 0.8		
April 4	N.	C.	5 4 10.11	+ 0.30	. .	. .	C.	94 34 9.8	− 3.3		
5	F.	II.	23 48 32.12	+ 0.09	. .	. .	C.	93 56 7.8	− 2.5		
May 18	F.	C.	5 4 10.11	− 0.17	. .	. .	S.	64 52 33.0	+ 0.1		
20	N.	C.	5 17 48.34	− 0.07	. .	. .	N.	64 34 52.1	− 0.4		

VENUS.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Sid. Time of Transit of Semi-diam.	Corr'n to Am. Eph.	Limb.	Geocentric N.P. Distance of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.	s.		° ′ ″	″	″	″	″
Jan. 6	F.	II.	17 7 0.38	+ 0.16	+ 0.10	. .	. .	S.	111 44 49.9	+ 2.0	− 0.3		
Feb. 5	T.	II.	17 48 4.02	+ 0.14	+ 0.14	. .	. .	N.	111 21 0.0	+ 2.4	+ 0.5		

MARS.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Sid. Time of Transit of Semi-diam.	Corr'n to Am. Eph.	Limb.	Geocentric N.P. Distance of Center.	Corr'n to Am. Eph.	Correction to Le Verrier's Tables.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.	s.		° ′ ″	″	″	″	″
Jan. 16	F.	.	. . . .	. .	. .	. .	. .	S.	76 5 53.0	— 1.2	— 1.9		
19	F.	.	10 26 29.32	+ 0.19	+ 0.15	0.62	+ 0.16	.	75 48 5.0	+ 0.6	+ 0.7	6.4	+ 0.1
20	N.	.	10 25 42.76	+ 0.15	+ 0.08	.44	— 0.03	.	75 41 39.2	— 0.1	— 0.1	6.5	+ 0.3
23	F.	.	10 23 5.39	+ 0.15	+ 0.01	.56	+ 0.08	.	75 21 6.3	— 0.3	— 0.2	5.6	— 1.4
28	H.	.	10 17 46.75	+ 0.13	+ 0.05	.52	+ 0.03	.	74 43 11.5	+ 0.7	+ 0.7	7.6	+ 0.4
Feb. 1	N.	.	10 13 46.14	+ 0.21	0.00	.39	— 0.11	.	74 10 25.2	— 1.8	— 1.9	7.1	— 0.2
5	F.	.	10 7 11.81	+ 0.32	+ 0.03	.42	— 0.09	.	73 36 36.8	— 2.5	— 2.8	8.1	+ 0.7
6	T.	.	10 5 43.91	+ 0.28	+ 0.07	.47	— 0.04	S.	73 28 11.8	+ 1.5	+ 1.5		
11	N.	.	9 58 6.60	+ 0.18	— 0.03	.50	— 0.02	.	72 46 26.8	0.0	— 0.3	7.4	0.0
12	F.	.	9 56 32.88	+ 0.24	+ 0.03	.52	0.00	.	72 38 21.6	— 0.2	— 0.7	7.4	0.0
13	T.	.	. . . .	. .	. .	. .	. .	.	72 30 24.7	— 0.2	— 0.3	8.1	+ 0.6
15	N.	.	9 51 50.14	+ 0.25	— 0.03	.44	— 0.08	.	72 14 57.4	— 0.9	— 0.7	7.2	+ 0.3
16	F.	.	9 50 16.12	+ 0.28	+ 0.03	.59	+ 0.07	.	72 8 42.8	+ 72.6	+ 72.6	5.6	— 1.8
19	F.	.	9 45 37.02	+ 0.24	+ 0.03	.72	+ 0.20	.	71 46 15.0	— 2.0	— 1.7	8.3	+ 0.9
20	T.	.	9 44 5.52	+ 0.12	— 0.01	.51	— 0.01	.	71 39 52.8	+ 13.9	+ 14.1	7.5	+ 0.1
26	F.	.	9 35 25.55	+ 0.13	— 0.05	.46	— 0.05	.	71 5 5.3	+ 1.5	+ 2.2	7.2	— 0.1
27	T.	.	9 34 5.02	+ 0.16	— 0.06	.52	+ 0.01	.	71 0 13.6	— 0.4	+ 0.2	7.0	— 0.2
March 5	F.	.	9 26 49.31	+ 0.13	— 0.05	.51	0.00	.	70 35 52.7	— 80.0	— 79.4	7.8	+ 0.8
12	F.	.	9 20 23.95	+ 0.11	— 0.04	.49	0.00	.	70 23 20.8	— 1.8	— 0.9	7.5	+ 0.8
15	N.	.	9 18 24.44	+ 0.19	+ 0.01	.45	— 0.01	.	70 21 35.7	— 0.3	+ 0.5	5.7	— 0.8
17	T.	.	9 17 20.54	+ 0.23	+ 0.03	.44	— 0.02	.	70 21 44.0	— 0.4	+ 0.6	7.2	+ 0.8
18	N.	.	9 16 53.25	+ 0.14	0.00	.40	— 0.06	.	70 22 9.7	— 1.9	— 1.2	5.8	— 0.6
23	F.	.	. . . .	. .	. .	. .	. .	S.	70 28 6.3	+ 0.9	+ 3.4		
24	T.	.	9 15 15.69	+ 0.11	+ 0.01	.40	— 0.03	.	70 29 55.2	— 2.4	— 0.3	5.5	— 0.6
27	T.	.	9 15 7.90	+ 0.12	0.00	.42	0.00	.	70 36 51.3	— 1.3	— 0.5	8.7	+ 2.8
31	T.	.	9 15 37.66	+ 0.13	— 0.01	.38	— 0.02	.	70 48 57.3	— 1.6	— 0.5	8.9	+ 3.2
April 3	T.	.	9 16 28.61	+ 0.15	— 0.01	.41	+ 0.01	.	71 0 4.5	— 0.2	+ 0.6	6.0	+ 0.4
7	T.	.	9 18 12.61	+ 0.14	— 0.08	.39	0.00	.	71 17 23.6	— 1.1	— 0.2	5.6	+ 0.2
8	N.	.	9 18 44.84	+ 0.20	— 0.04	.32	— 0.06	.	71 22 10.2	— 0.6	+ 0.6	5.6	+ 0.2
9	F.	.	9 19 19.35	+ 0.16	— 0.07	.37	— 0.01	.	71 27 5.9	— 1.1	— 0.4	5.4	+ 0.1
13	F.	.	9 22 0.38	+ 0.16	— 0.06	.30	— 0.06	.	71 48 25.6	— 3.0	— 3.0	5.1	— 0.1
16	F.	.	9 24 23.73	+ 0.04	— 0.08	.38	+ 0.03	.	72 6 8.3	— 2.0	— 0.9	9.8	+ 4.8

NOTES.

February 16 and March 5. Probably 5 revolutions wrong in N. P. D.
February 20. Probably 1 revolution wrong in N. P. D.

SATURN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.		° ′ ″	″	″	″
March 4	N.	. .	17 3 18.85	− 0.70	0.50	− 0.09	. .	111 9 11.6	− 16.3	8.8	− 0.8
30	F.	. .	17 4 50.22	− 0.39	0.29	− 0.32	. .	111 8 32.1	− 12.1	5.8	− 2.3
April 29	N.	. .	17 0 52.60	− 0.69	1.36	. .	. .	111 0 42.0	− 12.9	8.8	− 0.3
May 3	N.	. .	16 59 57.56	− 0.53	0.62	− 0.03	. .	110 59 11.7	− 13.5	9.2	− 0.6
4	F.	. .	16 59 42.95	− 0.64	0.69	+ 0.04	. .	110 58 49.5	− 13.5	11.2	+ 2.7
15	N.	. .	16 57 47.35	− 0.64	1.56	. .	. .	110 54 10.0:	− 18.8:	5.0:	− 3.6
17	N.	. .	16 56 13.01	− 0.41	0.61	− 0.04	. .	110 53 24.5	− 11.7	9.0	+ 0.4
20	N.	. .	16 55 19.84	− 0.54	0.65	− 0.01	. .	110 52 4.1	− 11.8	9.5	+ 0.9
23	F.	. .	16 54 43.86	− 0.47	0.67	+ 0.01	. .	110 51 7.8	− 14.0	10.7	+ 2.0
24	N.	. .	16 54 7.41	− 0.42	0.58	− 0.08	. .	110 50 15.2	− 12.1	9.1	+ 0.4
25	F.	. .	16 53 48.90	− 0.54	0.65	− 0.01	. .	110 49 48.0	− 11.9	10.4	+ 1.7
26	H.	. .	16 53 30.30	− 0.64	1.54	. .	. .	110 49 20.0	− 12.4	10.5	+ 1.8
June 5	F.	. .	16 50 22.89	− 0.31	0.65	− 0.01					

URANUS.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Vertical Semi-diameter.	Corr'n to Am. Eph.
Jan. 6	N.	C.	7 6 40.89	+ 1.72	. .	. .	. .	66 59 43.8	+ 13.9	2.3	+ 0.4
12	F.	. .	7 5 33.89	+ 1.66	0.16	+ 0.04	. .	66 57 56.0	+ 14.0		
13	N.	C.	7 5 22.90	+ 1.73	. .	. .	. .	66 57 38.5	+ 14.1		
16	F.	. .	7 5 50.04	+ 1.77	0.19	+ 0.07	. .	66 56 46.0	+ 13.4	2.0	+ 0.1
19	F.	. .	7 4 17.56	+ 1.68	0.22	+ 0.10	. .	66 55 55.7	+ 13.5	2.8	+ 0.9
20	N.	C.	7 4 6.82	+ 1.60	. .	. .	. .	66 55 39.3	+ 13.5		
23	F.	C.	7 3 35.31	+ 1.60	. .	. .	. .	66 54 50.4	+ 12.7		
30	F.	C.	7 2 25.17	+ 1.47	. .	. .	. .	66 53 5.1	+ 12.1		
Feb. 1	N.	C.	7 2 6.35	+ 1.65	. .	. .	. .	66 52 39.3	+ 14.1		
5	F.	. .	7 1 29.74	+ 1.47	0.14	+ 0.02	. .	66 51 43.0	+ 10.5		
6	T.	. .	7 1 21.09	+ 1.58	0.16	+ 0.04	. .	66 51 33.0	+ 13.0	2.8	+ 0.9
8	N.	C.	7 1 4.16	+ 1.70	. .	. .	. .	66 51 9.2	+ 13.6		
10	T.	. .	7 0 47.45	+ 1.43	0.14	+ 0.02	. .	66 50 45.3	+ 12.6	4.0	+ 2.1
11	N.	. .	7 0 39.63	+ 1.59	0.12	0.00	. .	66 50 33.8	+ 12.3		
12	F.	. .	7 0 31.76	+ 1.51	0.20	+ 0.08	. .	66 50 22.9	+ 12.2	2.0	+ 0.1
13	T.	C.	7 0 24.22	+ 1.60	. .	. .	. .	66 50 12.1	+ 12.0		
16	F.	. .	7 0 2.22	+ 1.42	0.24	+ 0.13	. .	66 49 41.0	+ 10.2	3.0	+ 1.1
19	F.	. .	6 59 42.04	+ 1.40	0.10	− 0.01	. .	66 49 18.2	+ 15.2		
20	T.	. .	6 59 35.81	+ 1.51	0.14	+ 0.03	. .	66 49 6.5	+ 12.0	2.4	+ 0.5
24	T.	. .	6 59 12.38	+ 1.40	0.14	+ 0.03	. .	66 48 36.6	+ 12.8	1.8	0.0
27	T.	. .	6 58 56.98	+ 1.50	0.16	+ 0.05	. .	66 48 18.2	+ 14.1	1.5	− 0.3
March 1	F.	. .	6 58 47.70	+ 1.46	0.20	+ 0.09	. .	66 48 3.6	+ 11.1	3.1	− 1.3
13	T.	C.	6 58 10.63	+ 1.43	. .	. .	. .	66 47 22.1	+ 11.9		

NEPTUNE.

Date.	Observer.	Limb.	App'nt Right Ascension of Center.	Corr'n to Am. Eph.	Corr'n to Newcomb's Tables.	Sid. Time of Transit of Semi-diam.	Corr'n to Am. Eph.	Limb.	Geocentric N. P. Distance of Center.	Corr'n to Am. Eph.	Corr'n to Newcomb's Tables.	Vertical Semi-diam'r.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.	s.		° ′ ″	″	″	″	″
Jan. 6	N.	. .	0 56 9.50	− 3.89	+ 0.05								
13	N.	. .	0 56 23.33	− 3.81	+ 0.11	. .	. .	. .	85 43 36.4	+ 22.4	0.0		

SMALL PLANETS.

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
VESTA (4)								
1869.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
May 25	F.	11 3.8	16 55.9	15 18 54.83	+ 1.17			
June 5	F.	10 11.8	16 3.6	15 10 4.35	. .	98 40 32.0	+ 6.8	
HEBE (6)								
April 16	F.	11 54.3	17 39.9	13 35 35.40	+ 2.38	78 37 52.5	− 3.1	
FLORA (8)								
May 25	F.	13 10.4	19 0.0	17 23 53.34	+ 4.88	117 22 32.6	+ 11.1	
EGERIA (13)								
May 15	F.	10 59.1	16 47.4	14 34 42.25	+ 0.04	106 58 39.6	+ 3.4	
MELPOMENE (18)								
May 4	F.	12 31.5	18 19.2	15 24 10.74	+ 0.12	92 19 50.7	− 32.4	Probably 1 rev. = 15″.3 wrong.
15	F.	11 38.0	17 25.8	15 13 35.30	+ 0.37	91 26 44.1	− 14.2	
MASSALIA (20)								
April 13	F.	10 21.4	16 11.5	11 50 50.42	+ 20.14	89 20 41.5	− 38.9	
LUTITIA (21)								
Jan. 20	N.	13 3.9	18 50.5	9 6 32.66	− 1.01	69 42 55.8	− 4.2	
Feb. 11	N.	11 15.5	17 2.0	8 44 33.43	− 1.05	68 2 5.7	− 4.5	
12	F.	11 10.7	16 57.1	8 43 36.73	− 1.25			
13	T.	11 5.8	16 52.0	8 42 41.20	− 1.12	67 54 53.1	− 6.2	
CALLIOPE (22)								
March 23	F.	12 38.7	18 23.2	12 45 10.08	+ 7.47	75 17 11.5	+ 55.5	
April 13	F.	10 58.8	16 42.7	12 28 15.13	+ 7.58	74 35 24.7	+ 41.0	Probably 1 rev. = 15″.3 wrong.
POMONA (32)								
May 4	F.	11 31.2	18 19.2	14 23 34.28	− 0.77	104 14 30.5	0.0	
AGLAIA (47)								
Jan. 20	N.	11 11.2	16 54.2	7 13 27.80	+ 0.38	60 43 44.4	− 3.3	

Date.	Observer.	Washington Mean Time.	Berlin Mean Time corrected for Aberration.	Apparent Right Ascension of Center.	Corr'n to Ephem.	Geocentric N. P. Distance of Center.	Corr'n to Ephem.	NOTES.
			NEMAUSA (51)					
1869.		h. m.	h. m.	h. m. s.	s.	° ′ ″	″	
March 23	F.	12 29.9	18 21.6	12 36 47.84	− 0.64	90 17 33.0	− 15.0	
April 13	F.	10 51.5	16 43.0	. . . .	. .	86 34 55.5	− 12.0	
			EUROPA (52)					
Feb. 20	T.	13 2.4	18 49.2	11 7 12.96	− 0.59	78 14 0.1	− 3.8	
27	F.	12 29.8	18 15.8	11 2 12.26	− 0.76	77 25 8.6	− 3.7	
			PANDORA (55)					
Jan. 20	N.	11 40.5	18 27.1	7 42 41.36	+ 2.23	57 45 9.4	+ 1.1	
			MELETE (56)					
May 3	N.	12 39.2	18 30.7	15 27 46.07	+ 5.25	100 26 22.7	+ 5.3	
15	F.	11 42.3	17 34.2	15 17 53.73	+ 5.26	98 51 42.8	+ 1.9	
20	N.	11 18.3	17 10.1	15 13 44.37	+ 5.51	98 16 14.1	+ 5.5	
			CONCORDIA (58)					
April 7	T.	11 53.7	17 42.4	12 59 37.94	− 0.08			
13	F.	11 25.4	17 14.0	12 54 58.10	− 0.20	90 39 46.3	− 3.5	
14	T.	11 20.8	17 9.2	12 54 12.99	− 0.05	90 33 42.6	− 1.8	
22	N.	10 43.6	16 31.9	12 48 35.77	+ 0.22	89 49 30.9	− 3.5	
			LETO (68)					
Jan. 20	N.	13 8.3	18 51.9	9 11 2.29	+ 2.27	61 48 26.1	+ 30.3	Probably 1 rev.=15″.3 wrong.
Feb. 11	N.	11 21.0	17 4.3	8 50 3.79	+ 2.80	60 29 15.7	+ 45.3	
13	T.	11 11.4	16 54.6	8 42 41.20	+ 3.10	60 25 17.6	+ 43.7	
			PANOPÆA (70)					
March 15	N.	12 30.3	18 16.8	12 5 45.63	+ 0.94	74 57 45.0	+ 2.6	
			NIOBE (71)					
Feb. 20	T.	13 21.7	19 10.9	11 26 33.47	− 0.99	109 20 59.7	− 27.0	
27	T.	12 46.6	18 36.1	11 19 2.83	− 1.20	110 16 46.7	− 28.5	
			EURYNOME (79)					
April 7	T.	11 38.2	17 24.8	12 44 5.24	− 12.52	96 21 14.7	− 79.1	
14	T.	11 4.9	16 51.3	12 38 15.59	− 12.19	95 33 1.2	− 73.7	
22	N.	10 27.4	16 13.5	12 30 20.35	− 11.44			
			JULIA (89)					
March 18	N.	12 37.2	17 21.2	12 16 36.26	+ 17.12	113 48 14.5	+ 46.1	

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

MOON AND PLANETS,

DEDUCED FROM OBSERVATIONS WITH THE

TRANSIT INSTRUMENT AND MURAL CIRCLE,

AND

COMPARED WITH THE TABLES.

1869.

RIGHT ASCENSIONS, DECLINATIONS, AND SEMI-DIAMETERS

OF THE

MOON AND PLANETS.

MOON.

Date.	Mean Time of Transit of Center.	Observer.	Limb.	Apparent Right Ascension of Center.	Corrections to tables of— Peirce.	Corrections to tables of— Hansen.	Observer.	Limb.	Geocentric Declination of Center.	Corrections to tables of— Peirce.	Corrections to tables of— Hansen.
1869.	h. m. s.			h. m. s.	s.	s.			° ′ ″	″	″
June 16	. . . .	.	.	. . . .	. .	. .	D.	N.	+ 5 45 3.2	− 0.8	+ 0.6
17	6 54 7.1	Y.	I.	12 39 12.23	0.00	− 0.20	B.	N.	+ 0 39 32.1	+ 4.8	+ 5.9
18	7 44 49.4	E.	I.	12 33 59.46	− 0.06	− 0.22	D.	N.	− 4 27 9.1	+ 2.7	− 3.4
19	8 35 56.2	Y.	I.	14 29 11.21	− 0.05	− 0.26	B.	N.	− 9 16 50.3	+ 6.5	− 6.8
July 16	6 33 13.1	F.	I.	14 12 35.03	− 0.08	− 0.25	D.	N.	− 7 46 1.8	+ 0.9	− 3.1
20	10 2 13.5	Y.	I.	17 57 55.92	− 0.12	− 0.27	B.	N.	− 20 11 3.7	+ 3.0	− 3.7
21	10 55 16.8	F.	I.	18 55 4.28	− 0.49	− 0.70	B.	N.	− 20 37 8.3	+ 2.9	+ 1.7
22	11 47 13.2	Y.	.	19 51 5.97	− 0.11	− 0.38	B.	.	− 19 54 29.0	− 1.0	− 3.2
23	12 37 18.3	F.	II.	20 45 15.82	− 0.36	− 0.68					
24	13 25 8.2	Y.	II.	21 37 10.21	− 0.12	− 0.52					
26	14 54 18.7	F.	II.	23 14 28.49	− 0.09	− 0.55					
30	17 42 37.8	F.	II.	2 19 1.81	− 0.33	− 0.64					
31	18 27 15.7	F.	II.	3 7 43.22	− 0.22	− 0.47					
Aug. 10	2 43 56.1	Y.	I.	12 1 14.17	− 0.59	− 0.46					
14	6 13 3.1	Y.	I.	15 46 41.79	− 0.19	− 0.53	B.	N.	− 14 51 9.8	− 12.2	− 15.5
16	7 58 20.2	F.	I.	17 40 9.17	− 0.14	− 0.37	D.	N.	− 19 48 58.0	− 1.4	− 3.9
18	9 42 36.6	F.	I.	19 32 35.87	− 0.24	− 0.26	D.	.	− 20 16 10.2	− 3.4	− 5.4
19	10 32 46.1	Y.	I.	20 26 50.19	− 0.32	− 0.32					
20	11 20 57.2	F.	I.	21 19 5.80	− 0.43	− 0.41					
23	13 33 50.5	F.	II.	23 44 10.58	− 0.33	− 0.81					
25	14 57 3.4	F.	II.	1 15 30.24	− 0.18	− 0.46					
26	15 39 2.3	F.	II.	3 1 32.61	− 0.14	− 0.48					
28	17 7 34.3	F.	II.	3 38 12.20	− 0.05	− 0.43					
30	18 46 34.2	F.	II.	5 25 21.55	− 0.01	− 0.33					
31	19 40 43.7	F.	II.	6 23 36.48	+ 0.06	− 0.15					
Sept. 10	4 6 21.4	F.	I.	15 26 6.21	− 0.76	− 0.50					
11	. . . .	.	.	. . . .	. .	. .	B.	N.	− 17 5 25.0	+ 0.7	+ 0.4
13	6 47 18.3	F.	I.	18 19 19.17	+ 0.07	− 0.51	D.	.	− 20 36 23.4	− 1.9	− 4.4
14	7 39 29.2	Y.	I.	19 15 35.32	− 0.09	− 0.56	B.	S.	− 20 35 44.3	+ 0.4	− 1.4
16	9 18 30.7	Y.	I.	21 2 46.05	− 0.36	− 0.40	B.	S.	− 17 26 10.7	− 3.5	− 5.6
18	10 49 21.6	Y.	I.	22 41 45.00	− 0.50	− 0.40	B.	S.	− 11 6 42.6	− 5.4	− 10.0
20	12 14 11.1	F.	II.	0 14 41.56	− 0.42	− 0.28	B.	.	− 2 59 46.3	− 8.0	− 13.6
Oct. 11	5 33 52.5	F.	I.	18 56 4.76	− 0.24	− 0.42	B.	S.	− 20 57 22.7	+ 0.5	− 1.8
13	7 15 42.0	F.	I.	20 46 3.12	− 0.20	− 0.45	D.	S.	− 18 23 42.3	− 1.1	− 2.3
16	9 31 3.3	Y.	I.	23 13 37.35	− 0.34	− 0.38	F.	S.	− 8 36 15.1	− 2.2	− 5.0
18	. . . .	.	.	. . . .	. .	. .	F.	S.	− 0 6 30.0	− 6.8	− 10.5
20	12 18 44.4	Y.	II.	2 17 32.61	− 0.40	− 0.55					
Nov. 8	4 17 0.1	Y.	I.	19 29 23.27	− 0.65	− 0.52					
10	5 58 21.4	B.	I.	21 18 54.31	− 0.63	− 0.53	D.	S.	− 17 4 13.0	+ 5.3	+ 2.8
11	6 44 42.0	Y.	I.	22 9 19.11	− 0.51	− 0.37	B.	S.	+ 13 55 15.8	− 6.0	− 8.3
15	9 34 1.3	B.	I.	1 14 52.42	− 0.47	− 0.51	F.	S.	+ 2 37 25.6	− 2.3	+ 0.2
17	10 59 43.4	E.	I.	2 48 41.72	− 0.12	− 0.61	F.	S.	+ 11 5 26.8	− 2.6	− 0.6
18	11 45 17.4	Y.	II.	3 38 19.78	− 0.51	− 0.76					
Dec. 7	3 49 17.8	Y.	I.	20 55 56.52	+ 0.03	− 0.13					
8	4 37 58.7	Y.	I.	21 48 41.99	− 0.35	− 0.37					
10	6 7 6.3	B.	I.	23 25 57.33	− 0.76	− 0.55	F.	S.	− 7 58 52.2	− 1.5	− 1.0

JUPITER.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
1869.			h. m. s.	s.	s.	s.			° ′ ″	″	″	″
Nov. 2	V.	.	2 58 2.48	+ 0.42	1.71	— 0.01						
4	Y.	.	2 57 3.48	+ 0.30	1.66	— 0.06						
6	Y.	.	2 55 58.44	+ 0.23	1.74	+ 0.02	B.	.	+ 15 24 7.6	— 2.6	23.6	— 0.5
15	B.	.	2 51 8.32	+ 0.25	1.69	— 0.02	F.	.	+ 15 4 4.1	— 3.6	25.8	+ 1.8
17	E.	.	2 50 5.70	+ 0.39	1.68	— 0.03	F.	.	+ 14 59 44.7	— 3.7	25.5	+ 1.5
24	B.	.	2 46 35.00	+ 0.16	1.50	— 0.19	F.					
25	Y.	.	2 46 6.51	+ 0.27	1.71	+ 0.02	D.	.	+ 14 43 21.7	— 4.2	24.7	+ 2.6
Dec. 1	.	.	. . . .	. .	. .	. .	F.	.	+ 14 32 26.4	— 2.9	23.0	+ 0.5
3	B.	.	2 42 34.64	+ 0.16	1.44	— 0.22	F.	.	+ 14 29 8.2	— 1.6	26.6	+ 3.2
9	Y.	.	2 40 19.88	+ 0.28	1.69	+ 0.03	D.	.	+ 14 20 17.2	— 2.5	23.3	+ 0.2
10	B.	.	2 39 59.57	+ 0.16	1.71	+ 0.06	F.	.	+ 14 18 57.2	— 5.0	26.8	+ 3.7
23	Y.	.	2 36 42.47	+ 0.08	1.73	+ 0.15	D.	.	+ 14 7 24.4	— 2.8	25.0	+ 2.7
28	B.	.	2 36 1.60	+ 0.44	1.43	— 0.14	D.	.	+ 14 5 42.4	— 2.8	22.9	+ 0.9
29	Y.	.	2 35 55.52	+ 0.19	1.55	— 0.02	F.	.	+ 14 5 34.3	— 2.0	23.4	+ 1.5
30	Y.	.	2 35 50.52	+ 0.22	1.56	— 0.01	F.	.	+ 14 5 28.1	. .	22.5	+ 0.7
31	Y.	.	2 35 46.33	+ 0.24	1.50	— 0.06						

SATURN.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
June 18	E.	.	16 46 22.28	— 0.48	0.70	+ 0.04						
19	Y.	.	16 46 4.67	— 0.30	0.60	— 0.06						
July 3	Y.	.	16 42 14.25	— 0.56	0.25	— 0.40						
6	Y.	.	16 41 31.23	— 0.02	0.60	— 0.05	B.	R.	— 20 32 40.8	— 3.1	11.5	
9	Y.	.	16 40 49.98	— 0.18	0.59	— 0.06	D.	.	— 20 31 52.5	— 0.5	10.1	
13	.	.	. . . .	. .	. .	. .	B.	R.	— 20 30 56.2	+ 4.2	10.4	
16	.	.	. . . .	. .	. .	. .	D.	R.	— 20 30 25.7	+ 3.1	10.4	
20	Y.	.	16 38 43.18	— 0.22	0.54	— 0.10	B.	R.	— 20 29 51.9	+ 4.9	6.6	
21	F.	.	16 38 33.80	— 0.09	0.66	+ 0.02	B.	R.	— 20 29 45.4	+ 5.3	11.3	
22	Y.	.	16 38 24.60	— 0.13	0.55	— 0.09	B.	R.	— 20 29 36.7	+ 8.6	11.7	
24	Y.	.	16 38 7.40	— 0.10	0.53	— 0.11						
26	F.	.	16 38 52.12	+ 0.39	0.68	+ 0.05						
27	Y.	.	16 37 44.31	— 0.09	0.58	— 0.05						
28	Y.	.	16 37 37.30	— 0.15	0.58	— 0.05						
29	Y.	.	16 37 30.76	— 0.11	0.59	— 0.04	B.	R.	— 20 29 15.5	+ 14.1	10.6	
30	Y.	.	16 37 24.50	— 0.17	0.59	— 0.04						

NEPTUNE.

Date.	Observer.	Limb.	Apparent Right Ascension of Center.	Corr'n to Am. Eph.	Sidereal Time of Transit of Semi-diameter.	Corr'n to Am. Eph.	Observer.	Limb.	Geocentric Declination of Center.	Corr'n to Am. Eph.	Vertical Semi-diam.	Corr'n to Am. Eph.
Sept. 27	Y.	.	1 10 56.78	+ 0.14								
29	F.	.	1 10 44.68	+ 0.06								
Oct. 1	F.	.	1 10 32.41	+ 0.09								
28	.	.	. . . .	. .	. .	. .	B.	.	+ 5 21 48.7	— 0.5		
29	.	.	. . . .	. .	. .	. .	F.	.	+ 5 21 16.0	+ 1.5		
Nov. 4	Y.	.	1 8 7.50	— 0.03	. .	. .	B.	.	+ 5 17 50.5	— 2.1		
6	Y.	.	1 6 56.78	+ 0.11								
8	.	.	. . . .	. .	. .	. .	D.	.	+ 5 15 47.6	+ 1.3		
10	.	.	. . . .	. .	. .	. .	D.	.	+ 5 14 49.3	+ 3.3		
11	.	.	. . . .	. .	. .	. .	B.	.	+ 5 14 18.0	+ 1.6		
24	.	.	. . . .	. .	. .	. .	F.	.	+ 5 8 43.5	+ 0.1		
25	.	.	. . . .	. .	. .	. .	D.	.	+ 5 8 24.1	+ 2.1		
Dec. 3	B.	.	1 5 0.63	— 0.03	. .	. .	F.	.	+ 5 5 58.5	+ 3.9		
9	Y.	.	1 4 44.75	+ 0.05	. .	. .	F.	.	+ 5 4 36.8	+ 2.8		
10	B.	.	1 4 42.30	— 0.14	. .	. .	F.	.	+ 5 4 25.5	+ 2.3		
23	Y.	.	1 4 24.25	+ 0.06	. .	. .	F.	.	+ 5 3 15.7	+ 2.6		
28	B.	.	1 4 22.86	+ 0.06	. .	. .	D.	.	+ 5 3 23.2	+ 1.4		
29	Y.	.	1 4 22.86	— 0.04	. .	. .	F.	.	+ 5 3 28.8	+ 2.9		
30	.	.	. . . .	. .	. .	. .	D.	.	+ 5 3 32.0	+ 1.2		

CONSTANTS FOR THE REDUCTION OF FIXED STARS.

These constants have been prepared from the Logarithms A, B, C, and D of the American Ephemeris and Nautical Almanac for the year 1869. The epoch to which the observations are reduced by them is 1870.0. The instant, 1870.0, is assumed to be January 0*d*.165, mean time, Washington, the moment when the Sun's mean longitude was 280°. The notation and form of publication is similar to that published in Volume III of the Washington Observations, and the auxiliary tables used in the eductions are similar to those of that volume.

CONSTANTS FOR THE REDUCTION OF FIXED STARS.

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.	Sid. T.	G.	H.	Diff.	Log. g.	Log. h.	Log. i.	Diff.	f.	t.	p.	☽	☽ − Γ′.
1869.	h.	h. m. s.	h. m. s.						s.	y.			
Jan. 1	6.79	22 52 0	11 16 8	224	1.4061	1.3091	0.2256	350	+ 3.732	+ 0.995			
2	6.86	51 57	11 12 24	228	1.4050	1.3088	0.2606	324	3.721	0.992			
3	6.92	51 55	11 8 36	224	1.4038	1.3086	0.2930	300	3.711	0.989			
4	6.99	51 52	11 4 52	228	1.4026	1.3083	0.3230	279	3.700	0.987			
5	7.05	51 49	11 1 4	228	1.4014	1.3080	0.3509	260	3.690	0.984			
6	7.12	51 47	10 57 16	228	1.4002	1.3076	0.3769	244	3.680	0.981			
7	7.18	51 46	10 53 28	228	1.3991	1.3073	0.4013	231	3.670	0.978			
8	7.25	51 45	10 49 40	228	1.3979	1.3069	0.4244	217	3.660	0.976			
9	7.31	51 44	10 45 52	228	1.3967	1.3065	0.4461	206	3.650	0.973			
10	7.38	51 43	10 42 4	232	1.3955	1.3061	0.4667	196	3.640	0.970			
11	7.45	51 43	10 38 12	228	1.3943	1.3057	0.4863	184	3.630	0.967			
12	7.51	51 43	10 34 24	232	1.3932	1.3052	0.5047	177	3.620	0.965			
13	7.58	51 44	10 30 32	228	1.3920	1.3048	0.5224	168	3.610	0.962			
14	8.64	51 44	10 26 44	232	1.3908	1.3043	0.5392	160	3.601	0.959			
15	8.71	51 45	10 22 52	232	1.3896	1.3038	0.5552	153	3.591	0.956			
16	7.78	51 46	10 19 0	232	1.3884	1.3033	0.5705	148	3.582	0.954			
17	7.84	51 48	10 15 8	232	1.3872	1.3028	0.5853	140	3.572	0.951			
18	7.91	51 50	10 11 16	232	1.3861	1.3022	0.5993	136	3.563	0.948			
19	7.97	51 53	10 7 24	236	1.3850	1.3017	0.6129	129	3.554	0.946			
20	8.04	51 56	10 3 28	232	1.3839	1.3011	0.6258	125	3.545	0.943			
21	8.11	51 59	9 59 36	236	1.3828	1.3006	0.6383	119	3.536	0.940			
22	8.17	52 2	9 55 40	236	1.3816	1.3000	0.6502	112	3.527	0.937			
23	8.24	52 5	9 51 44	236	1.3805	1.2994	0.6617	111	3.518	0.934			
24	8.30	52 9	9 47 48	236	1.3793	1.2988	0.6728	107	3.509	0.932			
25	8.37	52 13	9 43 52	240	1.3782	1.2982	0.6835	102	3.500	0.929			
26	8.43	52 17	9 39 52	236	1.3771	1.2976	0.6937	99	3.492	0.926			
27	8.50	52 21	9 35 56	240	1.3760	1.2969	0.7036	95	3.483	0.924			
28	8.56	52 26	9 31 56	236	1.3749	1.2963	0.7131	92	3.475	0.921			
29	8.63	52 31	9 28 0	240	1.3738	1.2956	0.7223	89	3.467	0.918			
30	8.69	52 36	9 24 0	240	1.3727	1.2950	0.7312	86	3.459	0.915			
31	8.76	52 42	9 20 0	240	1.3717	1.2943	0.7398	83	3.451	0.913			
Feb. 1	8.83	52 47	9 16 0	240	1.3706	1.2937	0.7481	79	3.443	0.910			
2	8.89	52 53	9 12 0	244	1.3696	1.2930	0.7560	77	3.435	0.907			
3	8.96	52 59	9 7 56	244	1.3685	1.2923	0.7637	74	3.427	0.904			
4	9.02	53 4	9 3 52	244	1.3675	1.2917	0.7711	72	3.419	0.902			
5	9.09	53 10	8 59 48	244	1.3665	1.2910	0.7783	69	3.411	0.899			
6	9.16	53 16	8 55 44	244	1.3655	1.2903	0.7852	66	3.403	0.896			
7	9.22	53 22	8 51 40	248	1.3645	1.2897	0.7918	65	3.396	0.894			
8	9.29	53 29	8 47 32	244	1.3635	1.2890	0.7983	61	3.388	0.891			
9	9.35	53 35	8 43 28	248	1.3625	1.2884	0.8044	60	3.381	0.888			
10	9.42	53 42	8 39 20	248	1.3615	1.2877	0.8104	58	3.374	0.885			
11	9.49	53 48	8 35 12	248	1.3606	1.2871	0.8162	55	3.367	0.882			
12	9.55	53 55	8 31 4	248	1.3596	1.2864	0.8217	54	3.360	0.880			
13	9.62	54 1	8 26 56	248	1.3587	1.2858	0.8271	51	3.353	0.877			
14	9.68	54 7	8 22 48	252	1.3577	1.2852	0.8322	50	3.346	0.874			
15	9.74	54 14	8 18 36	252	1.3568	1.2846	0.8372	47	3.340	0.872			
16	9.81	54 20	8 14 24	252	1.3559	1.2839	0.8419	46	3.333	0.869			
17	9.87	54 27	8 10 12	252	1.3550	1.2833	0.8465	44	3.327	0.866			
18	9.94	54 33	8 6 0	252	1.3541	1.2827	0.8509	42	3.320	0.863			
19	10.00	54 39	8 1 48	252	1.3532	1.2821	0.8551	40	3.314	0.861			
20	10.07	54 45	7 57 36	252	1.3523	1.2816	0.8591	39	3.308	0.858			
21	10.14	54 51	7 53 24	256	1.3514	1.2810	0.8629	37	3.302	0.855			
22	10.20	54 56	7 49 8	252	1.3506	1.2805	0.8666	35	3.296	0.852			
23	10.27	55 2	7 44 56	256	1.3498	1.2800	0.8701	34	3.290	0.850			
24	10.33	55 7	7 40 40	256	1.3489	1.2794	0.8735	32	3.284	0.847			
25	10.40	55 12	7 36 24	256	1.3480	1.2789	0.8767	31	3.278	0.844			
26	10.47	55 17	7 32 8	256	1.3472	1.2785	0.8798	29	3.272	0.842			
27	10.53	55 22	7 27 52	256	1.3463	1.2780	0.8827	27	3.266	0.839			
28	10.60	22 55 26	7 23 36		1.3455	1.2775	0.8854		+ 3.261	+ 0.836			

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.		Sid. T.	G.	H.		Log. g.	Log. h.	Log. i.		f.	t.	p.	☽	☽ − Γ'.
1869.		h.	h. m. s.	h. m. s.						s.	y.		°	°
March	1	10.66	22 55 31	7 19 18		1.3448	1.2771	0.8880		+ 3.255	+ 0.833			
	2	10.73	55 35	7 15 0	258	1.3440	1.2767	0.8904	24	3.249	0.830			
	3	10.79	55 39	7 10 42	258	1.3433	1.2763	0.8927	23	3.244	0.828			
	4	10.86	55 42	7 6 24	258	1.3425	1.2760	0.8948	21	3.238	0.825			
	5	10.93	55 46	7 2 6	258	1.3417	1.2756	0.8968	20	3.233	0.822			
	6	11.00	55 49	6 57 48	258	1.3410	1.2753	0.8987	19	3.228	0.820			
	7	11.06	55 52	6 53 30	258	1.3402	1.2750	0.9004	17	3.222	0.817			
	8	11.13	55 54	6 49 6	264	1.3395	1.2747	0.9020	16	3.217	0.814			
	9	11.19	55 56	6 44 48	258	1.3387	1.2744	0.9035	15	3.211	0.811			
	10	11.26	55 58	6 40 30	258	1.3380	1.2742	0.9048	13	3.206	0.809			
	11	11.33	56 0	6 36 6	264	1.3373	1.2740	0.9059	11	3.201	0.806			
	12	11.39	56 1	6 31 48	258	1.3366	1.2738	0.9070	11	3.195	0.803			
	13	11.46	56 2	6 27 30	258	1.3359	1.2736	0.9079	9	3.190	0.800			
	14	11.52	56 2	6 23 6	264	1.3352	1.2735	0.9087	8	3.185	0.798			
	15	11.59	56 2	6 18 48	258	1.3345	1.2733	0.9093	6	3.180	0.795			
	16	11.66	56 2	6 14 30	258	1.3338	1.2732	0.9098	5	3.175	0.792			
	17	11.72	56 1	6 10 6	264	1.3331	1.2732	0.9101	3	3.170	0.789			
	18	11.79	55 59	6 5 48	258	1.3324	1.2731	0.9104	3	3.165	0.787			
	19	11.85	55 57	6 1 30	258	1.3317	1.2731	0.9105	1	3.160	0.784			
	20	11.92	55 55	5 57 12	258	1.3310	1.2731	0.9105	0	3.155	0.781			
	21	11.98	55 53	5 52 54	258	1.3303	1.2732	0.9103	2	3.150	0.788			
	22	12.05	55 50	5 48 30	264	1.3296	1.2732	0.9101	2	3.145	0.776			
	23	12.11	55 47	5 44 12	258	1.3290	1.2733	0.9097	4	3.140	0.773			
	24	12.18	55 44	5 39 54	258	1.3283	1.2734	0.9091	6	3.135	0.770			
	25	12.24	55 40	5 35 30	264	1.3276	1.2735	0.9084	7	3.130	0.767			
	26	12.31	55 36	5 31 18	258	1.3270	1.2737	0.9076	8	3.125	0.765			
	27	12.37	55 31	5 27 0	258	1.3263	1.2738	0.9067	9	3.120	0.762			
	28	12.44	55 25	5 22 42	258	1.3257	1.2740	0.9057	10	3.115	0.759			
	29	12.50	55 19	5 18 24	258	1.3250	1.2742	0.9045	12	3.110	0.757			
	30	12.57	55 13	5 14 6	258	1.3244	1.2745	0.9032	13	3.105	0.754			
	31	12.64	55 7	5 9 54	252	1.3237	1.2747	0.9017	15	3.099	0.751			
April	1	12.71	54 59	5 5 36	258	1.3230	1.2750	0.9001	16	3.094	0.748			
	2	12.77	54 51	5 1 18	258	1.3223	1.2753	0.8984	17	3.078	0.746			
	3	12.83	54 43	4 57 6	252	1.3216	1.2757	0.8966	18	3.083	0.743			
	4	12.90	54 35	4 52 54	252	1.3209	1.2760	0.8945	21	3.078	0.740			
	5	12.97	54 27	4 48 42	252	1.3202	1.2764	0.8924	21	3.072	0.737			
	6	13.04	54 18	4 44 24	258	1.3195	1.2768	0.8901	23	3.066	0.735			
	7	13.10	54 8	4 40 12	252	1.3188	1.2772	0.8877	24	3.061	0.732			
	8	13.17	53 58	4 36 0	252	1.3181	1.2776	0.8852	25	3.055	0.729			
	9	13.23	53 48	4 31 54	256	1.3174	1.2781	0.8825	27	3.050	0.726			
	10	13.30	53 37	4 27 42	252	1.3167	1.2785	0.8797	28	3.044	0.724			
	11	13.36	53 26	4 23 30	252	1.3160	1.2789	0.8767	30	3.039	0.721			
	12	13.43	53 14	4 19 24	246	1.3153	1.2794	0.8736	31	3.033	0.718			
	13	13.49	53 2	4 15 18	246	1.3146	1.2799	0.8703	33	3.027	0.716			
	14	13.56	52 50	4 11 6	252	1.3139	1.2804	0.8669	34	3.021	0.713			
	15	13.62	52 37	4 7 0	246	1.3131	1.2810	0.8633	36	3.015	0.710			
	16	13.69	52 23	4 2 54	246	1.3124	1.2815	0.8596	37	3.009	0.707			
	17	13.75	52 9	3 58 48	246	1.3116	1.2821	0.8557	39	3.003	0.705			
	18	13.82	51 55	3 54 42	246	1.3108	1.2826	0.8516	41	2.997	0.702			
	19	13.88	51 41	3 50 42	240	1.3100	1.2832	0.8474	42	2.991	0.699			
	20	13.95	51 26	3 46 36	246	1.3092	1.2838	0.8430	44	2.984	0.696			
	21	14.02	51 11	3 42 36	240	1.3084	1.2844	0.8385	45	2.978	0.694			
	22	14.08	50 56	3 38 30	246	1.3076	1.2850	0.8338	47	2.972	0.691			
	23	14.15	50 40	3 34 30	240	1.3068	1.2856	0.8289	49	2.965	0.688			
	24	14.21	50 24	3 30 30	240	1.3060	1.2862	0.8238	51	2.959	0.685			
	25	14.28	50 8	3 26 30	240	1.3051	1.2868	0.8185	53	2.952	0.683			
	26	14.35	49 51	3 22 36	234	1.3043	1.2874	0.8131	54	2.945	0.680			
	27	14.41	49 34	3 18 36	240	1.3034	1.2880	0.8075	56	2.938	0.677			
	28	14.48	49 17	3 14 42	234	1.3025	1.2887	0.8016	59	2.930	0.674			
	29	14.54	49 0	3 10 42	240	1.3016	1.2893	0.7956	60	2.922	0.672			
	30	14.61	22 48 42	3 6 48	234	1.3007	1.2899	0.7893	63	+ 2.914	+ 0.669			

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.		Sid. T.	G.	H.		Log. *g*.	Log. *h*.	Log. *i*.		*f*.	*t*.	*p*.	☽	☽ − Γ′.
1869.		h.	h. m. s.	h. m. s.						s.	y.		°	°
May	1	14.68	22 48 24	3 2 54	234	1.2998	1.2906	0.7829	67	+ 2.907	+ 0.666			
	2	14.74	48 6	2 59 0	234	1.2989	1.2912	0.7762	69	2.900	0.664			
	3	14.81	47 47	2 55 6	228	1.2979	1.2919	0.7693	71	2.892	0.661			
	4	14.87	47 28	2 51 18	234	1.2969	1.2925	0.7622	74	2.884	0.658			
	5	14.94	47 9	2 47 24	234	1.2959	1.2932	0.7548	76	2.876	0.655			
	6	15.01	46 50	2 43 30	228	1.2949	1.2938	0.7472	79	2.868	0.652			
	7	15.07	46 31	2 39 42	228	1.2939	1.2944	0.7393	82	2.861	0.650			
	8	15.14	46 12	2 35 54	228	1.2929	1.2950	0.7311	86	2.853	0.647			
	9	15.20	45 53	2 32 6	228	1.2919	1.2957	0.7225	86	2.845	0.644			
	10	15.27	45 34	2 28 18	228	1.2909	1.2963	0.7139	90	2.837	0.642			
	11	15.33	45 14	2 24 30	222	1.2899	1.2969	0.7049	93	2.829	0.639			
	12	15.40	44 54	2 20 48	222	1.2888	1.2975	0.6956	97	2.820	0.636			
	13	15.46	44 33	2 17 6	228	1.2877	1.2980	0.6859	100	2.812	0.633			
	14	15.53	44 13	2 13 18	222	1.2866	1.2986	0.6759	104	2.803	0.631			
	15	15.59	43 52	2 9 36	222	1.2855	1.2992	0.6655	107	2.795	0.628			
	16	15.66	43 32	2 5 54	226	1.2844	1.2998	0.6548	111	2.786	0.625			
	17	15.73	43 12	2 2 8	228	1.2833	1.3003	0.6437	115	2.778	0.622			
	18	15.79	42 52	1 58 30	222	1.2822	1.3009	0.6322	121	2.769	0.620			
	19	15.86	42 32	1 54 48	222	1.2810	1.3014	0.6201	124	2.760	0.617			
	20	15.92	42 12	1 51 6	222	1.2799	1.3020	0.6077	129	2.751	0.614			
	21	15.99	41 52	1 47 24	216	1.2787	1.3025	0.5948	135	2.742	0.612			
	22	16.05	41 31	1 43 48	222	1.2775	1.3030	0.5813	141	2.733	0.609			
	23	16.12	41 11	1 40 6	216	1.2762	1.3034	0.5672	146	2.724	0.606			
	24	16.18	40 50	1 36 30	216	1.2750	1.3039	0.5526	152	2.715	0.603			
	25	16.25	40 30	1 32 54	212	1.2738	1.3044	0.5374	159	2.706	0.600			
	26	16.32	40 10	1 29 12	216	1.2725	1.3048	0.5215	166	2.696	0.598			
	27	16.38	39 49	1 25 36	216	1.2712	1.3052	0.5049	175	2.687	0.595			
	28	16.45	39 29	1 22 0	216	1.2698	1.3056	0.4874	183	2.677	0.592			
	29	16.51	39 9	1 18 24	210	1.2685	1.3060	0.4691	192	2.668	0.590			
	30	16.58	38 49	1 14 54	216	1.2672	1.3064	0.4499	201	2.658	0.587			
	31	16.65	38 29	1 11 18	216	1.2658	1.3068	0.4298	213	2.648	0.584			
June	1	16.71	38 9	1 7 42	216	1.2644	1.3071	0.4085	226	2.638	0.581			
	2	16.78	37 50	1 4 6	216	1.2630	1.3074	0.3859	238	2.629	0.579			
	3	16.84	37 30	1 0 30	210	1.2616	1.3078	0.3621	254	2.619	0.576			
	4	16.91	37 10	0 57 0	210	1.2602	1.3081	0.3367	271	2.610	0.573			
	5	16.98	36 51	0 53 30	216	1.2588	1.3084	0.3096	289	2.600	0.570			
	6	17.04	36 33	0 49 54	216	1.2573	1.3087	0.2807	313	2.590	0.568			
	7	17.11	36 14	0 46 18	210	1.2559	1.3089	0.2494	337	2.580	0.565			
	8	17.17	35 56	0 42 48	210	1.2544	1.3092	0.2157	367	2.570	0.562			
	9	17.24	35 37	0 39 18	210	1.2530	1.3094	0.1790	403	2.560	0.560			
	10	17.31	35 19	0 35 48	210	1.2515	1.3096	0.1387	445	2.549	0.557			
	11	17.37	35 1	0 32 18	216	1.2500	1.3098	0.0942	496	2.539	0.554			
	12	17.44	34 44	0 28 42	210	1.2484	1.3100	0.0446	562	2.529	0.551			
	13	17.50	34 27	0 25 12	210	1.2469	1.3101	9.9884	648	2.519	0.548			
	14	17.57	34 10	0 21 42	210	1.2454	1.3102	9.9236	762	2.509	0.546			
	15	17.63	33 53	0 18 12	210	1.2439	1.3103	9.8474	924	2.499	0.543			
	16	17.70	33 37	0 14 42	210	1.2424	1.3104	9.7550	1180	2.488	0.540			
	17	17.76	33 21	0 11 12	210	1.2408	1.3105	9.6370	1626	2.478	0.538			
	18	17.83	33 6	0 7 42	210	1.2392	1.3106	9.4744		2.468	0.535			
	19	17.89	32 50	0 4 12	210	1.2376	1.3106	9.2114		2.458	0.532			
	20	17.96	32 35	0 0 42	210	1.2360	1.3106	8.4298		2.448	0.529			
	21	18.03	32 21	23 57 12	210	1.2343	1.3106	9.0353*n*		2.437	0.527			
	22	18.09	32 7	23 53 42	210	1.2327	1.3106	9.3864		2.427	0.524			
	23	18.16	31 53	23 50 12	210	1.2319	1.3105	9.5789		2.417	0.521			
	24	18.22	31 39	23 46 42	210	1.2294	1.3105	9.7115		2.407	0.518			
	25	18.29	31 25	23 43 12	210	1.2277	1.3104	9.8126	820	2.397	0.516			
	26	18.35	31 12	23 39 42	210	1.2260	1.3103	9.8946	687	2.386	0.513			
	27	18.42	31 0	23 36 12	210	1.2243	1.3102	9.9633	593	2.376	0.510			
	28	18.48	30 48	23 32 42	210	1.2226	1.3100	0.0226	521	2.366	0.507			
	29	18.55	30 36	23 29 12	210	1.2209	1.3099	0.0747	463	2.356	0.505			
	30	18.62	22 30 24	23 25 42		1.2192	1.3097	0.1210*n*		+ 2.346	+ 0.502			

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.	Sid. T.	G.	H.		Log. *g*.	Log. *h*.	Log. *i*.		*f*.	*t*.	*p*.	☽	☽−Γ'.
1869.	h.	h. m. s.	h. m. s.						s.	y.		°	°
July 1	18.68	22 30 13	23 22 8		1.2175	1.3095	0.1627*n*		+ 2.336	+ 0.499			
2	18.75	30 2	23 18 40	208	1.2158	1.3093	0.2008	381	2.326	0.496			
3	18.81	29 52	23 15 8	212	1.2140	1.3091	0.2356	348	2.316	0.494			
4	18.88	29 42	23 11 36	212	1.2122	1.3088	0.2677	321	2.306	0.491			
5	18.94	29 33	23 8 6	210	1.2105	1.3086	0.2976	299	2.296	0.488			
6	19.01	29 24	23 4 32	212	1.2087	1.3083	0.3254	278	2.286	0.486			
7	19.08	29 16	23 1 0	212	1.2070	1.3080	0.3513	259	2.276	0.483			
8	19.14	29 8	22 57 30	210	1.2052	1.3077	0.3757	244	2.266	0.480			
9	19.21	29 1	22 53 54	216	1.2034	1.3073	0.3987	230	2.256	0.477			
10	19.27	28 53	22 50 18	216	1.2017	1.3070	0.4204	217	2.246	0.475			
11	19.34	28 46	22 46 48	210	1.1999	1.3066	0.4411	207	2.237	0.472			
12	19.41	28 40	22 43 2	216	1.1981	1.3062	0.4606	195	2.228	0.469			
13	19.47	28 35	22 39 36	216	1.1963	1.3058	0.4792	186	2.218	0.466			
14	19.54	28 30	22 36 6	210	1.1945	1.3054	0.4969	177	2.209	0.464			
15	19.60	28 25	22 32 30	216	1.1927	1.3050	0.5138	169	2.199	0.461			
16	19.67	28 20	22 28 54	216	1.1909	1.3046	0.5300	162	2.190	0.458			
17	19.74	28 16	22 25 18	216	1.1891	1.3041	0.5455	155	2.180	0.455			
18	19.80	28 13	22 21 40	218	1.1873	1.3037	0.5602	147	2.171	0.452			
19	19.87	28 10	22 18 0	220	1.1855	1.3032	0.5744	142	2.162	0.450			
20	19.93	28 7	22 14 24	216	1.1837	1.3027	0.5881	137	2.153	0.447			
21	20.00	28 4	22 10 44	220	1.1819	1.3022	0.6012	131	2.144	0.444			
22	20.07	28 2	22 7 6	218	1.1801	1.3017	0.6138	126	2.135	0.442			
23	20.13	28 1	22 3 28	218	1.1783	1.3011	0.6260	122	2.126	0.439			
24	20.20	28 0	21 59 48	220	1.1765	1.3006	0.6377	117	2.117	0.436			
25	20.26	27 59	21 56 8	220	1.1747	1.3001	0.6489	112	2.108	0.434			
26	20.33	27 58	21 52 28	220	1.1729	1.2995	0.6599	110	2.099	0.431			
27	20.39	27 58	21 48 42	216	1.1711	1.2989	0.6703	104	2.090	0.428			
28	20.46	27 59	21 45 4	218	1.1693	1.2984	0.6805	102	2.082	0.425			
29	20.52	28 1	21 41 20	224	1.1675	1.2978	0.6903	98	2.073	0.423			
30	20.59	28 2	21 37 36	224	1.1657	1.2972	0.6997	94	2.065	0.420			
31	20.66	28 3	21 33 54	222	1.1640	1.2966	0.7088	91	2.057	0.417			
August 1	20.72	28 5	21 30 6	228	1.1622	1.2960	0.7176	88	2.049	0.414			
2	20.79	28 8	21 26 18	228	1.1605	1.2954	0.7262	86	2.041	0.412			
3	20.85	28 11	21 22 30	228	1.1588	1.2948	0.7344	82	2.033	0.409			
4	20.92	28 14	21 18 42	228	1.1571	1.2941	0.7424	84	2.025	0.406			
5	20.98	28 17	21 14 54	228	1.1554	1.2935	0.7501	77	2.017	0.403			
6	21.05	28 20	21 11 6	228	1.1536	1.2929	0.7576	75	2.009	0.401			
7	21.11	28 24	21 7 18	228	1.1519	1.2922	0.7648	72	2.002	0.398			
8	21.18	28 27	21 3 30	228	1.1502	1.2916	0.7718	70	1.994	0.395			
9	21.24	28 31	20 59 36	234	1.1485	1.2910	0.7786	68	1.986	0.392			
10	21.31	28 35	20 55 42	234	1.1468	1.2904	0.7851	65	1.979	0.390			
11	21.38	28 39	20 51 54	228	1.1452	1.2897	0.7915	64	1.971	0.387			
12	21.44	28 43	20 48 0	234	1.1435	1.2891	0.7976	61	1.964	0.384			
13	21.51	28 48	20 44 6	234	1.1419	1.2885	0.8035	59	1.957	0.382			
14	21.57	28 52	20 40 12	234	1.1402	1.2879	0.8092	57	1.950	0.379			
15	21.64	28 57	20 36 18	234	1.1385	1.2873	0.8147	55	1.943	0.376			
16	21.71	29 2	20 32 18	240	1.1369	1.2867	0.8201	54	1.936	0.373			
17	21.77	29 7	20 28 24	234	1.1352	1.2861	0.8252	51	1.929	0.370			
18	21.82	29 12	20 24 24	240	1.1336	1.2854	0.8302	50	1.922	0.368			
19	21.90	29 17	20 20 30	234	1.1320	1.2848	0.8350	48	1.915	0.365			
20	21.97	29 23	20 16 30	240	1.1304	1.2843	0.8396	46	1.909	0.362			
21	22.04	29 28	20 12 30	240	1.1288	1.2837	0.8441	45	1.902	0.360			
22	22.10	29 33	20 8 30	240	1.1273	1.2831	0.8484	43	1.896	0.357			
23	22.17	29 38	20 4 24	246	1.1258	1.2825	0.8525	41	1.889	0.354			
24	22.23	29 43	20 0 24	240	1.1242	1.2820	0.8565	40	1.883	0.351			
25	22.30	29 48	19 56 18	246	1.1227	1.2814	0.8603	38	1.877	0.349			
26	22.37	29 53	19 52 18	240	1.1212	1.2809	0.8639	36	1.871	0.346			
27	22.43	29 58	19 48 12	246	1.1198	1.2804	0.8675	36	1.865	0.343			
28	22.50	30 2	19 44 6	246	1.1183	1.2799	0.8708	33	1.859	0.340			
29	22.56	30 7	19 40 0	246	1.1169	1.2794	0.8740	32	1.853	0.338			
30	22.63	30 11	19 35 54	246	1.1155	1.2789	0.8771	31	1.847	0.335			
31	22.69	22 30 15	19 31 48	246	1.1140	1.2784	0.8800*n*	29	+ 1.841	+ 0.332			

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.		Sid. T.	G.	Diff.	H.	Diff.	Log. *g*.	Log. *h*.	Log. *i*.	Diff.	*f*.	*t*.	*p*.	☽	☽−Γ¹.
1869.		h.	h. m. s.		h. m. s.						s.	y.		°	°
Sept.	1	22.76	22 30 18		19 27 42		1.1126	1.2780	0.8828*n*		+ 1.835	+ 0.330			
	2	22.82	30 21	3	19 23 36	246	1.1112	1.2775	0.8854	26	1.839	0.327			
	3	22.89	30 23	2	19 19 24	252	1.1099	1.2771	0.8879	25	1.824	0.324			
	4	22.95	30 26	3	19 15 18	246	1.1084	1.2767	0.8903	24	1.819	0.321			
	5	23.02	30 28	2	19 11 6	252	1.1070	1.2763	0.8925	22	1.813	0.318			
	6	23.09	30 30	2	19 6 54	252	1.1057	1.2760	0.8946	21	1.807	0.316			
	7	23.16	30 32	2	19 2 42	252	1.1044	1.2756	0.8966	20	1.812	0.313			
	8	23.22	30 34	2	18 58 30	252	1.1031	1.2753	0.8984	18	1.806	0.310			
	9	23.29	30 34	0	18 54 18	252	1.1018	1.2750	0.9001	17	1.801	0.308			
	10	23.35	30 34	0	18 50 6	252	1.1005	1.2747	0.9017	16	1.795	0.305			
	11	23.42	30 34	0	18 45 54	252	1.0992	1.2745	0.9031	14	1.780	0.302			
	12	23.48	30 33	1	18 41 42	252	1.0979	1.2743	0.9044	13	1.774	0.299			
	13	23.55	30 31	2	18 37 30	252	1.0966	1.2740	0.9056	12	1.769	0.297			
	14	23.62	30 29	2	18 33 12	258	1.0953	1.2738	0.9067	11	1.763	0.294			
	15	23.68	30 27	2	18 29 0	252	1.0940	1.2737	0.9076	9	1.758	0.291			
	16	23.75	30 24	3	18 24 42	258	1.0928	1.2735	0.9084	8	1.753	0.288			
	17	23.81	30 20	4	18 20 30	252	1.0915	1.2734	0.9091	7	1.747	0.286			
	18	23.88	30 15	5	18 16 12	258	1.0903	1.2733	0.9096	5	1.742	0.283			
	19	23.94	30 10	5	18 11 54	258	1.0890	1.2732	0.9100	4	1.737	0.280			
	20	23.91	30 4	6	18 7 42	252	1.0878	1.2732	0.9103	3	1.732	0.277			
	21	0.07	29 58	6	18 3 24	258	1.0866	1.2731	0.9105	2	1.727	0.275			
	22	0.14	29 51	7	17 59 6	258	1.0853	1.2731	0.9105	0	1.722	0.272			
	23	0.20	29 43	8	17 54 54	252	1.0841	1.2731	0.9104	1	1.716	0.269			
	24	0.27	29 34	9	17 50 36	258	1.0829	1.2732	0.9102	2	1.711	0.266			
	25	0.33	29 24	10	17 46 18	258	1.0817	1.2733	0.9099	3	1.706	0.264			
	26	0.40	29 14	10	17 42 0	258	1.0805	1.2733	0.9094	5	1.701	0.261			
	27	0.46	29 2	12	17 37 42	258	1.0793	1.2735	0.9088	6	1.695	0.258			
	28	0.53	28 50	12	17 33 30	252	1.0781	1.2736	0.9081	7	1.690	0.256			
	29	0.59	28 38	12	17 29 12	258	1.0769	1.2738	0.9072	9	1.685	0.253			
	30	0.66	28 26	12	17 24 54	258	1.0757	1.2739	0.9062	10	1.680	0.250			
Oct.	1	0.73	28 13	13	17 20 36	258	1.0746	1.2742	0.9051	11	1.675	0.247			
	2	0.79	28 59	14	17 16 18	258	1.0734	1.2744	0.9039	12	1.670	0.245			
	3	0.86	27 44	15	17 12 6	252	1.0722	1.2746	0.9025	14	1.664	0.242			
	4	0.92	27 27	17	17 7 48	258	1.0710	1.2749	0.9009	16	1.659	0.239			
	5	0.99	27 9	18	17 3 30	258	1.0698	1.2752	0.8993	16	1.653	0.236			
	6	1.06	26 50	19	16 59 18	252	1.0686	1.2755	0.8975	18	1.647	0.234			
	7	1.12	26 30	20	16 55 4	254	1.0674	1.2759	0.8955	20	1.641	0.231			
	8	1.19	26 9	21	16 50 44	260	1.0662	1.2763	0.8935	20	1.636	0.228			
	9	1.25	25 48	21	16 46 30	254	1.0650	1.2766	0.8913	22	1.630	0.225			
	10	1.32	25 26	22	16 42 16	254	1.0638	1.2770	0.8889	24	1.625	0.223			
	11	1.39	25 4	22	16 38 0	256	1.0625	1.2774	0.8864	25	1.619	0.220			
	12	1.45	24 41	23	16 33 48	252	1.0613	1.2779	0.8838	26	1.613	0.217			
	13	1.52	24 16	25	16 29 30	258	1.0600	1.2783	0.8810	28	1.607	0.214			
	14	1.58	23 50	26	16 25 18	252	1.0587	1.2788	0.8780	30	1.601	0.212			
	15	1.65	23 24	26	16 21 6	252	1.0574	1.2793	0.8749	31	1.595	0.209			
	16	1.72	22 57	27	16 16 54	252	1.0561	1.2798	0.8717	32	1.589	0.206			
	17	1.78	22 29	28	16 12 42	252	1.0548	1.2803	0.8683	34	1.583	0.204			
	18	1.85	22 0	29	16 8 30	252	1.0535	1.2808	0.8647	36	1.577	0.201			
	19	1.91	21 31	29	16 4 20	250	1.0522	1.2813	0.8609	38	1.571	0.198			
	20	1.98	21 1	30	16 0 12	248	1.0509	1.2819	0.8570	39	1.564	0.195			
	21	2.05	20 30	31	15 56 0	252	1.0496	1.2825	0.8529	41	1.558	0.193			
	22	2.11	19 58	32	15 51 54	248	1.0483	1.2830	0.8487	42	1.552	0.190			
	23	2.18	19 25	33	15 47 44	248	1.0469	1.2836	0.8443	44	1.545	0.187			
	24	2.24	18 51	34	15 43 36	248	1.0455	1.2842	0.8397	46	1.538	0.184			
	25	2.31	18 15	36	15 39 30	246	1.0441	1.2848	0.8348	49	1.531	0.182			
	26	2.37	17 38	37	15 35 24	246	1.0427	1.2854	0.8299	49	1.524	0.179			
	27	2.43	17 1	37	15 31 18	246	1.0413	1.2861	0.8247	52	1.517	0.176			
	28	2.50	16 23	38	15 27 12	246	1.0398	1.2867	0.8193	54	1.510	0.173			
	29	2.56	15 45	38	15 23 6	246	1.0383	1.2873	0.8137	56	1.503	0.171			
	30	2.63	15 6	39	15 19 0	246	1.0368	1.2880	0.8080	57	1.496	0.168			
	31	2.70	22 14 25	41	15 14 54	246	1.0353	1.2886	0.8020*n*	60	+ 1.488	+ 0.165			

EPOCH MEAN MIDNIGHT, WASHINGTON.

Date.		Sid. T.	G.		H.		Log. *g*.	Log. *h*.	Log. *i*.		*f*.	*t*.	*p*.	☽	☽ — Γ[1].
1869.		h.	h. m. s.		h. m. s.						s.	y.		°	°
Nov.	1	2.77	22 13 44	41	15 10 48	240	1.0337	1.2893	0.7957*n*	64	+ 1.481	+ 0.162			
	2	2.83	13 3	42	15 6 48	244	1.0321	1.2899	0.7893	67	1.474	0.160			
	3	2.90	12 21	43	15 2 44	242	1.0305	1.2906	0.7826	70	1.466	0.157			
	4	2.96	11 38	44	14 58 42	240	1.0289	1.2912	0.7756	71	1.458	0.154			
	5	3.03	10 54	44	14 54 42	240	1.0273	1.2919	0.7685	75	1.450	0.152			
	6	3.10	10 10	45	14 50 42	240	1.0257	1.2926	0.7610	77	1.442	0.149			
	7	3.17	9 25	46	14 46 42	240	1.0240	1.2932	0.7533	80	1.434	0.146			
	8	3.23	8 39	46	14 42 42	240	1.0223	1.2939	0.7453	83	1.426	0.143			
	9	3.30	7 53	48	14 38 42	240	1.0206	1.2945	0.7370	86	1.418	0.141			
	10	3.36	7 5	48	14 34 42	238	1.0189	1.2952	0.7284	89	1.410	0.138			
	11	3.42	6 17	49	14 30 44	236	1.0171	1.2958	0.7195	92	1.401	0.135			
	12	3.49	5 28	50	14 26 48	234	1.0153	1.2965	0.7103	96	1.393	0.132			
	13	3.55	4 38	51	14 22 54	240	1.0134	1.2971	0.7007	99	1.384	0.130			
	14	3.62	3 47	50	14 18 54	234	1.0115	1.2977	0.6908	103	1.375	0.127			
	15	3.68	2 57	52	14 15 0	234	1.0096	1.2983	0.6805	107	1.366	0.124			
	16	3.75	2 5	52	14 11 6	234	1.0077	1.2989	0.6698	111	1.357	0.121			
	17	3.81	1 13	53	14 7 12	234	1.0057	1.2995	0.6587	116	1.348	0.119			
	18	3.88	22 0 20	53	14 3 18	234	1.0037	1.3001	0.6471	120	1.339	0.116			
	19	3.94	21 59 27	54	13 59 24	234	1.0017	1.3007	0.6351	125	1.330	0.113			
	20	4.01	58 33	54	13 55 30	228	0.9997	1.3012	0.6226	130	1.321	0.110			
	21	4.08	57 39	54	13 51 42	234	0.9976	1.3018	0.6096	135	1.311	0.108			
	22	4.14	56 45	55	13 47 48	228	0.9955	1.3024	0.5961	141	1.302	0.105			
	23	4.21	55 50	55	13 44 0	234	0.9933	1.3029	0.5820	148	1.292	0.102			
	24	4.27	54 55	56	13 40 6	228	0.9911	1.3034	0.5672	154	1.283	0.100			
	25	4.34	53 59	57	13 36 18	228	0.9889	1.3039	0.5518	161	1.274	0.097			
	26	4.41	53 2	57	13 32 30	234	0.9867	1.3044	0.5357	169	1.264	0.094			
	27	4.47	52 5	58	13 28 36	228	0.9844	1.3049	0.5188	177	1.254	0.091			
	28	4.53	51 7	58	13 24 48	228	0.9821	1.3053	0.5011	187	1.244	0.088			
	29	4.60	50 9	58	13 21 0	228	0.9797	1.3058	0.4824	196	1.234	0.086			
	30	4.67	49 11	58	13 17 12	228	0.9774	1.3062	0.4628	207	1.224	0.083			
Dec.	1	4.74	48 13	59	13 13 24	228	0.9750	1.3066	0.4421	219	1.214	0.080			
	2	4.80	47 14	59	13 9 36	224	0.9725	1.3070	0.4202	231	1.204	0.078			
	3	4.87	46 15	60	13 5 52	226	0.9700	1.3073	0.3971	247	1.194	0.075			
	4	4.93	45 15	60	13 2 6	228	0.9674	1.3077	0.3724	262	1.184	0.072			
	5	5.00	44 15	61	12 58 18	228	0.9649	1.3080	0.3462	282	1.173	0.069			
	6	5.07	43 14	60	12 54 30	226	0.9623	1.3083	0.3180	303	1.162	0.067			
	7	5.13	42 14	61	12 50 44	224	0.9597	1.3086	0.2877	326	1.152	0.064			
	8	5.20	41 13	61	12 47 0	228	0.9570	1.3089	0.2551	354	1.141	0.061			
	9	5.26	40 12	61	12 43 12	224	0.9543	1.3092	0.2197	389	1.131	0.058			
	10	5.33	39 11	61	12 39 28	224	0.9516	1.3094	0.1808	428	1.120	0.056			
	11	5.40	38 10	61	12 35 44	224	0.9488	1.3096	0.1380	476	1.109	0.053			
	12	5.46	37 9	62	12 32 0	228	0.9460	1.3098	0.0904	537	1.099	0.050			
	13	5.53	36 7	62	12 28 12	224	0.9431	1.3100	0.0367	612	1.088	0.048			
	14	5.59	35 5	62	12 24 28	224	0.9402	1.3101	9.9755	719	1.077	0.045			
	15	5.66	34 3	62	12 20 44	224	0.9373	1.3103	9.9036	861	1.066	0.042			
	16	5.72	33 1	61	12 17 0	224	0.9343	1.3104	9.8175		1.055	0.039			
	17	5.79	32 0	62	12 13 16	224	0.9313	1.3105	9.7100		1.045	0.036			
	18	5.85	30 58	61	12 9 32	224	0.9282	1.3105	9.5668		1.034	0.034			
	19	5.92	29 57	62	12 5 48	224	0.9251	1.3106	9.3509		1.023	0.031			
	20	5.98	28 55	62	12 2 4	224	0.9221	1.3106	8.8998		1.012	0.028			
	21	6.05	27 53	61	11 58 20	224	0.9190	1.3106	8.8135		1.001	0.026			
	22	6.12	26 52	62	11 54 36	224	0.9158	1.3106	9.3222		0.990	0.023			
	23	6.18	25 50	62	11 50 52	228	0.9126	1.3105	9.5491		0.979	0.020			
	24	6.25	24 48	62	11 47 4	224	0.9093	1.3104	9.6977		0.968	0.017			
	25	6.31	23 46	62	11 43 20	224	0.9060	1.3104	9.8082*n*	881	0.957	0.015			
	26	6.38	22 44	61	11 39 36	224	0.9027	1.3102	9.8963	729	0.947	0.012			
	27	6.44	21 43	62	11 35 52	224	0.8993	1.3101	9.9692	625	0.936	0.009			
	28	6.51	20 41	62	11 32 8	228	0.8959	1.3100	0.0317	541	0.926	0.006			
	29	6.57	19 39	62	11 28 20	224	0.8924	1.3098	0.0858	482	0.915	0.004			
	30	6.64	18 37	61	11 24 36	224	0.8889	1.3097	0.1340	433	0.904	+ 0.001			
	31	6.71	21 17 36		11 20 52		0.8854	1.3095	0.1773		+ 0.893	— 0.002			

METEOROLOGICAL OBSERVATIONS

MADE AT THE

U. S. NAVAL OBSERVATORY

DURING THE

YEAR 1869.

INTRODUCTION.

The meteorological department, during 1869, was under the charge of Professor J. R. Eastman, U. S. N., who made a daily examination of all the records and a weekly inspection of the instruments in use. In addition to his duties in the astronomical department, this officer performed all the work necessary to prepare the observations for the press. The observations were made at 0^h, 3^h, 6^h, 9^h, 12^h, 15^h, 18^h, and 21^h, Washington civil time, by the Observatory watchmen, Messrs. T. Hays, D. Horrigan, and N. Cahill, who have acquired such a degree of skill as insures reasonable accuracy in their work.

METEOROLOGICAL INSTRUMENTS.

Standard Barometer.—This barometer was made by James Green, of New York, and is used simply as a standard by which the Newman barometer is occasionally tested. Drawings and a description of this instrument will be found in the Annual Report for 1862.

Newman Barometer.—The barometer in daily use was made by Newman, and is mounted against the northern wall of the northwest room on the first floor of the Observatory. The cistern is 103 feet above the mean half-tide of the Potomac River. The cistern and tube are of glass; the internal diameter of the former being 3.0 inches, and of the latter 0.532 inch. The barometer is mounted with the usual adjustments at the top and bottom, and is attached by heavy brackets to a substantial mahogany board, which is firmly attached to the wall. The scale is attached to a brass rod, which has the usual adjustment to the surface of the mercury in the cistern. It is silvered and divided to 0.05 inch, but by means of a vernier may be read to 0.002 inch. The temperature of the mercury in the cistern is determined by a small ivory-scale thermometer, the bulb of which is constantly immersed in the mercury. The constant correction of +0.005 inch, which was determined in 1864, has been applied to all the observations in 1869, and they have also received a further correction for temperature.

Dry-Bulb Thermometer.—This is a mercurial thermometer by Green, with a bulb 1.5 inches long and 0.2 inch in diameter. It has a glass scale 12 inches long, 0.8 inch wide, and 0.1 inch thick. The divisions on the scale are engraved to half-degrees from $-30°$ to $+125°$ F. Several independent tests, in the early part of 1868, indicated that the *freezing-point* had changed its position on the scale since 1863. The following table of corrections was therefore deduced, and has been used in the reductions for this volume:

CORRECTIONS TO READINGS OF THE DRY-BULB THERMOMETER.

Scale Reading.	Correction.	Scale Reading.	Correction.	Scale Reading.	Correction.	Scale Reading.	Correction.
°	°	°	°	°	°	°	°
23	— 1.1	43	— 1.2	63	— 0.8	83	— 0.8
24	— 1.1	44	— 1.0	64	— 0.8	84	— 0.7
25	— 1.0	45	— 0.9	65	— 0.7	85	— 0.6
26	— 0.9	46	— 0.8	66	— 0.7	86	— 1.0
27	— 0.9	47	— 0.7	67	— 0.7	87	— 1.1
28	— 0.9	48	— 0.7	68	— 0.7	88	— 0.9
29	— 0.9	49	— 0.7	69	— 0.7	89	— 0.7
30	— 0.9	50	— 0.9	70	— 0.7	90	— 0.8
31	— 0.9	51	— 0.9	71	— 0.7	91	— 0.7
32	— 0.8	52	— 0.9	72	— 0.8	92	— 0.6
33	— 0.8	53	— 0.9	73	— 0.9	93	— 0.7
34	— 0.8	54	— 0.9	74	— 0.9	94	— 0.8
35	— 0.8	55	— 0.9	75	— 0.9	95	— 0.7
36	— 0.8	56	— 0.9	76	— 0.8	96	— 0.7
37	— 0.8	57	— 0.8	77	— 0.8	97	— 0.7
38	— 0.8	58	— 0.8	78	— 0.7	98	— 0.6
39	— 0.7	59	— 0.8	79	— 0.3	99	— 0.7
40	— 0.7	60	— 0.8	80	— 0.8	100	— 0.7
41	— 0.9	61	— 0.8	81	— 0.8		
42	— 1.1	62	— 0.8	82	— 0.8		

Wet-Bulb Thermometer.—This instrument is similar to the preceding in materials, construction, and dimensions. The scale extends from $-35°$ to $+115$ F°. Its bulb is covered with soft fine linen, which is kept moist by the capillary action of a bundle of fine linen fibers that communicate with water in a bird-glass placed close beside it. The linen is changed occasionally, before its free action is impaired by dust.

Maximum Thermometer.—This is a mercurial thermometer, with a bulb 1.5 inches long and 0.2 inch in diameter. The scale is of glass, 12 inches long, 0.8 inch wide, 0.1 inch thick, and is graduated to half-degrees from $-50°$ to $+120°$ F. A short distance above the bulb the internal diameter of the tube is so contracted that, while with the increase of temperature the mercury passes this point freely, with the least decrease of temperature the column is broken at the contracted point if the instrument is nearly horizontal, and the top of the column marks the highest temperature. The top of the scale is attached by a metallic clamp to a pivot, around which the instrument revolves freely in a vertical plane. This pivot is secured to a walnut board fixed to a post about three feet from the ground, and the thermometer is placed nearly horizontal by resting the scale near the bulb on a wooden pin in the board. After each observation the instrument is adjusted by removing the pin and allowing the thermometer to swing freely from the pivot at the top of the scale, which motion is sufficient to reunite the column of mercury.

Minimum Thermometer.—This is a transparent spirit-thermometer, with a round bulb about 0.5 inch in diameter. The scale is of silvered brass, 12 inches long, 1.0 inch wide, 0.06 inch thick, and is graduated to degrees from $-67°$ to $+131°$ F. Its registering index is a short, fine steel wire, inclosed in a delicate, blue glass cylinder, with a knob at the extremity furthest from the bulb of the thermometer. This cylinder is drawn toward the bulb by the decrease of temperature, but when the temperature increases the spirit flows through and around the cylinder, which remains at the lowest point reached by the spirit. After each observation the index is adjusted by means of a small magnet.

Solar Thermometer.—The mercurial solar thermometer was made by Green, and consists of a blackened spherical bulb and its tube inclosed within a bulb and cylinder of glass of the same form as the thermometer, but of about three times the diameter. Air has been exhausted from the cylinder, in the center of which the thermometer tube is fixed by cork collars, one being near each extremity. The scale is engraved on the thermometer tube, and has a range from $+5°$ to $+173°$ F. The temperature is registered in the same way as in the maximum thermometer, and after each observation the instrument is adjusted by holding it in a vertical position and gently tapping the external bulb. This thermometer rests in metallic crutches about three inches high, which are attached to a board 16 inches long and 5 inches wide. The board is painted green and placed on the grass about three yards west of the Meteorological Observatory.

METEOROLOGICAL OBSERVATORY.

In 1862 a small building for the special protection of thermometers was erected about four yards southwest of the southwest corner of the south wing of the Observatory. It is constructed of wood, and is painted white throughout. It is octagonal in form, each side being 2.4 feet wide by 6.3 feet high to the eaves. The roof is of tin, left bright on the under side. The ceiling is of thick plank, dovetailed together, and between it and the roof there is an open space communicating freely with the open air. The door is on the north side, and it, as well as the sides, is of double louver-work, with a space of three inches between the two divisions. The sides terminate one foot from the ground, and, as the building is situated on a grass-plat, under favorable circumstances the instruments should indicate correct temperature. The increasing density of the shade-trees and shrubbery in the Observatory grounds, and especially about this building, will, however, soon render some new arrangement absolutely necessary.

The dry and wet-bulb, and the maximum and minimum thermometers are within the Meteorological Observatory, and are all supported by means of arms and brackets to an upright metallic shaft, which is firmly secured to the ground in the center of the building.

The bulb of the minimum thermometer is 5.8 feet above the ground, those of the dry and wet-bulb thermometers are 4.2 feet, and that of the maximum is 3.2 feet above the ground.

A standard thermometer (Troughton and Simms, No. 1) is suspended between the dry and the wet-bulb thermometers, and is frequently read as a check on the others.

A wooden frame is attached to the sides of the building from which the self-registering thermometers which are issued to naval vessels with chronometers, are suspended for convenience in determining their errors by comparison with the standard.

From frequent comparisons it has been ascertained that the errors of the maximum, minimum, and wet-bulb thermometers are not appreciable, and the published observations are therefore the unmodified copies of the original record.

DIRECTION AND FORCE OF THE WIND.

An ordinary wind-vane revolves freely on a spindle at the top of the time-ball staff, and the direction of the wind is estimated from the known azimuths of the lines of the building.

The velocity of the wind is stated in numerals, of which 0 denotes a calm, 1 a very slight wind, and so on up to 10, which would indicate a violent hurricane. These numbers are mere estimates, and, at best are only approximative.

CLOUDS.

In the description of the prevailing forms of clouds the nomenclature of Howard is used; C., K., S., N., being the symbols for the forms which he designates *cirrus*, *cumulus*, *stratus*, *nimbus*; and the letters C. S., C. K., their combinations, indicate, *cirro-stratus*, *cirro-cumulus*, &c. The portion of the sky obscured is determined by estimate after careful scrutiny of the clouds or sky. A clear sky is denoted by 0, and a total obscuration by 10.

RAIN-GAUGE.

This instrument is placed within the inclosure for the protection of the solar thermometer. It consists of a cylinder 4.1 inches in diameter, soldered to an inverted cone, which is loaded with lead on the outside and near the apex. The cone rests in an apperture of a box, with a horizontal top, and this, aided by the weight of the lead, prevents disturbance during violent winds. The top of the gauge is 2.0 feet from the ground, and is free from all shelter even during driving rains. At the apex of the cone is a small apperture, through which the rain-water passes to a receiving bottle within the box, and is measured in a graduated glass cylinder with an internal diameter of 0.60 inch. It was examined at least once each day, and, as the apex of the cone closes the mouth of the bottle except through the small aperture, there is little or no loss by evaporation. Each inch of snow has been assumed equivalent to 0.111 inch of rain; but whenever practicable, the snow has been melted and the water measured in the gauge.

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
January 1	30.024	29.933	29.886	29.899	29.802	29.838	29.949	30.050
2	30.078	30.128	30.135	30.168	30.119	30.082	30.037	30.050
3	30.030	30.023	30.067	30.147	30.137	30.115	30.139	30.124
4	30.109	30.094	30.085	30.080	29.989	29.921	29.885	29.806
5	29.796	29.624	29.620	29.649	29.662	29.693	29.773	29.878
6	29.949	30.006	30.037	30.151	30.124	30.089	30.080	30.107
7	30.111	30.127	30.142	30.194	30.135	30.103	30.120	30.138
8	30.126	30.125	30.117	30.152	30.088	30.025	30.026	30.017
9	29.974	29.941	29.921	29.905	29.816	29.769	29.758	29.718
10	29.688	29.731	29.794	29.909	29.944	29.985	30.088	30.132
11	30.138	30.160	30.130	30.085	29.931	29.785	29.550	29.370
12	29.367	29.420	29.541	29.751	29.831	29.916	30.026	30.099
13	30.140	30.187	30.258	30.322	30.306	30.260	30.248	30.246
14	30.197	30.183	30.171	30.211	30.139	30.072	30.078	30.051
15	29.980	29.938	29.878	29.853	29.744	29.692	29.676	29.674
16	29.658	29.686	29.840	30.007	30.043	30.085	30.150	30.185
17	30.182	30.179	30.141	30.130	30.040	30.000	30.026	30.056
18	30.051	30.060	30.066	30.094	30.080	30.039	30.049	30.055
19	30.044	30.051	30.074	30.128	30.110	30.085	30.099	30.082
20	29.990	29.896	29.812	29.804	29.760	29.812	29.932	29.958
21	29.970	29.954	29.931	29.921	29.808	29.749	29.755	29.767
22	29.786	29.796	29.804	29.880	29.885	29.905	30.011	30.088
23	30.056	30.050	30.018	30.010	29.930	29.834	29.820	29.826
24	29.807	29.743	29.766	29.771	29.700	29.582	29.583	29.595
25	29.568	29.598	29.619	29.699	29.727	29.768	29.906	29.988
26	30.053	30.113	30.128	30.184	30.161	30.130	30.169	30.206
27	30.215	30.209	30.193	30.179	30.072	30.005	29.960	29.925
28	29.896	29.909	29.893	29.819	29.960	29.953	30.019	30.055
29	30.054	30.040	30.022	30.016	29.909	29.824	29.815	29.763
30	29.708	29.640	29.614	29.639	29.614	29.605	29.712	29.779
31	29.816	29.844	29.884	29.962	29.976	30.022	30.082	30.151
Hourly means.	29.954	29.948	29.954	29.991	29.953	29.927	29.952	29.966

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
February 1	30.114	30.266	30.355	30.396	30.396	30.362	30.382	30.399
2	30.389	30.390	30.373	30.406	30.364	30.251	30.181	30.073
3	29.956	29.749	29.600	29.540	29.452	29.310	29.240	29.194
4	29.108	29.050	29.060	29.169	29.293	29.388	29.506	29.604
5	29.632	29.641	29.656	29.676	29.794	29.835	29.978	30.052
6	30.117	30.156	30.194	30.209	30.202	30.143	30.155	30.151
7	30.161	30.171	30.208	30.262	30.276	30.290	30.324	30.367
8	30.377	30.376	30.367	30.383	30.303	30.211	30.182	30.178
9	30.157	30.134	30.096	30.097	30.040	29.968	29.950	29.918
10	29.844	29.794	29.820	29.877	29.902	29.904	29.965	30.003
11	30.028	30.021	30.052	30.087	30.030	30.032	30.114	30.186
12	30.223	30.233	30.243	30.282	30.225	30.152	30.151	30.120
13	30.100	30.082	30.072	30.075	30.033	29.944	29.942	29.941
14	29.907	29.898	29.896	29.917	29.885	29.800	29.738	29.782
15	29.611	29.514	29.510	29.530	29.484	29.451	29.512	29.578
16	29.574	29.589	29.609	29.668	29.661	29.682	29.729	29.761
17	29.761	29.748	29.724	29.721	29.629	29.499	29.428	29.349
18	29.312	29.288	29.386	29.439	29.482	29.447	29.501	29.554
19	29.575	29.481	29.433	29.506	29.672	29.722	29.830	29.890
20	29.905	29.926	29.955	29.929	29.852	29.791	29.814	29.887
21	29.923	29.942	29.962	30.000	29.962	29.891	29.889	29.870
22	29.830	29.789	29.779	29.788	29.763	29.678	29.639	29.607
23	29.500	29.325	29.219	29.120	29.204	29.328	29.593	29.785
24	29.911	29.996	30.080	30.142	30.141	30.134	30.209	30.335
25	30.387	30.400	30.424	30.492	30.419	30.328	30.286	30.246
26	30.161	30.046	30.002	29.917	29.804	29.728	29.699	29.749
27	29.794	29.820	29.841	29.859	29.871	29.872	29.969	30.062
28	30.116	30.121	30.160	30.240	30.221	30.161	30.168	30.216
Hourly Means.	29.910	29.891	29.896	29.919	29.906	29.868	29.896	29.923

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
March 1	30.232	30.224	30.221	30.204	30.115	30.021	29.969	29.970
2	29.921	29.807	29.760	29.740	29.701	29.675	29.762	29.812
3	29.869	29.907	29.993	30.083	30.085	30.075	30.054	30.057
4	30.021	29.948	29.901	29.891	29.861	29.820	29.909	30.005
5	30.091	30.137	30.164	30.180	30.103	30.015	29.907	29.895
6	29.816	29.743	29.734	29.721	29.804	29.931	30.079	30.214
7	30.304	30.381	30.440	30.517	30.503	30.420	30.382	30.368
8	30.305	30.266	30.264	30.283	30.234	30.201	30.203	30.167
9	30.181	30.154	30.192	30.244	30.214	30.131	30.124	30.133
10	30.072	29.949	29.866	29.748	29.617	29.489	29.456	29.503
11	29.655	29.823	29.993	30.084	30.022	29.984	29.972	29.951
12	29.898	29.918	29.929	30.005	30.029	29.933	29.842	29.840
13	29.810	29.781	29.794	29.834	29.792	29.737	29.759	29.764
14	29.787	29.802	29.826	29.841	29.790	29.730	29.717	29.703
15	29.651	29.669	29.781	29.919	30.014	30.062	30.114	30.178
16	30.227	30.256	30.321	30.353	30.317	30.243	30.212	30.208
17	30.176	30.149	30.160	30.162	30.102	30.043	30.044	30.094
18	30.147	30.220	30.276	30.351	30.317	30.272	30.255	30.268
19	30.277	30.254	30.234	30.199	30.111	30.036	29.957	29.852
20	29.736	29.610	29.503	29.486	29.485	29.509	29.588	29.707
21	29.818	29.875	29.966	30.088	30.119	30.120	30.212	30.292
22	30.339	30.355	30.399	30.406	30.374	30.265	30.215	30.066
23	30.002	29.933	29.944	30.003	30.056	30.092	30.113	30.154
24	30.165	30.166	30.200	30.232	30.192	30.153	30.208	30.243
25	30.238	30.286	30.325	30.353	30.326	30.252	30.253	30.260
26	30.187	30.149	30.121	30.065	30.000	29.902	29.827	29.822
27	29.833	29.850	29.902	29.975	29.946	29.910	29.934	29.986
28	29.983	29.994	30.021	30.045	30.006	29.930	29.940	29.888
29	29.790	29.711	29.624	29.569	29.527	29.485	29.515	29.545
30	29.585	29.509	29.491	29.476	29.440	29.440	29.519	29.588
31	29.626	29.656	29.719	29.737	29.748	29.781	29.816	29.883
Hourly means.	29.992	29.983	30.002	30.026	29.998	29.957	29.963	29.981

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
April 1	29.870	29.876	29.878	29.901	29.845	29.751	29.712	29.711
2	29.668	29.621	29.647	29.671	29.629	29.595	29.609	29.672
3	29.754	29.784	29.838	29.877	29.868	29.841	29.895	29.939
4	29.919	29.902	29.902	29.881	29.873	29.815	29.835	29.878
5	29.827	29.851	29.861	29.871	29.779	29.672	29.634	29.627
6	29.633	29.617	29.688	29.679	29.634	29.625	29.663	29.735
7	29.743	29.738	29.733	29.769	29.742	29.746	29.799	29.871
8	29.892	29.808	29.928	29.918	29.861	29.791	29.788	29.833
9	29.879	29.897	29.941	29.973	29.948	29.905	29.920	29.951
10	29.977	30.005	30.055	30.056	30.027	29.982	29.979	29.992
11	29.978	29.923	29.912	29.886	29.885	29.862	29.876	29.896
12	29.894	29.665	29.895	29.914	29.895	29.841	29.830	29.866
13	29.851	29.834	29.840	29.868	29.854	29.844	29.854	29.922
14	29.950	29.968	30.028	30.104	30.102	30.101	30.166	30.224
15	30.260	30.292	30.309	30.321	30.286	30.207	30.173	30.213
16	30.217	30.196	30.209	30.219	30.153	30.049	30.002	29.994
17	29.916	29.857	29.826	29.861	29.851	29.856	29.905	29.949
18	29.967	29.918	29.982	29.948	29.913	29.846	29.792	29.778
19	29.751	29.728	29.718	29.703	29.679	29.680	29.681	29.700
20	29.698	29.672	29.642	29.631	29.519	29.409	29.434	29.401
21	29.409	29.465	29.525	29.609	29.617	29.627	29.667	29.784
22	29.863	29.949	30.011	30.089	30.100	30.059	30.064	30.095
23	30.115	30.112	30.138	30.146	30.107	30.028	29.982	29.968
24	29.928	29.927	29.949	29.953	29.947	29.892	29.850	29.850
25	29.858	29.894	29.951	29.993	30.020	30.038	30.045	30.098
26	30.128	30.094	30.098	30.096	30.017	29.931	29.915	29.928
27	29.926	29.904	29.934	29.923	29.893	29.822	29.797	29.824
28	29.846	29.869	29.887	29.871	29.810	29.725	29.656	29.687
29	29.606	29.574	29.567	29.535	29.559	29.612	29.740	29.836
30	29.875	29.887	29.923	29.944	29.937	29.907	29.902	29.898
Hourly means.	29.873	29.861	29.894	29.907	29.878	29.835	29.839	29.871

Mean Time.		0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.		in.	in.	in.	in.	in.	in.	in.	in.
May	1	29.864	29.745	29.693	29.659	29.510	29.489	29.465	29.472
	2	29.417	29.349	29.260	29.239	29.248	29.293	29.369	29.489
	3	29.501	29.522	29.556	29.569	29.575	29.573	29.643	29.733
	4	29.737	29.730	29.734	29.730	29.694	29.663	29.678	29.735
	5	29.758	29.775	29.787	29.819	29.778	29.759	29.775	29.855
	6	29.888	29.890	29.927	29.952	29.930	29.897	29.919	29.926
	7	29.899	29.899	29.912	29.933	29.922	29.908	29.925	29.926
	8	29.899	29.867	29.889	29.929	29.931	29.905	29.881	29.897
	9	29.846	29.834	29.872	29.877	29.877	29.819	29.793	29.819
	10	29.813	29.818	29.835	29.858	29.841	29.802	29.822	29.864
	11	29.871	29.864	29.889	29.891	29.854	29.795	29.765	29.793
	12	29.794	29.782	29.803	29.796	29.876	29.724	29.694	29.703
	13	29.653	29.596	29.580	29.528	29.457	29.391	29.393	29.435
	14	29.434	29.402	29.392	29.379	29.365	29.334	29.344	29.377
	15	29.400	29.400	29.458	29.483	29.501	29.490	29.499	29.551
	16	29.559	29.539	29.548	29.523	29.501	29.439	29.531	29.603
	17	29.636	29.651	29.676	29.704	29.705	29.690	29.744	29.796
	18	29.812	29.832	29.854	29.841	29.820	29.770	29.754	29.780
	19	29.742	29.702	29.708	29.718	29.710	29.691	29.723	29.762
	20	29.792	29.807	29.865	29.936	29.921	29.908	29.914	29.957
	21	29.976	29.904	29.960	29.928	29.855	29.767	29.722	29.772
	22	29.712	29.664	29.655	29.685	29.718	29.724	29.700	29.745
	23	29.789	29.818	29.858	29.898	29.877	29.856	29.838	29.847
	24	29.853	29.872	29.900	29.928	29.902	29.868	29.874	29.906
	25	29.907	29.920	29.932	29.936	29.910	29.865	29.848	29.858
	26	29.826	29.813	29.842	29.838	29.816	29.770	29.740	29.787
	27	29.787	29.782	29.831	29.890	29.971	29.981	29.999	30.033
	28	30.047	30.059	30.083	30.080	30.047	29.995	29.977	30.016
	29	29.954	29.936	29.945	29.962	29.955	29.939	29.939	29.992
	30	29.960	29.946	29.966	29.968	29.956	29.900	29.906	29.905
	31	29.865	29.891	29.897	29.918	29.896	29.846	29.806	29.884
Hourly means.		29.774	29.762	29.778	29.819	29.772	29.737	29.741	29.778

Mean Time.		0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
		in.	in.	in.	in.	in.	in.	in.	in.
June	1	29.912	29.921	29.946	29.985	29.985	29.941	29.948	30.018
	2	30.046	30.047	30.017	30.076	30.086	30.068	30.069	30.100
	3	30.096	30.103	30.108	30.126	30.098	30.045	30.022	30.031
	4	30.007	29.974	29.978	29.949	29.885	29.807	29.766	29.774
	5	29.722	29.678	29.686	29.663	29.642	29.646	29.755	29.878
	6	29.958	29.971	30.053	30.112	30.094	30.074	30.097	30.135
	7	30.119	30.132	30.182	30.204	30.187	30.141	30.110	30.125
	8	30.137	30.071	30.065	30.094	30.056	30.029	30.060	30.164
	9	30.188	30.199	30.229	30.270	30.260	30.212	30.168	30.174
	10	30.160	30.103	30.057	30.031	29.969	29.929	29.894	29.920
	11	29.895	29.873	29.885	29.898	29.855	29.805	29.796	29.875
	12	29.877	29.886	29.905	29.936	29.921	29.877	29.837	29.859
	13	29.839	29.825	29.812	29.775	29.746	29.681	29.641	29.627
	14	29.602	29.581	29.599	29.571	29.584	29.584	29.572	29.599
	15	29.594	29.607	29.626	29.638	29.672	29.680	29.725	29.798
	16	20.845	29.877	29.935	29.979	29.991	29.971	29.981	30.037
	17	30.063	30.095	30.137	30.163	30.142	30.116	30.062	30.064
	18	30.041	30.044	30.046	30.057	30.018	29.967	29.949	29.969
	19	29.955	29.949	29.983	30.002	29.977	29.937	29.930	29.953
	20	29.960	29.940	29.932	29.917	29.867	29.809	29.764	29.778
	21	29.772	29.654	29.770	29.776	29.761	29.679	29.664	29.724
	22	29.730	29.703	29.725	29.752	29.763	29.770	29.780	29.860
	23	29.881	29.866	29.920	29.946	29.957	29.926	29.943	29.993
	24	30.008	30.034	30.058	30.086	30.088	30.033	30.025	30.037
	25	30.040	30.036	30.076	30.083	30.084	30.033	30.012	30.022
	26	30.009	29.983	29.997	30.019	29.981	29.922	29.920	29.935
	27	29.922	29.920	29.915	29.928	29.914	29.876	29.863	29.888
	28	29.895	29.854	29.883	29.876	29.844	29.788	29.792	29.832
	29	29.850	29.895	29.928	29.959	29.963	29.921	29.891	29.904
	30	29.869	29.841	29.802	29.777	29.727	29.697	29.730	29.813
Hourly means.		29.933	29.922	29.941	29.955	29.937	29.899	29.892	29.926

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
July 1	29.860	29.896	29.955	30.040	30.033	29.991	29.976	30.004
2	29.995	29.979	29.994	29.884	29.955	29.901	29.872	29.847
3	29.820	29.784	29.796	29.799	29.787	29.730	29.689	29.717
4	20.729	29.720	29.758	29.768	29 789	29.782	29.785	29.856
5	29.900	29.850	30.042	30.046	30.052	30.037	30.034	30.087
6	30.108	30.146	30.164	30.183	30.159	30.146	30.142	30.172
7	30.175	30.171	30.177	30.181	30.126	30.080	30.047	30.064
8	30.058	30.041	30.035	30.036	29.991	29.928	29.880	29.885
9	29.840	29.803	29.793	29.790	29.788	29.674	29.803	29.851
10	29.852	29.858	29.886	29.936	29.916	29.910	29.860	29.870
11	29.890	29.832	29.838	29.836	29.822	29.794	29.783	29.835
12	29.865	29.898	29.936	29.980	29.972	29.920	29.916	29.944
13	29.928	29.919	29.904	29.964	29.926	29.879	29.883	29.890
14	29.914	29.871	29.901	29.916	29.911	29.874	29.911	29.914
15	29.926	29.915	29.908	29.927	29.889	29.840	29.824	29.860
16	29.867	29.847	29.872	29.863	29.865	29.796	29.766	29.789
17	29.815	29.818	29.850	29.888	29.890	29.854	29.842	29.863
18	29.837	29.812	29.824	29.831	29.807	29.751	29.724	29.880
19	29.776	29.711	29.737	29.779	29.802	29.818	29.810	29.863
20	29.876	29.848	29.850	29.877	29.860	29.800	29.766	29.778
21	29.750	29.749	29.770	29.893	29.810	29.824	29.862	29.943
22	29.956	29.964	29.996	30.025	30.019	29.994	29.980	30.034
23	30.057	30.059	30.085	30.109	30.104	30.068	30.054	30.074
24	30.069	30.063	30.065	30.062	30.077	30.003	29.986	29.988
25	29.993	29.998	30.024	30.020	29.997	29.952	29.949	29.978
26	29.967	29.942	29.949	29.950	29.922	29.855	29.845	29.853
27	29.857	29.860	29.860	29.866	29.819	29.830	29.867	29.878
28	29.906	29.904	29.926	29.936	29.921	29.845	29.821	29.853
29	29.797	29.775	29.796	29.784	29.811	29.787	29.811	29.887
30	29.922	29.968	30.016	30.050	30.056	30.044	30.044	30.088
31	30.123	30.142	30.184	30.247	30.236	30.223	30.223	30.269
Hourly means.	29.917	29.908	29.932	29.951	29.939	29.901	29.895	29.929

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
August 1	30.274	30.265	30.291	30.326	30.318	30.255	30.253	30.257
2	30.245	30.237	30.227	30.211	30.128	30.040	29.995	29.995
3	29.956	29.915	29.916	29.877	29.842	29.806	29.893	29.818
4	29.830	29.838	29.843	29.875	29.850	29.806	29.842	29.752
5	29.704	29.705	29.706	29.717	29.713	29.705	29.778	29.865
6	29.917	29.954	30.003	30.068	30.070	30.043	30.030	30.085
7	30.091	30.091	30.115	30.133	30.131	30.123	30.112	30.136
8	30.151	30.157	30.181	30.205	30.178	30.129	30.112	30.135
9	30.140	30.129	30.146	30.169	30.136	30.101	30.055	30.079
10	30.085	30.064	30.065	30.078	30.040	29.993	29.963	29.996
11	30.004	29.996	29.983	29.982	29.955	29.923	29.917	29.953
12	29.976	29.973	30.004	30.037	30.018	29.981	29.960	30.004
13	30.028	30.006	30.012	30.010	29.980	29.923	29.925	29.970
14	29.988	30.003	30.023	30.047	30.020	29.960	29.932	29.953
15	29.922	29.889	29.894	29.892	29.865	29.794	29.779	29.813
16	29.810	29.818	29.837	29.873	29.870	29.844	29.835	29.899
17	29.889	29.904	29.912	29.978	29.963	29.938	29.967	30.002
18	30.022	30.012	30.045	30.065	30.075	30.025	29.991	30.030
19	30.041	30.027	30.031	30.054	30.022	29.977	29.947	29.959
20	29.951	29.948	29.945	29.946	29.901	29.851	29.836	29.866
21	29.859	29.867	29.887	29.913	29.888	29.828	29.807	29.867
22	29.855	29.879	29.903	29.954	29.951	29.910	29.938	29.996
23	30.031	30.061	30.099	30.136	30.136	30.109	30.116	30.156
24	30.141	30.142	30.160	30.197	30.168	30.115	30.104	30.109
25	30.096	30.089	30.082	30.067	30.016	29.934	29.877	29.867
26	29.859	29.837	29.890	29.931	29.938	29.922	29.925	29.983
27	30.005	29.995	30.044	30.073	30.042	29.982	29.958	29.963
28	29.967	29.966	29.970	29.957	29.900	29.820	29.788	29.880
29	29.859	29.822	29.854	29.876	29.872	29.835	29.847	29.878
30	29.880	29.891	29.922	29.953	29.946	29.918	29.911	29.961
31	29.957	29.969	29.994	30.010	29.984	29.944	29.934	29.995
Hourly means.	29.985	29.982	29.999	30.020	29.997	29.953	29.943	29.972

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
September 1	30.049	30.073	30.092	30.133	30.097	30.084	30.106	30.131
2	30.167	30.166	30.207	30.263	30.228	30.181	30.169	30.191
3	30.207	30.210	30.135	30.260	30.207	30.175	30.180	30.213
4	30.213	30.211	30.221	30.215	30.183	30.109	30.095	30.132
5	30.137	30.114	30.134	30.146	30.118	30.058	30.045	30.059
6	30.072	30:055	30.075	30.088	30.045	29.992	29.979	29.995
7	29.971	29.918	29.917	29.880	29.822	29.960	29.706	29.714
8	29.678	29.629	29.594	29.542	29.492	29.503	29.555	29.690
9	29.787	29.806	29.871	29.902	29.924	29.909	29.936	29.988
10	29.985	30.002	30.024	30.034	30.012	29.995	30.007	30.044
11	30.062	30.070	30.090	30.141	30.102	30.062	30.073	30.108
12	30.129	30.152	30.169	30.196	30.182	30.162	30.155	30.187
13	30.203	30.225	30.249	30.275	30.243	30.235	30.212	30.245
14	30.263	30.271	30.289	30.291	30.252	30.186	30.175	30.193
15	30.196	30.183	30.185	30.175	30.134	30.071	30.057	30.059
16	30.035	30.018	30.020	30.030	29.996	29.966	29.969	30.000
17	30.002	30.009	30.041	30.099	30.120	30.081	30.124	30.160
18	30.162	30.176	30.271	30.261	30.246	30.208	30.234	30.266
19	30.286	30.274	30.293	30.337	30.305	30.228	30.226	30.223
20	30.207	30.183	30.189	30.184	30.126	30.063	30.041	30.059
21	30.064	30.051	30.083	30.087	30.056	29.996	30.000	30.072
22	30.096	30.080	30.108	30.140	30.128	30.085	30.115	30.151
23	30.164	30.177	30.187	30.226	30.219	30.186	30.196	30.245
24	30.233	30.193	30.271	30.310	30.295	30.244	30.232	30.255
25	30.251	30.233	30.241	30.234	30.168	30.083	30.052	30.030
26	29.950	29.865	29.819	29.765	29.702	29.713	29.774	29.810
27	29.841	29.853	29.906	29.948	29.985	30.000	30.059	30.117
28	30.155	30.211	30.271	30.319	30.303	30.269	30.265	30.298
29	30.315	30.346	30.366	30.392	30.350	30.296	30.301	30.314
30	30.309	30.306	30.330	30.352	30.307	30.238	30.211	30.233
Hourly means.	30.106	30.102	30.122	30.141	30.111	30.078	30.075	30.106

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
October 1	30.214	30.223	30.212	30.227	30.180	30.116	30.117	30.147
2	30.104	30.092	30.087	30.079	30.034	29.968	29.946	29.934
3	29.862	29.819	29.829	29.850	29.836	29.778	29.717	29.625
4	29.509	29.481	29.477	29.488	29.451	29.483	29.571	29.658
5	29.710	29.738	29.786	29.860	29.902	29.890	29.926	29.981
6	30.011	30.026	30.042	30.094	30.068	30.018	30.022	30.054
7	30.063	30.100	30.123	30.173	30.141	30.115	30.118	30.154
8	30.164	30.172	30.202	30.237	30.207	30.166	30.163	30.183
9	30.182	30.169	30.180	30.192	30.157	30.101	30.081	30.055
10	30.035	30.016	29.968	29.933	29.886	29.843	29.854	29.866
11	29.854	29.839	29.856	29.866	29.797	29.758	29.781	29.806
12	29.788	29.774	29.764	29.736	29.671	29.622	29.616	29.606
13	29.628	29.641	29.660	29.715	29.718	29.713	29.787	29.859
14	29.876	29.883	29.889	29.891	29.770	29.703	29.708	29.738
15	29.760	29.762	29.806	29.841	29.826	29.804	29.834	29.841
16	29.860	29.844	29.892	29.937	29.909	29.872	29.907	29.917
17	29.902	29.882	29.871	29.872	29.841	29.782	29.812	29.883
18	29.913	29.948	29.980	29.997	29.987	29.974	30.017	30.295
19	30.092	30.080	30.088	30.092	30.018	29.979	30.018	30.034
20	30.022	30.048	30.064	30.094	30.058	30.018	29.999	30.015
21	30.004	29.963	29.959	29.958	29.903	29.842	29.835	29.864
22	29.879	29.899	29.959	30.024	29.991	29.982	29.981	29.966
23	29.927	29.842	29.770	29.693	29.562	29.506	29.523	29.547
24	29.636	29.740	29.846	29.964	30.015	30.040	30.106	30.189
25	30.272	30.315	30.373	30.434	30.403	30.380	30.374	30.367
26	30.337	30.291	30.296	30.292	30.172	30.077	30.056	30.106
27	30.135	30.133	30.166	30.231	30.190	30.139	30.126	30.085
28	30.027	29.957	29.882	29.812	29.685	29.596	29.564	29.582
29	29.604	29.613	29.613	29.645	29.609	29.666	29.783	29.822
30	29.848	29.868	29.910	29.989	30.013	30.026	30.082	30.112
31	30.119	30.130	30.167	30.209	30.189	30.160	30.176	30.190
Hourly means.	29.946	29.945	29.960	29.981	29.942	29.907	29.923	29.951

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
November 1	30.174	30.172	30.140	30.128	30.028	30.008	30.043	30.110
2	30.157	30.154	30.191	30.274	30.235	30.197	30.222	30.256
3	30.264	30.258	30.277	30.311	30.267	30.197	30.196	30.200
4	30.169	30.143	30.143	30.145	30.062	29.982	29.947	29.914
5	29.840	29.769	29.746	29.754	29.698	29.686	29.733	29.782
6	29.798	29.782	29.768	29.767	29.713	29.705	29.744	29.751
7	29.702	29.666	29.654	29.656	29.640	29.650	29.710	29.783
8	29.793	29.812	29.839	29.888	29.854	29.809	29.847	29.880
9	29.932	29.934	29.937	29.933	29.887	29.837	29.851	29.841
10	29.853	29.887	29.900	29.954	29.899	29.899	29.926	29.940
11	29.919	29.929	29.943	29.998	29.957	29.955	29.955	30.003
12	30.020	30.036	30.051	30.090	30.036	30.010	30.037	30.052
13	30.053	30.039	30.019	30.015	29.995	29.922	29.877	29.850
14	29.826	29.840	29.878	29.919	29.919	29.912	29.956	29.987
15	29.999	30.024	30.051	30.106	30.097	30.103	30.155	30.193
16	30.195	30.226	30.238	30.265	30.214	30.144	30.058	29.971
17	29.794	29.478	29.392	29.411	29.464	29.468	29.554	29.591
18	29.638	29.704	29.787	29.860	29.895	29.880	29.946	29.980
19	29.974	29.979	29.954	29.975	29.875	29.807	29.726	29.632
20	29.416	29.327	29.381	29.486	29.546	29.606	29.739	29.790
21	29.833	29.874	29.927	29.975	30.002	30.006	30.098	30.165
22	30.171	30.196	30.211	30.256	30.172	30.115	30.070	29.996
23	29.969	29.947	29.959	29.996	29.968	29.948	29.958	29.930
24	29.899	29.904	29.980	30.078	30.167	30.198	30.269	30.310
25	30.310	30.323	30.360	30.365	30.321	30.367	30.275	30.261
26	30.252	30.266	30.258	30.261	30.194	30.153	30.134	30.112
27	30.080	30.029	29.980	29.933	29.840	29.796	29.927	29.973
28	30.019	30.059	30.091	30.123	30.108	30.065	30.085	30.085
29	30.090	30.057	30.066	30.086	30.020	29.969	29.950	29.940
30	29.890	29.870	29.838	29.857	29.781	29.721	29.680	29.583
Hourly means.	29.968	29.956	29.965	29.995	29.962	29.937	29.956	29.962

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
December 1	29.606	29.755	29.863	29.983	29.974	30.007	30.058	30.070
2	30.041	30.036	30.031	30 049	29.946	29.884	29.902	29.921
3	29.917	29.956	30.026	30.107	30.146	30.207	30.283	30.314
4	30.349	30.364	30.323	30.307	30.199	30.104	30.044	30.003
5	29.961	29.975	29.973	29.976	29.967	29.924	29.934	29.927
6	29.886	29.855	29.841	29.841	29.821	29.862	29.974	30.036
7	30.065	30.131	30.166	30.229	30.239	30.224	30.252	30.278
8	30.296	30.323	30.342	30.400	30.389	30.405	30.469	30.506
9	30.525	30.564	30.569	30.536	30.593	30.561	30.575	30.580
10	30.585	30.572	30.547	30.553	30.457	30.354	30.333	30.298
11	30.259	30.229	30.240	30.280	30.203	30.158	30.136	30.106
12	30.064	30.003	30.021	30.037	30.036	30.037	30.117	30.158
13	30.192	30.224	30.252	30.301	30.300	30.300	30.328	30.364
14	30.360	30.371	30.377	30.415	30.375	30.348	30.338	30.355
15	30.312	30.257	30.230	30.218	30.146	30.044	29.967	29.870
16	29.756	29.708	29.671	29.709	29.743	29.785	29.851	29.944
17	29.892	30.036	30.059	30.134	30.084	30.049	30.029	29.997
18	29.915	29.760	29.639	29.391	29.149	29.047	29.277	29.480
19	29.619	29.739	29.804	29.814	29.827	29.866	29.897	29.969
20	30.003	30.061	30.099	30.130	30.118	30.183	30.233	30.324
21	30.391	30.446	30.519	30.540	30.490	30.428	30.395	30.312
22	30.189	30.053	29.914	29.858	29.746	29.693	29.662	29.731
23	29.845	29.917	30.034	30.208	30.220	30.242	30.309	30.366
24	30.397	30.436	30.472	30.521	30.505	30.486	30.517	30.541
25	30.517	30.492	30.477	30.500	30.448	30.376	30.376	30.308
26	30.246	30.155	30.085	30.069	29.982	29.986	30.029	30.058
27	30.046	30.024	30.019	30 026	29.936	29.868	29.823	29.772
28	29.647	29.589	29.646	29.713	29.687	29.714	29.783	29.804
29	29.832	29.846	29.875	29.954	29.948	29.944	29.977	29.972
30	29.919	29.881	29.845	29.853	29.833	29.838	29.897	29.960
31	29.978	30.011	30.046	30.118	30.095	30.057	30.050	30.048
Hourly means.	30.084	30.089	30.097	30.122	30.084	30.064	30.091	30.109

Mean Time. 1869. January	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
	°	°	°	°	°	°	°	°
1	32.7	32.8	33.0	33.0	34.4	35.2	32.2	29.6
2	28.4	27.8	24.4	24.9	26.7	28.1	29.6	30.1
3	30.9	30.6	31.2	31.5	32.6	33.2	34.4	35.7
4	37.4	38.0	38.6	38.7	42.5	45.2	44.4	45.8
5	46.0	47.8	42.4	43.0	43.4	47.3	40.9	38.5
6	35.6	31.6	31.0	32.6	45.2	41.4	39.8	36.2
7	34.2	33.2	32.7	36.9	51.6	59.2	49.1	43.8
8	41.4	32.7	30.1	31.4	47.3	53.9	50.1	45.7
9	45.4	45.2	45.0	48.3	52.7	55.5	52.4	49.6
10	48.3	47.3	44.3	41.3	44.1	44.4	37.7	33.2
11	31.7	31.2	31.5	31.2	31.7	32.2	33.5	35.2
12	33.7	34.7	33.7	36.7	37.7	37.2	33.6	32.0
13	30.7	29.1	28.1	29.3	37.0	41.4	34.6	31.6
14	30.1	30.1	29.1	31.1	40.4	45.5	43.0	41.2
15	37.9	37.4	40.9	38.7	40.6	40.6	40.1	39.5
16	38.8	38.5	38.3	35.2	40.6	45.8	38.3	31.7
17	29.1	27.1	28.7	31.2	38.0	39.1	38.6	36.2
18	36.0	34.2	34.4	33.7	34.8	37.2	35.4	34.2
19	30.6	30.1	30.6	32.2	34.2	35.4	32.2	28.7
20	26.6	28.1	24.5	31.4	44.3	42.6	36.7	34.4
21	32.7	32.4	27.6	31.7	47.2	52.1	41.5	39.3
22	37.2	38.8	40.1	39.5	44.1	39.3	31.7	28.6
23	24.0	25.7	25.6	29.6	42.0	50.4	40.1	36.2
24	34.7	32.4	31.0	31.5	48.8	50.6	44.1	40.1
25	37.8	38.0	38.3	41.2	46.8	42.3	36.2	31.2
26	23.1	21.8	21.5	23.8	35.7	39.1	34.4	29.1
27	27.0	27.1	26.6	29.5	38.5	43.5	38.9	37.2
28	35.2	32.2	29.3	33.7	52.2	60.2	52.1	40.1
29	37.2	33.2	30.7	34.5	56.0	61.2	53.2	52.6
30	51.3	50.1	48.6	50.1	58.8	61.7	45.7	41.1
31	38.7	36.7	35.2	35.2	36.8	36.7	33.0	31.7
Hourly means.	34.98	34.06	33.13	34.60	42.15	44.44	39.60	36.78

Mean Time. 1869. February	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
	°	°	°	°	°	°	°	°
1	30.3	30.3	26.7	29.4	36.0	40.4	34.0	31.2
2	27.6	26.4	27.1	29.7	33.6	29.6	31.5	32.6
3	32.7	33.7	35.2	37.2	38.5	38.6	37.2	36.2
4	35.5	37.5	38.9	36.0	34.7	33.8	26.6	23.4
5	19.7	20.0	19.5	25.0	30.6	33.2	29.5	27.6
6	25.6	24.0	23.4	32.8	47.1	49.1	41.8	31.2
7	28.1	26.9	28.9	35.4	41.2	44.3	39.3	31.2
8	27.1	25.1	26.9	29.5	39.3	44.5	42.2	35.4
9	32.8	33.7	35.7	37.2	39.3	40.1	41.4	39.6
10	37.7	38.6	38.8	38.0	43.2	47.3	46.3	39.3
11	34.2	33.7	30.4	31.2	56.3	58.2	50.4	39.8
12	33.3	31.2	28.5	36.7	50.9	55.4	48.3	44.9
13	41.7	39.3	37.2	43.0	57.6	66.3	57.9	51.1
14	47.3	46.3	46.3	52.1	59.7	63.0	59.2	55.1
15	53.9	52.1	49.3	49.1	58.2	55.4	49.6	43.0
16	40.6	40.2	40.1	39.5	43.0	40.0	37.4	34.7
17	32.3	33.2	31.3	34.8	43.3	51.6	45.7	43.6
18	43.0	41.8	38.8	40.1	43.5	45.7	42.3	38.8
19	35.5	36.6	36.7	42.4	43.6	44.7	41.0	34.0
20	33.7	33.2	32.7	38.5	50.6	53.9	46.8	40.1
21	38.3	33.2	31.0	38.3	40.1	41.4	42.4	41.4
22	41.1	41.4	40.9	41.7	47.9	52.1	50.9	50.9
23	49.6	53.1	54.1	58.2	47.6	40.9	33.4	30.1
24	28.6	26.6	25.1	30.1	37.0	40.1	35.2	30.5
25	29.1	29.9	24.5	31.8	40.3	40.0	37.3	36.7
26	36.2	34.6	33.0	33.0	36.7	36.8	34.2	34.7
27	29.6	26.2	23.4	27.1	29.4	33.2	28.3	26.1
28	23.2	21.3	18.8	20.8	27.7	31.2	28.6	24.2
Hourly means.	34.58	33.93	32.97	36.38	42.39	44.67	40.67	36.69

Mean Time. 1869. March	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
	°	°	°	°	°	°	°	°
1	22.0	20.5	16.2	21.5	28.6	33.4	30.6	27.6
2	28.1	30.0	30.6	36.7	47.8	49.0	45.2	39.8
3	34.7	32.2	34.4	37.8	44.5	44.7	40.9	38.8
4	38.8	38.3	37.8	36.8	39.5	45.0	36.2	27.1
5	18.0	15.0	13.0	16.7	26.1	29.3	21.5	22.0
6	22.9	24.3	24.0	28.3	25.1	22.8	21.3	19.0
7	17.0	16.0	15.0	20.5	26.7	33.7	29.7	26.3
8	25.3	27.3	28.3	33.7	47.3	42.5	40.1	37.7
9	35.6	34.5	33.2	39.8	52.1	55.9	48.3	42.3
10	40.9	40.6	41.8	50.5	53.1	57.9	57.8	55.7
11	41.4	35.5	32.4	36.7	41.4	46.9	42.0	38.8
12	37.9	36.2	30.7	29.1	33.2	38.6	36.7	34.5
13	33.9	34.1	34.0	37.7	50.1	60.2	54.8	44.1
14	43.0	42.0	41.8	51.1	62.2	71.7	64.3	58.2
15	54.1	52.3	42.3	36.2	31.6	30.7	32.7	30.2
16	28.9	26.2	24.0	29.7	34.7	36.2	34.7	31.2
17	31.7	30.7	30.1	32.6	40.1	39.2	38.3	33.0
18	30.1	26.6	22.9	29.4	35.2	41.1	39.3	33.7
19	28.5	28.7	27.6	37.7	47.9	42.8	39.2	39.5
20	39.3	39.4	39.9	41.5	52.0	53.1	49.6	44.1
21	35.7	33.7	30.1	37.5	41.1	44.6	36.2	30.1
22	27.7	24.0	21.0	29.6	34.7	37.2	33.2	34.2
23	33.7	33.0	32.2	37.7	42.6	45.2	43.0	36.2
24	31.7	30.7	32.2	41.5	56.4	55.6	50.1	42.5
25	35.8	33.2	31.2	44.1	55.9	55.4	52.6	46.5
26	45.2	44.1	43.5	47.3	54.1	52.6	55.4	56.7
27	55.1	53.6	47.3	52.9	65.1	68.9	64.3	55.1
28	48.6	47.3	45.2	52.6	63.2	63.7	57.2	54.1
29	51.1	48.8	47.7	48.8	50.1	49.4	48.8	46.8
30	46.8	44.6	43.7	51.5	59.0	60.4	52.1	48.8
31	47.6	44.9	43.5	47.8	54.1	54.8	48.8	41.4
Hourly means.	35.84	34.46	32.83	37.91	45.02	47.18	43.38	39.23

Mean Time. 1869. April	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
	°	°	°	°	°	°	°	°
1	39.3	37.2	36.2	39.3	42.5	48.3	46.5	42.4
2	42.4	41.4	41.5	45.8	53.6	50.1	47.8	46.8
3	45.7	38.3	37.0	40.6	43.0	45.7	38.9	34.7
4	31.2	29.4	29.7	37.6	40.8	42.4	40.6	36.4
5	34.2	33.2	32.6	36.7	51.3	52.0	49.6	49.6
6	48.3	45.2	39.5	52.6	59.7	58.9	56.2	54.1
7	46.8	44.1	42.4	51.5	53.6	56.2	51.2	43.2
8	37.2	35.7	34.2	50.3	56.4	62.2	59.6	47.8
9	40.6	40.3	40.6	42.8	45.4	49.1	48.3	41.1
10	38.3	35.2	33.2	43.5	46.3	45.2	41.4	39.3
11	36.2	34.2	33.7	33.2	32.7	33.4	34.8	32.2
12	31.7	28.7	28.5	38.3	47.5	51.8	45.2	43.0
13	39.3	36.2	35.2	43.0	46.9	46.8	45.6	38.3
14	36.7	33.7	32.7	41.4	45.2	46.0	43.0	36.2
15	33.2	32.9	29.3	44.1	51.1	56.8	55.7	45.4
16	40.6	38.3	36.7	51.1	64.9	66.9	62.7	52.6
17	49.1	46.8	50.1	53.1	66.0	71.1	67.3	52.6
18	46.3	45.7	39.3	66.8	75.9	77.3	73.1	64.8
19	62.2	60.7	62.6	71.2	75.2	75.2	71.8	66.8
20	65.8	64.2	63.2	69.1	72.7	71.3	62.7	60.6
21	60.2	55.6	55.6	61.6	68.3	71.1	69.3	60.8
22	57.0	54.6	52.6	60.2	68.3	74.1	70.3	61.7
23	55.1	54.1	51.6	66.3	73.1	77.9	71.4	63.4
24	61.2	57.2	56.8	63.2	66.0	67.8	67.5	60.7
25	58.7	50.6	51.3	55.6	55.6	59.1	58.5	51.4
26	49.1	44.6	43.0	59.2	58.6	74.4	67.3	63.2
27	62.7	59.7	57.6	65.8	77.8	80.4	70.3	67.8
28	63.2	55.1	55.8	69.3	77.3	77.3	71.1	69.1
29	64.0	59.7	57.8	67.3	65.1	66.1	57.6	53.1
30	49.9	46.8	47.8	54.1	59.0	58.0	56.2	53.6
Hourly means.	47.54	44.65	43.60	52.49	57.99	60.43	56.72	51.09

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
May 1	51.7	47.3	44.6	45.7	49.1	51.1	49.1	47.8
2	46.3	44.1	42.7	41.4	42.7	46.8	49.3	45.7
3	44.6	40.9	41.8	50.6	52.6	55.6	51.6	46.8
4	41.4	40.6	43.2	55.6	63.2	66.8	64.8	53.1
5	45.7	41.8	44.1	51.7	60.8	62.8	57.2	52.5
6	47.3	43.5	45.2	49.1	52.8	55.6	49.3	48.3
7	46.3	45.2	44.1	47.1	51.5	51.2	51.1	47.3
8	47.3	46.8	47.7	63.3	61.5	62.8	61.7	56.2
9	53.1	51.1	52.6	58.7	61.6	64.6	67.7	55.3
10	51.1	49.1	51.7	66.7	73.1	77.5	69.8	61.6
11	56.4	51.6	49.6	65.0	76.6	80.4	75.7	66.7
12	62.2	61.7	60.0	69.3	71.1	77.3	71.4	66.2
13	63.2	61.2	62.8	63.0	71.7	73.1	63.2	58.7
14	55.9	53.6	54.0	64.0	62.6	59.8	56.7	55.6
15	53.1	52.5	55.6	64.0	69.9	70.1	70.8	59.7
16	54.6	52.6	54.1	59.0	62.1	71.7	65.8	59.7
17	57.1	53.6	51.6	58.8	64.6	66.6	63.2	55.1
18	53.4	46.6	47.7	56.6	64.8	65.8	62.2	57.7
19	55.1	53.6	52.1	52.1	51.7	54.6	55.6	51.2
20	50.6	47.3	47.8	56.6	63.6	67.8	65.3	53.1
21	49.1	45.7	47.7	56.6	69.3	69.8	64.4	57.9
22	57.2	57.2	57.0	56.6	55.5	57.2	59.2	51.6
23	50.1	46.8	46.3	59.7	64.3	68.3	66.8	55.3
24	52.1	50.6	53.1	65.3	73.9	77.7	71.8	61.4
25	55.1	53.6	52.1	66.2	76.7	80.4	76.0	66.3
26	62.2	59.7	61.7	74.9	84.5	85.9	82.2	72.7
27	67.8	65.3	65.8	73.6	59.2	60.2	67.8	55.0
28	52.1	51.1	51.7	54.6	57.2	59.4	59.2	57.7
29	57.4	56.7	59.7	66.7	75.8	85.0	79.2	69.9
30	67.6	66.3	65.3	72.4	79.2	82.2	71.2	67.6
31	65.7	61.2	66.3	75.2	85.3	85.9	81.2	72.0
Hourly means.	53.96	51.58	52.25	59.65	64.79	67.55	64.53	57.60

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
June 1	69.3	67.8	67.3	74.6	79.8	79.0	70.7	69.5
2	67.3	66.9	66.7	69.3	72.6	75.2	72.5	69.8
3	67.3	66.8	66.3	73.7	80.9	83.3	77.3	72.6
4	72.1	71.9	71.2	75.7	81.7	83.3	76.7	73.6
5	72.2	70.3	68.3	73.3	80.7	71.2	70.5	60.3
6	55.3	52.1	49.6	61.2	64.6	66.3	67.3	57.8
7	54.1	52.1	51.6	62.2	68.3	72.1	69.6	59.6
8	54.7	53.6	53.6	66.3	71.6	72.1	65.4	55.6
9	49.1	48.3	49.6	59.5	64.3	67.8	63.7	61.7
10	60.7	56.6	57.2	56.7	58.7	61.2	63.2	62.2
11	59.2	54.6	54.6	64.7	71.8	74.1	71.0	59.0
12	55.2	55.1	55.3	58.7	64.5	74.1	72.6	65.8
13	61.2	60.2	59.7	69.3	74.4	76.2	73.7	73.1
14	70.7	65.6	66.3	71.2	75.6	76.2	71.0	68.4
15	66.9	66.3	65.3	64.8	68.8	68.8	69.3	63.7
16	60.7	58.2	54.6	. .	67.8	74.0	71.2	61.7
17	59.0	56.7	58.7	69.8	76.7	79.5	77.5	69.3
18	65.5	63.2	62.7	72.5	81.5	86.3	82.7	73.9
19	73.6	72.6	72.1	79.7	85.3	90.6	87.1	74.1
20	71.2	69.3	69.8	79.7	89.2	90.8	86.4	73.6
21	71.2	68.3	69.4	77.3	85.5	86.5	73.7	73.3
22	72.6	70.7	71.7	75.7	80.2	74.0	75.2	81.7
23	75.5	66.3	65.8	72.5	78.7	81.7	77.3	73.1
24	69.3	66.3	66.1	71.7	79.0	81.2	77.8	72.7
25	70.3	69.3	67.3	74.6	83.0	84.4	81.2	76.6
26	72.1	69.5	70.3	76.9	85.5	87.3	74.3	73.1
27	72.1	70.7	71.7	81.2	87.4	89.9	84.7	77.8
28	75.2	74.1	75.7	81.7	87.8	85.8	82.2	77.8
29	75.8	72.6	71.5	77.6	83.6	85.5	82.7	77.3
30	74.7	72.6	73.6	79.2	82.7	82.6	71.8	71.7
Hourly means.	66.47	64.29	64.12	71.43	77.07	78.70	74.68	69.35

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
July 1	66.8	65.3	63.7	67.9	72.6	75.9	72.1	67.3
2	64.3	62.7	64.8	69.7	75.7	79.7	79.2	74.1
3	73.1	72.1	70.1	79.0	85.1	89.7	89.7	81.2
4	77.3	75.4	74.7	82.7	87.6	85.0	82.7	75.5
5	74.4	65.8	63.7	69.8	74.6	78.7	74.1	65.3
6	61.2	54.1	56.2	65.8	73.3	73.1	72.4	64.3
7	62.2	61.7	59.7	69.1	76.6	78.9	75.6	68.8
8	62.7	63.5	62.7	70.3	80.7	84.9	79.7	73.1
9	71.6	70.3	70.5	76.2	82.8	71.7	75.5	68.8
10	66.7	66.3	66.7	73.4	62.8	86.1	82.7	76.2
11	62.3	69.8	70.3	80.2	91.4	92.8	88.3	83.8
12	77.3	75.2	73.6	78.7	82.7	86.4	82.6	77.5
13	74.3	72.9	71.1	78.1	86.0	81.8	77.7	73.6
14	71.2	72.1	72.6	79.0	87.8	85.4	80.4	78.7
15	73.1	72.1	71.2	78.7	88.3	88.9	85.2	76.2
16	75.7	75.0	74.1	84.9	91.4	96.7	93.7	83.3
17	77.8	73.1	73.4	82.7	88.8	85.0	79.7	77.1
18	74.1	73.1	72.7	77.8	81.2	85.7	79.9	72.6
19	67.8	67.5	68.8	70.5	70.1	70.8	70.8	69.3
20	69.1	67.8	67.9	71.2	79.3	83.3	79.1	73.9
21	72.6	71.2	70.5	75.8	81.7	82.2	77.6	66.3
22	61.5	59.7	58.1	69.9	75.0	79.0	75.7	66.9
23	62.7	58.6	57.4	65.6	77.3	80.7	75.4	67.3
24	63.2	59.7	60.2	71.7	82.5	86.4	84.4	74.4
25	69.8	67.3	67.8	74.3	83.7	88.3	75.1	73.1
26	70.2	70.8	70.9	75.6	81.2	86.4	82.7	74.6
27	73.3	73.1	72.6	77.8	83.7	70.3	76.2	72.6
28	70.3	69.1	67.8	76.0	83.0	84.5	78.2	72.1
29	72.1	72.1	70.8	74.3	80.2	80.7	79.7	70.8
30	65.8	61.8	59.7	69.0	75.8	79.0	75.4	67.1
31	62.4	61.5	60.2	70.8	78.9	79.7	73.4	67.5
Hourly means.	69.25	67.76	67.24	74.40	81.51	82.51	79.19	72.69

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
August 1	62.6	60.2	59.6	72.6	77.8	79.7	74.1	66.9
2	63.2	61.2	59.2	68.3	78.0	84.6	81.0	75.4
3	72.9	68.8	68.8	78.1	86.4	83.3	84.4	74.4
4	72.8	65.2	65.9	72.2	82.2	83.6	76.7	71.1
5	70.3	69.3	69.1	75.2	79.2	81.2	73.6	64.5
6	59.7	56.2	53.6	61.5	67.5	68.7	67.8	57.9
7	55.6	51.6	51.0	64.3	72.3	72.0	64.5	58.0
8	53.6	52.1	51.4	67.3	73.6	76.2	72.5	63.8
9	56.2	54.1	52.1	65.7	77.5	80.8	73.6	64.3
10	59.7	57.3	54.9	69.5	80.4	84.6	78.1	67.5
11	63.7	62.7	62.3	70.5	82.7	87.1	82.8	73.1
12	68.3	66.3	65.5	78.7	85.8	89.9	83.8	76.4
13	73.6	70.8	69.9	78.7	85.8	92.7	85.6	75.5
14	72.2	69.3	68.8	78.7	86.4	89.9	83.8	76.7
15	74.6	71.7	72.0	80.4	85.4	90.6	85.5	75.2
16	73.3	71.7	70.5	83.3	89.2	94.3	87.6	79.8
17	75.1	73.2	70.8	74.5	84.7	82.2	77.9	74.5
18	72.1	71.4	71.2	73.7	77.3	83.8	79.7	74.3
19	73.3	72.7	72.6	74.3	78.0	84.9	81.2	77.5
20	75.2	74.3	73.4	81.1	94.3	99.1	91.9	85.9
21	80.7	78.7	76.4	87.1	95.7	101.5	94.0	81.6
22	78.7	76.7	76.7	84.7	91.9	93.2	84.6	81.0
23	76.2	73.1	71.7	76.0	76.7	79.0	78.1	75.7
24	73.6	71.2	68.8	74.6	80.7	83.3	79.3	73.3
25	70.3	66.8	66.8	76.2	87.1	91.1	82.2	76.6
26	75.7	73.1	73.3	80.2	87.6	90.8	80.9	72.3
27	67.5	66.3	62.4	72.3	82.6	88.1	81.2	73.4
28	70.5	68.3	67.5	79.2	92.8	96.3	84.4	74.6
29	73.6	72.2	72.2	80.2	86.1	84.4	81.5	73.1
30	73.1	72.9	69.3	69.3	67.1	68.3	66.3	60.7
31	59.8	55.9	57.2	66.8	73.9	76.2	69.1	61.0
Hourly means.	69.28	66.95	65.96	74.68	82.13	88.11	79.52	72.13

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
September 1	56.7	52.6	49.1	59.2	67.6	66.3	61.5	53.6
2	51.1	49.8	48.8	61.8	71.4	70.9	64.5	56.7
3	52.1	50.6	48.6	61.2	72.6	77.5	68.9	60.7
4	56.4	53.6	53.3	64.5	80.2	83.8	74.1	66.5
5	61.0	57.7	56.7	67.5	82.4	84.7	76.2	69.3
6	66.3	65.5	64.8	69.7	82.7	81.7	79.0	73.7
7	68.8	69.3	71.4	78.1	87.4	84.9	79.7	74.1
8	73.6	73.1	72.6	79.0	81.5	74.1	69.1	65.8
9	62.2	59.2	54.7	64.8	71.7	73.9	66.8	58.7
10	56.2	52.6	53.1	61.2	68.5	70.9	66.8	58.7
11	54.1	52.6	50.6	62.7	72.3	77.5	68.8	60.5
12	55.1	52.6	50.1	64.7	67.8	83.3	71.4	61.8
13	57.2	53.1	51.6	63.7	79.2	76.7	71.2	65.8
14	59.2	57.7	57.2	68.3	78.1	78.9	70.8	62.7
15	56.2	55.6	56.2	65.9	77.3	80.9	73.2	69.1
16	67.6	67.5	66.8	72.1	84.0	80.7	75.7	71.7
17	71.2	70.1	70.3	68.9	77.3	79.3	71.7	68.8
18	66.4	65.8	66.8	70.3	76.8	81.7	71.7	68.3
19	66.8	67.3	67.3	70.8	78.2	83.9	75.7	70.8
20	70.3	65.8	62.7	70.3	85.3	89.2	79.7	73.3
21	69.3	66.3	65.3	74.9	88.9	93.5	84.2	74.1
22	72.6	69.3	68.5	71.2	79.0	85.5	75.7	71.2
23	69.8	69.8	70.5	71.4	72.8	74.9	73.3	70.8
24	69.5	68.3	67.8	69.5	75.3	79.0	72.6	69.8
25	68.5	67.8	67.3	72.3	81.5	81.2	75.2	71.4
26	70.3	70.0	70.3	70.0	72.1	61.4	59.7	59.2
27	55.6	53.5	50.4	54.7	58.2	61.7	56.7	50.6
28	48.5	45.2	43.0	53.1	60.7	63.2	55.1	48.5
29	44.1	42.3	40.9	54.6	69.5	71.5	59.2	53.1
30	48.3	46.3	44.3	55.3	71.2	73.1	62.4	53.1
Hourly means.	61.50	59.70	58.70	66.39	75.72	77.53	70.35	64.41

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
October 1	49.1	46.8	44.6	56.2	72.1	77.3	63.4	56.7
2	53.1	54.3	55.3	62.9	67.8	74.5	71.1	68.8
3	69.3	69.5	69.7	63.7	63.5	62.7	61.2	61.2
4	60.7	60.8	61.2	61.6	61.0	69.3	62.2	56.9
5	52.6	51.6	51.1	58.8	59.7	64.2	56.7	50.6
6	47.3	44.3	43.0	53.6	65.3	66.0	65.7	49.2
7	46.0	43.0	41.2	49.6	66.0	68.5	58.5	51.9
8	48.3	45.4	44.1	52.9	68.8	70.9	60.7	53.6
9	48.3	46.8	44.1	54.1	68.8	70.3	61.7	58.7
10	58.8	58.9	58.9	61.2	63.8	62.4	55.5	51.1
11	49.1	44.4	40.6	51.4	65.3	67.7	57.7	52.6
12	53.1	52.6	52.3	58.6	66.8	64.8	62.2	59.2
13	57.2	52.1	49.1	50.6	55.6	54.1	45.5	40.9
14	38.8	36.5	35.7	48.5	54.6	58.2	54.4	52.1
15	49.1	44.6	43.0	47.8	51.6	49.1	47.5	46.3
16	45.2	41.8	39.8	45.9	52.6	55.6	47.8	40.6
17	38.3	36.2	34.7	46.8	60.7	64.5	53.1	47.3
18	43.0	40.6	40.1	48.3	57.2	59.2	50.1	41.8
19	40.1	43.0	43.5	44.6	52.1	48.6	41.4	39.2
20	37.8	37.2	37.2	41.9	50.1	49.2	43.3	37.2
21	34.9	34.7	36.2	42.0	44.3	44.7	45.6	45.8
22	44.1	42.2	40.5	46.3	54.8	55.1	49.1	46.9
23	47.3	48.8	49.1	53.3	58.2	59.2	57.7	57.4
24	52.6	45.7	43.0	45.6	49.6	51.1	43.1	37.5
25	32.6	31.6	30.8	36.9	44.6	47.8	39.2	32.6
26	31.2	29.3	28.1	34.7	44.1	47.6	39.5	38.3
27	34.2	32.7	31.2	36.6	42.4	44.1	35.7	31.4
28	33.2	34.2	35.2	37.6	52.1	55.3	46.3	38.4
29	36.2	37.2	38.2	43.2	48.7	46.0	42.0	39.8
30	35.0	35.2	33.7	36.7	37.0	36.7	35.3	35.0
31	31.7	29.2	26.8	35.2	41.8	44.1	38.3	31.8
Hourly means.	45.10	43.59	42.65	48.62	56.16	57.70	51.34	46.80

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
November 1	28.6	25.6	27.1	35.2	45.7	47.3	40.5	33.4
2	33.2	32.7	31.7	36.8	54.4	56.2	46.4	42.3
3	35.7	33.4	33.0	38.3	56.2	57.2	47.1	41.2
4	38.3	34.2	32.2	36.7	54.5	61.0	52.6	50.0
5	47.3	46.8	48.3	50.1	58.2	61.2	51.1	46.9
6	45.4	40.1	39.3	43.0	49.6	47.8	41.1	35.8
7	32.6	33.4	34.1	36.8	38.0	38.0	32.2	30.2
8	27.9	26.6	26.1	30.1	39.9	42.4	36.2	34.2
9	32.2	31.7	30.7	34.1	42.3	41.1	37.6	33.7
10	32.2	29.6	28.1	34.5	44.6	42.8	36.2	30.7
11	32.2	32.7	29.1	33.8	45.2	46.5	38.3	29.1
12	28.1	25.6	23.2	31.8	45.0	42.3	39.3	36.6
13	32.7	31.2	24.3	30.8	36.7	34.7	35.0	34.2
14	33.7	33.2	33.4	35.4	37.7	39.3	38.0	36.7
15	36.3	34.2	31.8	36.7	42.3	41.8	36.2	33.6
16	30.2	27.8	28.6	31.7	32.4	33.4	34.9	34.7
17	34.2	43.5	49.4	47.3	46.3	50.1	44.6	41.3
18	38.3	34.2	30.7	38.3	46.3	46.1	39.3	34.6
19	31.7	28.7	28.1	33.2	45.6	47.9	44.3	43.0
20	45.0	43.6	41.6	42.8	49.2	45.2	37.2	37.7
21	35.2	34.2	35.7	38.6	37.7	39.0	33.2	30.7
22	29.7	27.2	24.4	30.8	38.8	39.8	36.2	37.7
23	38.2	38.7	38.5	39.3	41.1	42.0	41.8	42.0
24	42.8	41.8	40.0	39.8	37.6	37.7	33.7	31.7
25	28.7	26.6	25.4	28.6	38.7	40.8	34.6	29.3
26	26.9	25.1	25.6	25.6	41.4	46.3	45.4	44.6
27	42.3	40.4	38.6	40.6	43.0	47.9	42.4	38.5
28	34.8	30.6	28.6	34.1	40.7	42.4	36.7	31.0
29	29.1	27.1	26.9	32.6	40.1	43.9	43.4	43.6
30	44.6	45.9	46.7	48.8	59.2	57.7	55.3	58.1
Hourly means.	34.94	33.55	32.71	36.54	44.28	45.33	40.36	37.57

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
December 1	59.2	53.1	50.1	49.1	46.3	46.3	40.1	35.2
2	36.2	36.2	33.7	35.5	40.9	38.6	35.7	33.0
3	30.7	28.0	28.5	30.1	30.6	32.2	27.7	24.0
4	24.0	24.4	24.8	28.0	32.5	35.6	36.0	38.8
5	39.3	38.5	37.7	38.0	40.1	41.0	42.3	40.8
6	40.3	39.6	38.3	37.7	35.7	33.7	30.3	30.5
7	26.9	23.4	21.8	24.5	31.2	34.2	30.0	30.2
8	29.3	28.6	27.1	27.5	36.6	37.0	32.5	32.4
9	28.3	26.7	25.5	28.6	41.6	41.1	32.8	28.6
10	26.1	23.4	21.2	24.3	38.7	40.4	31.1	32.7
11	32.2	31.2	30.0	32.2	46.6	44.3	39.9	38.9
12	40.8	41.0	41.4	45.2	55.6	56.2	48.5	45.2
13	42.2	39.3	34.4	36.9	46.9	45.8	42.5	40.9
14	39.8	34.2	32.2	32.4	37.2	36.7	34.7	34.4
15	34.2	32.7	32.2	33.2	36.7	38.3	39.3	43.2
16	44.6	47.3	48.5	46.9	50.1	50.7	47.0	41.7
17	37.2	33.7	30.7	32.7	44.6	45.0	37.7	36.8
18	35.6	35.2	34.2	39.3	40.5	34.7	33.2	33.2
19	33.8	30.1	29.7	30.4	35.2	36.1	31.9	31.4
20	31.2	30.7	31.2	32.6	38.4	39.9	33.2	29.1
21	27.6	25.7	26.6	28.1	28.1	29.4	28.7	29.9
22	31.2	32.2	33.2	34.7	44.3	45.7	49.7	49.0
23	43.6	36.7	32.2	32.4	35.0	35.2	30.2	26.6
24	24.4	21.5	20.6	23.6	39.3	40.3	33.7	30.7
25	29.1	27.1	26.1	27.6	33.4	35.2	35.7	35.2
26	37.2	38.3	41.0	40.7	43.2	42.4	41.6	40.2
27	40.2	40.2	40.2	43.5	46.5	46.3	44.8	44.3
28	45.7	45.2	43.0	42.1	48.5	48.3	41.6	37.4
29	36.2	35.2	33.8	34.6	41.8	44.3	36.4	32.2
30	29.3	29.7	29.9	32.4	48.8	51.6	43.2	38.8
31	35.2	33.2	31.0	34.2	47.3	52.6	43.5	39.8
Hourly means.	35.21	33.62	32.61	34.16	40.72	41.26	37.27	35.65

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
January 1	33.2	33.4	33.6	33.5	35.0	35.0	32.5	30.3
2	29.0	28.0	25.0	25.5	27.5	28.8	30.0	30.5
3	31.5	31.0	32.8	32.0	32.5	34.0	35.0	36.5
4	38.0	38.5	39.0	39.3	43.8	46.0	45.0	46.4
5	46.4	48.3	42.5	43.6	41.0	40.0	40.0	38.2
6	35.5	31.0	31.0	30.7	39.0	42.0	37.0	36.0
7	32.4	33.0	33.0	35.5	45.3	50.5	44.4	40.9
8	39.8	32.3	30.5	31.8	43.0	48.2	46.5	43.5
9	43.5	42.8	43.0	46.7	49.5	51.5	49.6	49.0
10	48.4	46.5	42.4	38.0	39.0	38.7	33.3	33.3
11	31.6	31.0	31.5	31.8	32.0	33.0	34.0	35.7
12	34.2	35.0	34.0	35.2	34.5	34.2	31.2	29.6
13	28.5	28.0	28.0	28.1	32.5	36.0	32.6	30.6
14	29.6	29.4	29.5	31.2	38.3	41.5	40.5	38.0
15	36.2	36.5	40.8	39.0	41.0	40.3	40.6	40.0
16	39.0	38.8	38.8	33.0	36.0	39.2	34.8	30.6
17	29.4	29.2	29.2	31.3	36.0	37.6	38.0	35.8
18	35.0	34.3	34.5	33.6	34.6	36.3	35.0	34.2
19	31.0	29.5	30.0	31.5	31.0	32.0	30.5	28.0
20	27.0	28.3	25.3	30.3	39.0	38.0	33.5	33.0
21	31.5	30.0	27.5	30.5	40.3	44.0	38.0	36.5
22	34.5	35.5	36.0	37.5	38.8	36.0	30.3	27.5
23	26.5	25.3	26.2	29.8	38.8	44.3	38.0	35.3
24	34.0	31.0	31.0	31.5	43.5	43.0	40.5	37.5
25	35.2	35.6	35.8	38.7	40.5	37.8	32.6	27.6
26	22.5	21.8	21.6	23.8	33.0	33.6	31.0	28.5
27	27.0	27.5	27.0	29.5	37.2	41.0	37.2	36.0
28	35.0	32.0	30.0	32.8	47.0	50.2	46.0	38.6
29	36.2	33.3	31.3	34.6	50.0	54.5	49.5	49.0
30	50.0	49.5	48.7	50.5	51.0	51.4	40.2	36.6
31	35.0	32.5	31.0	31.8	32.2	32.0	29.6	28.5
Hourly means.	34.41	33.54	32.92	33.92	38.80	40.34	37.32	35.54

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
February 1	28.0	28.5	24.5	26.8	33.0	32.6	29.5	29.0
2	26.8	26.5	27.0	29.2	32.4	30.0	32.0	33.0
3	33.0	34.0	35.4	37.8	39.0	39.0	38.0	36.8
4	36.0	38.0	39.5	32.6	32.0	29.0	24.3	22.5
5	20.0	20.0	20.0	25.8	31.3	33.6	30.0	28.0
6	26.0	24.6	24.1	27.5	37.0	39.2	34.5	29.5
7	27.8	26.8	29.0	31.3	35.6	37.4	35.0	30.0
8	26.7	25.3	27.0	29.2	37.0	40.6	39.0	34.3
9	32.8	34.0	36.0	37.5	39.5	40.5	42.0	40.0
10	38.0	38.4	38.0	38.4	42.6	45.2	44.5	39.5
11	34.5	34.0	30.8	32.0	46.6	47.4	42.0	37.2
12	32.6	31.1	29.0	35.8	44.5	48.0	45.0	42.5
13	40.0	36.0	36.2	41.1	50.2	55.3	51.5	48.7
14	46.5	46.0	46.2	50.4	55.5	58.0	56.0	54.0
15	54.4	52.0	49.4	49.4	54.2	51.0	43.0	38.5
16	37.3	36.6	37.3	35.7	38.0	35.4	35.0	32.0
17	32.8	33.0	32.0	32.6	39.0	45.0	41.2	41.2
18	39.0	37.0	34.6	33.5	35.8	37.0	36.5	35.0
19	34.0	36.0	36.0	39.0	36.8	36.0	34.5	30.8
20	31.0	30.5	30.5	35.5	45.0	48.0	43.4	38.2
21	36.0	32.5	31.0	36.5	39.0	40.5	41.5	41.5
22	40.0	41.5	41.0	42.5	47.5	50.8	50.0	50.0
23	50.0	53.5	54.5	58.5	45.4	36.4	29.4	27.4
24	27.5	26.0	25.8	30.2	34.5	33.5	30.0	28.6
25	26.5	27.0	25.0	30.3	33.5	35.0	32.5	33.5
26	34.5	34.0	33.2	33.6	36.5	36.3	34.6	30.5
27	29.5	25.2	22.5	25.2	26.0	32.0	29.0	26.0
28	24.0	22.0	18.9	20.5	24.6	28.4	28.0	24.0
Hourly means.	33.72	33.21	32.66	34.94	39.00	40.04	37.57	35.0

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
March 1	21.5	20.0	16.5	20.0	25.5	30.2	30.2	28.2
2	29.0	30.6	31.3	33.4	40.7	41.0	39.0	36.5
3	33.4	30.0	31.0	32.8	37.0	37.7	37.0	35.7
4	36.0	36.5	38.0	37.0	39.0	39.8	31.8	24.5
5	17.5	15.0	13.5	17.0	26.0	25.4	21.5	21.8
6	22.3	25.0	24.6	28.6	25.6	23.2	20.0	18.2
7	16.5	15.0	15.0	17.5	24.2	29.5	30.2	26.8
8	26.0	28.0	29.0	33.0	39.1	37.0	36.6	35.0
9	34.3	34.0	33.0	37.0	46.0	49.4	42.0	41.5
10	41.5	41.0	42.5	51.0	53.5	58.0	57.6	55.8
11	39.0	33.0	30.5	33.5	37.0	41.2	38.6	36.0
12	35.9	35.0	30.5	27.6	30.2	33.8	34.3	33.5
13	33.5	33.5	34.0	36.2	45.0	50.6	46.8	41.0
14	42.0	41.0	41.0	47.0	54.5	60.2	57.8	53.5
15	51.2	50.0	40.0	35.5	31.0	30.0	31.0	29.5
16	27.5	25.5	24.5	30.4	35.0	31.6	31.8	31.8
17	30.0	29.5	29.0	30.5	36.0	35.0	34.5	30.5
18	26.5	25.0	21.5	27.5	35.2	34.5	33.6	30.4
19	28.0	28.5	27.5	34.0	41.0	41.0	39.0	39.8
20	40.0	40.0	40.0	42.0	50.4	48.6	45.0	41.5
21	34.5	33.0	29.5	33.0	35.3	37.5	31.0	26.3
22	25.3	23.0	20.5	27.0	31.8	32.5	33.5	34.5
23	34.0	33.5	32.5	37.0	39.0	39.6	37.5	34.2
24	31.8	30.0	31.0	39.1	47.0	47.0	44.4	40.5
25	36.0	33.0	31.4	42.5	48.5	48.0	46.8	45.0
26	45.0	44.5	44.2	47.5	54.3	53.0	55.8	57.0
27	55.3	54.0	47.5	52.5	55.8	57.5	56.8	52.3
28	47.5	45.4	44.6	50.0	57.2	58.0	52.4	51.4
29	50.0	49.0	48.0	49.2	50.5	49.5	48.8	47.0
30	47.0	45.0	44.0	49.2	51.5	52.5	46.2	44.0
31	43.6	40.6	39.8	42.0	45.4	48.0	44.5	38.0
Hourly means.	35.31	33.78	32.45	36.15	40.91	41.96	39.87	37.47

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
April 1	36.0	35.0	34.3	35.5	37.5	43.0	42.5	40.5
2	40.5	40.0	40.5	42.6	48.4	48.0	47.5	44.6
3	43.4	36.0	32.6	35.0	37.8	39.0	33.8	31.5
4	29.0	28.5	28.4	32.4	34.3	35.0	34.5	33.5
5	33.0	32.0	32.0	39.0	43.0	43.4	44.0	41.6
6	41.0	40.0	36.3	45.6	47.0	48.5	47.0	45.8
7	46.0	43.0	42.5	44.5	43.5	45.0	43.0	40.0
8	36.2	35.0	33.5	43.6	48.0	49.0	47.5	42.5
9	41.6	41.3	38.0	39.8	40.5	42.7	43.3	39.8
10	37.8	34.2	33.4	39.2	39.0	38.5	39.5	38.2
11	36.5	34.5	34.0	33.8	33.2	33.8	34.5	32.0
12	31.3	29.0	29.0	35.8	42.5	44.5	41.2	39.3
13	30.0	36.0	35.0	40.5	42.0	40.6	40.0	34.5
14	33.8	33.0	32.0	36.3	37.3	33.0	36.0	33.5
15	31.0	30.6	29.2	39.0	43.5	47.0	47.2	41.1
16	39.0	38.4	36.5	46.5	55.5	56.0	53.0	47.2
17	44.5	45.5	48.2	52.6	56.8	57.0	54.3	49.0
18	44.0	42.3	39.5	57.5	63.0	66.0	64.0	59.2
19	58.5	58.0	61.3	67.0	67.4	66.0	65.4	63.8
20	63.5	62.5	63.0	65.7	67.3	66.8	63.0	60.5
21	60.0	55.3	55.5	54.0	58.2	59.5	57.0	51.5
22	48.6	47.5	46.5	51.2	57.0	59.0	60.0	57.8
23	53.5	53.0	49.8	58.5	64.0	66.2	64.0	60.0
24	59.6	56.0	56.5	61.5	63.8	64.5	65.0	60.0
25	48.5	46.0	46.2	47.4	47.4	49.4	49.5	46.5
26	45.0	44.0	42.5	50.0	57.6	62.4	60.0	57.4
27	56.8	57.5	56.0	61.8	68.5	70.5	66.0	60.0
28	56.2	53.0	54.0	60.0	63.6	66.0	62.5	64.5
29	62.5	59.0	56.5	61.2	60.4	59.0	54.0	50.5
30	49.0	46.4	47.5	50.0	53.0	52.5	51.8	50.2
Hourly means.	44.48	43.08	42.34	47.92	50.70	51.89	50.37	47.22

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
May 1	49.0	46.0	44.6	46.0	49.5	51.0	49.5	57.5
2	46.5	43.8	43.0	43.2	42.2	46.2	45.5	42.0
3	41.8	39.6	39.0	44.0	43.5	48.0	42.8	41.0
4	42.0	40.0	40.5	47.0	51.5	52.5	51.5	48.5
5	46.0	42.5	44.5	48.0	52.0	54.5	51.5	49.5
6	46.5	43.5	44.3	46.8	49.0	49.8	47.0	47.0
7	46.0	45.2	44.5	46.6	49.0	49.5	50.0	46.5
8	45.8	46.5	48.0	50.4	55.4	56.5	56.0	52.5
9	50.5	50.0	48.5	52.0	53.0	56.0	58.0	52.0
10	50.5	49.0	50.4	58.5	62.2	65.3	61.5	58.0
11	55.0	51.0	49.8	60.6	68.0	67.0	65.0	61.0
12	58.5	58.0	58.0	60.2	68.5	66.0	64.4	62.5
13	60.0	60.0	61.2	62.5	68.4	66.0	56.5	56.5
14	54.5	53.5	54.0	60.2	59.3	58.2	56.5	55.5
15	53.0	52.0	54.5	59.5	62.5	63.5	62.5	55.5
16	54.0	52.5	53.0	57.0	61.0	59.5	55.0	51.5
17	54.5	52.0	49.0	51.2	55.1	54.3	52.4	48.0
18	47.5	45.0	45 4	49.7	56.8	57.0	56.2	55.0
19	53.5	52.0	52.0	52.0	51.8	53.0	53.4	50.0
20	50.0	46.5	45.7	50.8	56.0	58.5	56.0	51.5
21	49.0	45.5	47.6	55.0	62.7	63.8	61.8	58.0
22	57.5	57.0	57.2	56.5	54.3	54.0	53.7	50.5
23	46.5	44.0	45.2	52.0	54.7	58.2	57.6	54.0
24	51.5	50.0	51.3	59.0	63.5	67.0	62.8	58.6
25	55.0	53.0	52.5	62.6	65.0	70.3	67.5	62.0
26	59.5	58.0	60.5	70.6	72.3	73.0	73.2	69.0
27	66.4	64.5	64.8	59.8	56.0	57.0	56.0	55.0
28	52.0	49.1	50.5	52.5	55.5	58.0	58.0	57.5
29	57.5	56.8	59.5	65.0	73.0	74.5	71.6	69.0
30	67.0	65.2	65.5	71.5	75.0	76.5	70.8	67.2
31	65.6	60.5	66.6	74.6	79.5	78.2	76.0	69.5
Hourly means.	52.66	50.71	51.33	55.67	58.91	60.08	58.07	55.22

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
June 1	68.0	67.2	67.0	70.3	73.2	73.2	69.8	68.5
2	67.5	67.0	67.3	69.5	70.5	71.5	70.8	69.2
3	67.2	67.0	66.3	71.0	74.3	75.6	73.0	71.5
4	72.0	72.0	71.5	74.5	76.5	78.2	74.0	72.5
5	72.0	70.0	68.0	72.5	76.8	71.0	65.6	54.5
6	51.0	49.5	48.0	56.0	58.0	58.9	59.7	56.0
7	53.5	52.0	51.5	57.6	57.8	60.8	59 4	57.3
8	53.5	53.5	54.0	59.3	61.5	61.0	54.0	51.5
9	48.5	48.0	48.2	55.6	58.5	60.5	58.0	57.0
10	60.5	56.0	57.5	56.5	58.6	60.5	63.0	61.5
11	59.0	55.0	54.5	57.2	61.0	61.5	58.0	53.6
12	53.0	53.0	53.2	55.6	61.0	67.7	67.0	62.5
13	60.0	58.5	59.0	66.5	68.4	70.6	71.0	71.3
14	70.5	66.0	65.5	70.5	73.0	73.0	69.2	67.6
15	66.8	66.0	65.5	64.5	64.2	65.5	65.3	62.5
16	58.5	57.5	54.0	. .	58.5	63.5	65.0	59.5
17	57.5	56.5	57.6	67.0	66.8	71.7	71.0	66.8
18	64.5	63.0	62.0	71.2	77.0	79.5	76.7	73.0
19	71.0	70.8	70.0	72.2	75.1	77.0	78.0	72.6
20	71.0	69.0	69.6	76.5	78.5	81.5	80.5	72.5
21	69.2	68.2	69.4	74.5	80.0	79.5	73.0	73.0
22	72.5	70.5	71.5	75.5	75.2	73.1	74.5	71.5
23	70.0	66.5	66.0	71.0	74.0	76.3	73.5	71.2
24	68.0	66.0	65.5	68.0	71.6	72.0	72.5	71.0
25	69.5	68.5	67.0	72.0	77.3	76.5	76.0	72.8
26	71.6	69.6	70.5	74.5	81.7	81.5	73.5	73.2
27	72.2	71.0	72.2	78.0	78.2	81.2	80.4	76.0
28	74.0	74.0	74.5	78.3	80.6	81.4	78.0	74.5
29	73.5	70.2	69.6	70.5	75.0	75.4	77.2	74.8
30	73.5	72.0	72.8	76.0	67.6	75.0	71.5	71.5
Hourly means.	65.32	63.80	63.64	68.36	70.35	71.82	69.97	67.03

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
July 1	65.5	64.0	63.5	64.3	67.2	69.0	69.0	66.0
2	64.3	62.5	64.6	68.5	73.2	76.0	76.0	73.5
3	73.0	72.2	70.2	76.5	79.5	81.6	83.5	78.5
4	74.5	73.5	72.8	74.3	77.2	76.5	76.5	71.4
5	70.6	58.2	59.0	63.0	67.5	68.5	65.0	59.6
6	55.0	52.5	53.5	61.0	65.0	65.0	64.0	62.5
7	60.5	61.0	59.0	65.2	69.2	71.3	69.4	67.5
8	62.3	64.0	63.0	67.0	75.0	75.4	73.5	69.8
9	67.5	66.5	67.8	72.0	75.0	70.2	72.0	68.4
10	66.5	66.5	66.0	72.7	78.4	80.0	77.5	74.0
11	71.0	69.3	69.5	76.8	88.5	87.0	78.3	74.6
12	73.0	71.5	70.6	71.5	73.0	77.0	77.5	74.2
13	74.0	72.0	70.0	75.5	80.6	78.5	76.5	73.5
14	71.3	72.4	73.0	78.0	82.3	81.5	76.8	77.0
15	72.3	71.5	71.2	76.4	83.0	82.0	82.0	73.5
16	73.0	73 5	74.0	78.2	80.5	86.0	84.2	78.0
17	75.0	71.0	72.0	75.5	78.0	80.0	78.2	76.2
18	74.0	73.0	73.0	73.5	76.3	79.3	74.5	71.5
19	67.5	67.5	68.2	69.5	69.5	70.0	69.4	68.5
20	69.2	68.0	68.2	70.7	75.0	76.8	74.3	72.1
21	72.2	71.0	70.0	69.0	70.2	69.4	64.6	60.5
22	59.5	55.8	57.5	61.3	64.8	66.3	68.6	65.6
23	62.4	58.4	57.2	62.4	66.0	69.5	68.0	64.5
24	60.0	59.5	59.8	66.6	72.5	75.4	75.0	71.0
25	68.0	67.0	66.0	69.6	74.4	77.6	73.2	71.6
26	69.3	70.5	70.6	74.3	77.0	78.0	77.0	73.5
27	72.8	72.6	72.5	75.0	80.6	70.0	74.8	72.2
28	70.5	68.5	68.0	74.7	75.8	77.5	74.6	71.3
29	72.0	71.5	70.5	72.5	75.0	73.0	72.0	64.4
30	61.5	59.0	57.0	62.0	65.0	67.0	68.0	64.5
31	62.0	61.5	59.5	66.6	70.6	70.0	67.0	64.5
Hourly means.	68.07	66.64	66.38	70.45	74.38	75.01	73.58	70.13

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
August 1	61.5	60.0	60.5	71.0	68.2	70.5	69.0	65.9
2	63.5	61.5	59.5	67.0	70.5	76.5	75.7	73.5
3	71.5	68.7	68.5	73.4	75.6	74.5	75.6	70.5
4	70.6	63.0	64.0	68.0	72.5	74.0	70.8	68.2
5	68.2	69.0	66.4	70.0	72.3	73.5	68.2	62.5
6	58.5	53.0	51.5	55.2	60.1	59.3	59.6	55.3
7	54.5	51.0	50.6	58.0	61.5	60.5	57.5	55.0
8	51.5	51.0	50.8	59.4	61.5	63.0	63.5	58.5
9	55.4	54.0	52.4	62.3	65.2	68.6	65.5	60.0
10	58.5	57.0	55.0	66.5	71.0	72.5	69.8	63.0
11	62.5	62.0	62.1	67.5	72.5	74.3	72.4	70.0
12	66.0	66.0	65.0	72.4	75.0	77.3	74.5	72.3
13	70.3	69.5	69.5	73.5	76.5	77.0	76.5	71.1
14	70.0	69.0	68.2	73.0	76.0	77.8	75.5	72.5
15	75.0	70.0	70.5	75.8	79.0	80.2	77.4	73.5
16	73.0	71.0	70.2	75.2	76.0	79.5	77.5	75.0
17	72.4	70.0	68.2	71.3	77.0	76.0	74.5	73.6
18	72.0	71.0	71.0	71.8	73.2	76.2	74.5	72.5
19	72.8	72.6	72.6	74.0	76.0	79.2	77.5	75.6
20	74.5	74.0	73.6	77.9	83.0	82.6	80.0	78.5
21	76.4	75.5	75.0	80.5	80.5	82.4	81.4	75.6
22	75.5	75.0	75.0	78.0	79.5	81.2	77.6	78.2
23	75.0	72.0	69.4	72.0	71.3	72.5	73.5	73.0
24	70.5	70.0	66.5	69.5	72.3	72.8	70.5	66.5
25	66.0	65.0	65.0	71.0	76.2	81.7	77.0	73.6
26	72.0	71.4	72.2	70.2	78.5	86.0	78.0	71.0
27	65.5	64.5	61.5	68.5	77.6	84.0	79.0	72.0
28	68.9	66.6	65.5	72.0	79.0	81.0	77.4	74.0
29	73.5	72.0	72.2	76.0	76.5	76.5	76.0	71.2
30	70.0	69.5	64.5	63.3	62.2	62.0	63.2	59.0
31	58.5	54.5	55.3	59.0	67.5	68.5	60.5	55.2
Hourly means.	67.55	65.78	64.91	69.78	73.02	74.92	72.57	68.91

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°		°	°	°
September 1	51.2	49.0	46.3	52.0	55.5	59.6	58.0	50.5
2	48.0	46.8	44.0	54.0	66.3	67.6	62.5	55.0
3	52.0	49.4	48.5	55.5	69.0	70.0	60.6	57.0
4	55.3	53.2	53.0	60.0	66.5	67.5	64.5	62.5
5	59.0	57.5	56.5	65.3	70.7	71.0	69.0	66.0
6	64.6	63.0	64.5	68.5	74.0	74.0	71.6	69.8
7	67.5	69.0	71.5	75.0	77.0	76.4	74.5	73.2
8	73.0	72.2	71.8	75.5	75.8	74.0	67.0	65.5
9	62.3	58.2	55.3	64.5	62.5	62.0	58.5	55.5
10	52.0	51.5	52.0	56.0	59.0	60.5	60.0	57.2
11	53.5	52.5	50.7	58.0	61.3	65.0	61.2	57.0
12	55.0	52.3	50.5	60.0	54.5	68.0	62.0	59.0
13	56.0	53.0	51.2	60.5	67.0	65.5	64.8	62.5
14	58.0	56.2	57.0	65.2	68.0	69.3	63.3	58.0
15	54.5	55.5	55.6	63.0	67.8	70.0	66.3	66.3
16	66.8	66.8	66.8	70.0	73.0	71.3	70.0	67.5
17	68.5	68.5	69.0	67.4	72.0	72.7	68.0	68.0
18	66.0	65.5	67.0	70.1	72.7	74.3	71.4	68.5
19	66.5	67.0	67.0	69.2	73.6	76.2	72.0	69.0
20	68.5	65.0	62.5	68.5	74.5	74.5	74.0	70.0
21	68.0	66.0	65.2	70.2	75.5	89.0	76.0	72.0
22	71.6	69.0	68.5	70.4	73.6	84.3	76.0	70.0
23	69.5	69.8	71.0	70.6	71.5	74.0	74.0	74.3
24	69.7	68.5	68.0	69.0	71.1	73.0	69.0	68.0
25	67.3	66.3	66.2	70.0	74.0	72 0	70.0	70.5
26	70.5	70.5	70.5	71.4	72.5	61.0	58.4	57.0
27	53.0	51.2	49.0	51.0	53.0	52.5	50.0	47.5
28	46.0	44.0	43.4	48.0	51.5	53.0	51.5	48.0
29	44.0	42.5	41.5	52.7	59.5	61.5	54.6	51.6
30	47.8	46.5	45.0	55.0	62.0	63.2	57.5	52.8
Hourly means.	60.19	58.88	58.30	63.55	67.50	69.10	65.21	62.32

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
October 1	48.6	46.5	45.0	55.2	62.7	66.0	58.6	54.6
2	52.6	54.0	55.3	63.0	67.7	72.5	69.7	68.0
3	68.6	69.5	70.0	63.0	63.7	63.0	61.5	61.3
4	61.0	60.8	60.0	57.4	59.8	60.2	55.5	53.0
5	51.0	50.5	50.0	53.7	52.8	55.4	55.5	48.5
6	46.5	44.5	43.5	50.0	60.0	56.0	52.4	48.8
7	46.5	43.5	42.0	49.5	57.5	59.0	55.0	51.0
8	48.5	45.5	44.5	52.5	60.8	61.3	57.0	53.0
9	48.0	47.2	44.5	54.2	62.7	64.0	58.8	58.0
10	58.0	58.0	58.3	61.5	63.0	59.0	53.5	48.5
11	47.0	43.5	40.9	49.2	57.3	59.2	55.2	52.0
12	53.0	52.7	52.5	55.7	61.2	61.5	60.2	59.0
13	54.0	49.0	47.8	46.5	47.0	46.0	41.5	39.0
14	38.0	36.7	35.8	45.0	48.2	51.6	51.5	50.5
15	48.0	44.5	43.5	47.5	49.2	48.5	47.2	46.5
16	45.0	42.0	39.0	42.0	45.2	47.0	43.6	40.0
17	38.2	36.0	35.0	44.5	52.8	54.0	49.3	45.0
18	42.5	39.3	39.3	45.5	48.5	49.5	46.2	41.9
19	39.5	42.5	42.0	42.8	46.7	45.0	41.5	39.0
20	38.0	37.0	37.5	39.2	43.8	43.5	40.5	36.8
21	35.3	34.2	36.5	42.2	44.3	45.4	46.0	46.2
22	44.5	42.5	41.0	46.0	49.4	51.0	48.0	46.5
23	47.0	47.6	49.3	53.8	58.6	59.6	58.0	57.5
24	52.0	43.5	41.0	41.0	43.6	43.5	39.0	35.0
25	32.5	32.0	31.0	34.0	38.2	40.0	36.6	31.4
26	31.4	29.5	28.5	34.0	40.7	43.0	38.0	33.5
27	31.5	31.0	27.0	33.0	36.5	37.5	33.5	31.0
28	32.5	34.0	33.5	35.7	46.2	47.0	41.7	37.6
29	35.0	37.0	38.0	42.5	46.0	46.6	. .	38.0
30	33.0	32.8	32.0	33.4	32.5	32.0	31.2	31 6
31	30.0	28.0	26.0	21.0	36.0	38.5	34.0	31.0
Hourly means.	44.43	43.07	42.27	46.27	51.05	51.82	48.67	45.57

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
November 1	29.0	26.0	27.0	31.5	41.0	42.8	39.2	33.0
2	32.6	33.0	32.0	36.0	47.5	49.0	43.5	40.6
3	35.5	33.5	32.0	38.1	50.0	50.5	45.0	40.9
4	38.0	34.5	32.5	37.0	50.3	54.5	50.7	48.0
5	46.2	46.5	47.2	48.5	53.6	49.4	43.2	40.0
6	39.0	36.4	37.0	40.3	42.2	39.8	36.5	33.2
7	31.5	31.8	32.0	33.7	33.8	33.4	28.5	28.0
8	25.0	25.0	24.0	27.6	35.5	34.9	31.0	30.8
9	29.3	28.5	28.0	32.0	35.8	36.0	33.4	32.0
10	30.9	29.4	28.0	32.4	39.0	37.5	34.5	30.0
11	31.5	32.0	29.0	32.4	38.0	38.7	33.8	28.5
12	27.0	25.0	23.5	29.5	38.0	37.8	34.8	33.3
13	31.5	30.2	25.0	30.2	32.6	35.0	34.9	34.5
14	34.0	33.5	33.8	34.4	35.5	36.0	35.0	34.0
15	33.5	32.2	30.5	33.0	37.0	35.5	33.0	30.8
16	28.0	27.8	29.2	31.0	32.5	33.5	34.0	34.5
17	34.5	44.0	50.0	47.5	45.5	47.0	40.3	38.0
18	34.0	33.0	31.0	34.7	39.5	39.5	35.0	32.5
19	30.8	28.5	28.0	32.4	39.8	41.6	42.5	43.2
20	45.0	44.0	41.5	42.5	46.5	43.5	37.0	35.0
21	34.2	33.0	34.0	35.5	34.5	34.5	30.5	29.4
22	28.5	27.0	25.3	29.8	35.0	36.3	34.2	35.0
23	37.0	38.8	38.5	39.5	41.5	42.7	42.6	43.0
24	43.6	42.5	39.5	38.5	35.0	34.5	32.0	29.3
25	27.0	25.5	24.5	26.5	32.5	35.2	32.5	29.0
26	26.5	25.3	26.2	30.0	38.5	42.3	42.0	42.0
27	41.5	39.7	38.2	40.0	42.5	46.5	38.2	34.0
28	32.0	30.0	28.2	31.6	36.0	37.4	34.5	30.5
29	29.2	27.3	27.0	32.8	38.6	41.2	41.5	42.5
30	43.0	45.0	44.6	47.2	56.2	55.5	54.8	56.6
Hourly means.	33.64	33.00	32.23	35.20	40.13	40.73	37.62	35.74

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
December 1	57.0	48.8	46.0	42.0	42.4	41.0	40.5	36.0
2	36.0	36.5	34.0	33.4	37.2	36.0	34.5	33.5
3	30.9	27.3	29.0	28.0	29.3	29.8	27.0	24.6
4	24.6	25.0	25.5	28.3	32.4	32.0	33.0	35.5
5	36.2	38.0	38.0	38.5	40.5	41.8	42.5	41.4
6	41.0	38.8	38.0	38.0	36.0	33.7	. .	29.8
7	26.0	22.8	22.0	24.0	30.0	33.6	30.2	30.5
8	29.5	29.0	27.5	27.8	32.2	33.5	32.3	31.8
9	28.5	26.3	26.0	28.5	36.8	36.5	31.3	. .
10	26.5	23.5	22.0	25.0	33.4	37.2	33.5	32.5
11	32.5	31.5	30.5	31.7	41.3	41.2	37.5	37.0
12	39.0	40.5	40.5	43.2	50.5	50.0	45.0	42.0
13	40.0	37.6	34.0	36.6	41.6	40.9	39.5	39.0
14	37.2	32.5	31.5	31.2	34.7	34.8	33.5	33.5
15	33.5	32.0	31.5	32.5	35.7	38.0	39.0	43.9
16	45.0	47.8	49.0	46.9	44.6	45.0	43.0	38.5
17	36.8	31.5	30.5	32.0	40.0	40.4	35.6	35.5
18	34.2	34.5	34.8	38.0	40.5	35.0	33.6	33.5
19	31.6	29.0	28.6	28.9	32.0	33.0	30.5	31.3
20	31.0	31.0	31.5	32.3	36.0	36.3	32.5	29.4
21	27.5	26.0	26.5	26.5	28.5	29.0	28.8	30.4
22	31.6	32.8	33.7	35.5	44.6	46.0	50.0	49.0
23	39.0	33.0	30.0	29.5	31.5	31.4	28.2	26.5
24	25.0	22.0	21.0	24.0	33.0	37.5	32.5	30.5
25	29.2	27.2	26.8	28.5	33.5	35.0	36.0	35.5
26	37.5	39.5	41.4	41.4	44.0	43.4	42.4	40.9
27	40.7	40.9	46.8	44.5	47.0	46.8	45.5	45.0
28	46.3	45.5	43.8	43.2	46.0	44.2	39.5	36.5
29	35.0	34.8	32.5	33.8	38.5	39.0	35.0	32.0
30	29.9	30.3	30.4	32.5	43.0	48.0	43.0	38.0
31	33.5	32.0	30.0	33.0	42.6	45.5	39.8	37.8
Hourly means.	34.59	32.84	32.49	33.52	38.04	38.56	36.51	35.04

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
January 1	34.0	33.8	33.5	34.0	40.0	39.5	32.8	30.0
2	28.0	27.4	24.5	28.0	37.8	33.0	30.0	30.0
3	31.0	31.0	31.5	36.2	46.0	39.5	35.0	36.0
4	38.0	38.6	39.5	40.8	53.5	51.8	45.0	46.0
5	45.7	48.0	43.5	45.5	58.0	63.5	68.0	35.5
6	32.5	29.0	28.2	39.2	87.7	92.5	60.5	37.0
7	33.5	31.5	30.0	43.5	96.0	93.5	79.5	45.5
8	39.8	34.0	34.0	39.5	84.0	98.0	64.5	48.5
9	48.5	46.0	45.2	56.8	62.2	73.0	73.0	51.5
10	48.0	47.0	45.0	45.0	84.2	91.7	68.0	36.8
11	36.0	34.6	34.0	33.0	36.0	34.0	34.5	35.5
12	34.0	34.5	34.0	44.0	84.0	68.8	38.5	33.5
13	30.5	29.0	25.5	37.8	85.5	67.5	30.0	26.0
14	27.0	26.6	25.5	41.5	76.0	57.0	41.0	38.0
15	36.0	36.0	40.2	40.0	45.0	43.2	41.0	40.0
16	39.0	39.0	38.0	42.7	88.2	73.0	32.0	28.0
17	24.5	24.0	27.0	34.5	47.0	45.0	38.0	35.5
18	35.0	33.5	33.2	36.0	43.0	47.2	35.0	34.0
19	30.0	27.0	29.0	35.2	46.5	46.0	27.0	24.0
20	22.3	24.2	21.0	44.8	90.0	77.0	35.0	31.5
21	29.0	28.7	25.0	44.0	80.5	72.5	37.6	37.0
22	34.0	36.0	39.0	45.0	65.5	51.7	29.2	28.0
23	26.4	25.0	25.2	40.0	89.0	84.0	35.0	32.5
24	31.5	30.0	27.5	44.8	94.0	77.8	41.5	36.0
25	34.3	35.2	36.0	48.5	87.5	54.0	34.5	30.2
26	22.8	20.6	18.2	41.5	83.5	72.6	29.0	26.5
27	23.5	24.0	23.8	33.6	73.0	76.8	38.5	34.8
28	33.0	30.0	27.0	51.0	99.2	85.2	48.0	36.6
29	35.0	30.0	28.0	43.5	94.0	81.6	51.8	50.0
30	50.0	48.5	46.0	64.0	73.0	94.9	45.5	40.0
31	38.0	36.0	34.5	40.0	50.7	53.0	31.0	29.9
Hourly means.	34.00	32.86	32.02	41.74	70.34	65.77	42.87	35.62

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
February 1	28.0	28.5	24.5	56.5	87.0	83.0	28.2	26.0
2	24.5	24.0	25.2	38.5	46.6	35.5	32.0	33.5
3	34.0	36.0	37.0	41.0	52.1	44.0	38.0	36.5
4	35.2	38.0	39.0	40.5	67.0	44.5	25.3	22.0
5	19.0	19.2	19.5	47.5	65.0	72.0	27.5	26.0
6	22.5	21.0	19.5	54.2	99.0	73.0	36.0	27.9
7	24.5	25.8	29.0	46.4	70.0	67.3	33.5	29.0
8	25.2	23.0	24.5	35.5	73.0	69.0	37.5	32.0
9	32.3	34.0	36.0	40.0	45.0	46.0	42.5	40.0
10	38.0	38.5	39.5	42.5	59.1	60.0	45.2	36.0
11	32.0	31.5	29.0	43.0	87.0	95.0	47.0	35.2
12	30.0	28.0	26.5	59.0	97.2	91.8	46.5	42.5
13	38.0	35.0	33.0	69.0	103.4	102.2	53.0	48.5
14	46.0	44.2	44.0	74.0	76.6	71.5	57.8	54.0
15	54.0	52.0	49.5	67.0	79.3	67.2	48.0	42.0
16	38.6	38.0	39.0	45.1	94.0	67.5	36.0	31.2
17	30.0	30.2	28.0	41.0	66.5	91.0	45.2	43.5
18	42.5	41.0	37.0	69.0	91.2	60.7	42.5	37.2
19	34.0	35.2	35.0	77.2	95.0	85.5	37.0	29.0
20	30.5	32.5	32.0	68.5	86.3	90.2	44.5	38.5
21	34.0	30.0	28.5	68.8	60.0	66.0	43.2	42.6
22	42.0	42.0	39.0	49.0	55.5	57.8	50.0	49.5
23	49.0	53.2	54.0	64.0	52.0	45.8	33.5	29.5
24	27.5	23.0	20.5	70.8	92.8	84.2	32.5	28.0
25	24.6	25.0	21.6	61.5	86.7	66.0	36.0	36.5
26	36.0	34.2	32.0	34.0	70.2	54.0	34.5	33.5
27	27.5	23.0	21.0	63.2	79.2	80.0	27.0	24.0
28	21.0	20.0	17.0	17.5	84.2	75.0	26.0	22.5
Hourly means.	32.94	32.43	31.44	53.01	75.75	69.49	38.78	34.88

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
March 1	20.2	18.5	13.0	62.0	84.9	81.5	28.2	26.0
2	28.0	30.0	30.3	74.0	100.5	67.0	44.0	36.0
3	30.6	28.4	32.0	77.0	85.4	67.5	39.2	38.5
4	38.0	37.5	37.0	38.5	64.0	89.5	36.0	27.0
5	17.0	14.0	10.5	63.0	86.5	78.2	19.8	20.0
6	21.5	23.2	23.5	60.0	86.0	47.5	21.5	17.0
7	16.0	15.2	13.0	64.6	85.6	79.0	27.5	22.0
8	21.5	27.5	29.3	50.2	96.0	46.5	40.0	37.0
9	35.2	34.0	29.0	74.0	102.9	97.0	48.0	42.5
10	40.8	40.0	42.5	52.0	62.0	69.0	57.5	54.5
11	40.0	34.0	29.5	66.8	95.0	91.8	43.2	38.6
12	37.0	36.0	30.5	49.0	87.5	85.0	36.0	33.0
13	33.0	32.8	34.0	50.0	101.6	104.0	53.5	43.5
14	43.2	42.0	42.0	90.5	110.5	110.5	60.0	54.0
15	51.0	49.5	43.0	38.0	35.0	35.8	33.7	28.5
16	26.5	25.0	23.0	76.0	94.0	64.6	34.0	29.5
17	30.5	30.0	29.8	42.0	96.0	55.5	37.8	31.0
18	26.8	24.0	19.0	79.2	89.5	78.0	39.0	30.0
19	24.0	29.0	29.0	63.5	84.5	46.0	40.0	39.8
20	40.0	40.0	40.0	53.6	78.0	67.0	49.0	43.2
21	33.0	31.8	28.0	84.5	96.0	88.2	35.6	27.0
22	25.0	22.6	19.0	72.5	58.5	50.2	33.0	35.0
23	34.0	33.0	31.0	80.0	97.0	90.6	43.2	31.0
24	28.2	26.8	28.5	83.2	109.5	72.0	49.6	38.2
25	33.5	30.5	29.2	83.5	89.8	72.0	52.2	44.5
26	44.0	44.0	44.5	50.0	58.7	58.5	55.0	56.0
27	54.5	53.0	45.0	99.5	126.2	125.3	108.0	63.6
28	53.0	50.0	47.0	82.0	110.0	110.0	79.0	58.0
29	53.0	50.0	48.0	55.0	62.0	62.0	62.0	48.5
30	46.5	45.0	42.5	72.0	114.0	113.0	112.0	53.5
31	48.0	43.5	44.0	94.5	107.0	109.0	102.0	49.0
Hourly means.	34.63	33.57	31.83	67.12	85.62	77.80	49.02	38.58

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
April 1	40.5	38.0	37.5	59.6	52.8	91.0	47.0	42.5
2	41.0	40.0	41.0	58.4	89.5	55.2	48.0	46.0
3	45.0	36.0	37.0	79.0	104.0	94.5	42.0	33.5
4	28.0	25.0	25.8	58.3	89.8	70.0	43.7	34.0
5	32.5	29.0	28.8	93.0	92.0	69.0	51.2	46.8
6	45.2	42.0	36.0	100.0	85.5	80.0	55.0	52.5
7	48.0	44.0	42.2	99.0	77.0	93.2	54.0	39.0
8	34.5	33.0	31.0	98.2	78.5	118.5	108.8	43.5
9	46.5	46.0	43.5	56.0	69.2	86.0	81.2	52.0
10	37.0	35.5	33.5	88.0	98.6	75.0	75.0	41.0
11	35.5	33.0	33.0	38.0	41.5	50.5	80.0	32.5
12	31.8	24.0	28.5	95.5	105.0	100.0	45.0	44.0
13	42.0	36.0	35.0	83.6	80.0	88.5	76.0	50.2
14	34.0	31.5	31.0	91.8	75.0	87.0	47.0	30.5
15	29.5	29.0	28.0	95.2	107.5	111.5	116.0	59.5
16	40.5	37.0	30.3	97.0	115.0	118.6	119.0	68.0
17	46.5	44.0	49.0	58.5	118.0	120.0	107.5	75.0
18	43.0	42.5	38.5	113.5	126.5	131.0	123.0	66.5
19	61.0	59.5	63.0	107.5	129.5	129.6	106.0	77.0
20	64.5	63.0	63.5	98.2	112.0	99.0	78.0	62.5
21	61.8	55.6	60.5	111.0	127.0	128.0	119.0	73.0
22	55.5	52.0	50.0	108.0	120.0	122.5	122.6	75.0
23	73.5	54.5	52.0	110.0	124.5	132.5	124.0	73.0
24	61.0	56.0	57.5	76.0	75.5	90.0	105.0	71.5
25	58.0	55.5	51.5	99.0	109.2	111.0	101.0	70.0
26	49.0	46.5	41.0	108.0	120.5	139.0	118.0	65.5
27	61.0	58.0	58.0	110.5	134.0	131.5	127.8	70.0
28	62.0	50.0	56.5	110.5	128.3	128.5	128.0	70.0
29	68.5	56.0	54.5	116.0	126.0	124.0	113.2	60.0
30	45.0	45.5	50.2	77.0	122.0	108.0	70.0	56.0
Hourly means.	44.06	43.25	42.93	89.81	101.10	102.77	87.73	56.02

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°	1869.	°	°	°	°	°	°	°	°
May 1	55.0	51.0	45.0	51.0	80.0	84.2	84.3	49.5	June 1	69.0	67.0	68.0	120.0	133.0	142.0	82.0	72.0
2	47.5	46.0	44.2	47.0	58.5	54.0	52.0	45.3	2	66.6	67.0	69.0	82.0	95.5	139.0	73.3	73.0
3	44.0	36.0	41.0	102.2	77.0	107.0	56.0	43.0	3	67.0	64.0	68.0	118.0	134.8	139.6	140.0	80.0
4	36.5	34.0	42.5	102.0	117.0	114.5	66.0	44.5	4	72.5	71.0	73.0	113.3	139.1	144.0	137.0	83.4
5	40.0	38.5	45.0	76.2	106.5	148.0	116.5	61.0	5	74.0	72.0	76.0	101.0	133.8	109.0	96.5	70.5
6	49.5	43.6	45.0	60.0	75.0	91.0	74.8	49.0	6	57.0	50.0	47.5	116.0	133.2	136.0	137.0	82.0
7	47.0	45.5	45.5	62.2	78.0	84.0	84.0	50.0	7	49.5	47.0	52.0	100.0	124.0	127.0	119.0	86.0
8	46.5	46.0	47.5	52.0	126.2	125.0	121.9	69.5	8	56.0	51.5	55.3	113.3	111.2	112.0	112.0	66.0
9	53.4	51.0	54.0	90.0	96.2	122.0	119.0	75.5	9	53.0	44.0	52.0	99.0	112.0	119.5	119.5	80.0
10	49.0	47.5	56.0	109.5	128.2	131.0	131.0	70.0	10	61.0	56.0	59.5	59.2	67.2	77.0	81.6	76.0
11	55.0	54.5	50.0	107.0	130.8	132.0	129.5	77.2	11	64.0	54.0	59.5	111.0	125.0	130.8	122.0	83.5
12	57.2	56.8	60.0	119.0	131.8	133.0	119.8	74.0	12	54.0	53.0	55.5	69.0	81.9	122.5	122.5	90.0
13	62.5	60.0	64.0	65.0	127.0	131.5	131.0	65.0	13	63.5	58.5	60.0	112.2	122.0	112.0	105.0	87.0
14	57.5	52.5	56.5	98.0	93.5	65.0	57.0	54.5	14	70.0	65.0	66.0	95.5	119.0	124.0	94.2	70.2
15	53.2	52.3	57.6	96.0	127.0	130.0	119.0	77.5	15	65.0	64.0	65.0	77.0	115.5	115.5	119.0	69.0
16	57.0	50.0	56.0	70.5	75.0	117.5	117.0	77.0	16	60.2	55.5	53.2	103.5	126.0	122.2	118.0	86.0
17	57.5	53.0	51.0	90.5	122.0	121.5	117.0	65.0	17	56.0	54.0	58.0	109.5	121.0	127.2	120.0	98.0
18	52.5	41.0	49.0	100.5	124.0	133.0	108.0	65.0	18	64.0	63.0	65.0	113.0	126.2	131.0	131.0	101.0
19	55.5	53.0	52.5	55.4	65.5	72.5	58.5	49.2	19	70.0	68.5	72.0	116.0	128.0	131.0	128.0	82.7
20	48.0	44.0	48.0	104.0	118.5	122.0	120.0	87.6	20	69.0	67.8	70.2	110.0	136.0	136.0	125.0	115.0
21	48.0	49.8	51.9	72.5	124.8	123.7	85.0	61.6	21	70.0	66.0	68.5	119.0	139.6	139.6	127.1	72.5
22	60.0	57.0	58.0	73.0	75.0	75.5	79.0	76.0	22	72.0	69.8	71.0	102.0	116.0	108.0	109.0	78.0
23	46.0	43.5	49.0	106.0	118.5	119.0	114.5	78.0	23	69.0	66.0	69.5	105.0	112.5	127.0	125.0	82.5
24	50.0	48.0	53.5	109.7	129.8	130.0	123.5	76.0	24	70.0	62.0	66.0	106.0	120.6	121.0	121.5	80.0
25	54.5	51.0	56.2	105.6	125.0	137.5	138.0	93.0	25	68.0	67.0	67.5	107.2	125.0	124.0	114.0	85.0
26	64.5	60.0	65.0	125.0	140.0	136.0	137.0	122.2	26	72.0	68.0	73.5	115.8	130.0	133.4	131.5	75.0
27	75.0	65.0	67.0	112.0	112.0	86.5	71.0	67.0	27	70.0	68.0	71.0	128.5	138.0	139.6	140.0	104.0
28	55.5	52.0	55.0	68.5	77.9	78.0	78.0	61.8	28	76.5	74.0	77.4	122.0	134.0	142.1	126.0	82.7
29	56.5	56.0	63.0	111.0	123.5	134.0	132.5	70.0	29	72.0	69.0	70.0	120.2	131.8	131.0	125.0	87.0
30	66.0	65.0	67.8	117.0	129.0	133.5	105.0	93.0	30	73.0	72.6	76.0	96.2	103.0	88.1	72.0	68.0
31	64.0	59.0	69.2	116.6	132.6	136.5	136.8	83.2									
Hourly means.	53.36	50.40	53.74	89.51	107.93	113.19	102.66	69.07	Hourly means.	65.79	59.17	68.50	108.37	120.50	122.37	115.10	82.20

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.	Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°	1869.	°	°	°	°	°	°	°	°
July 1	68.0	65.5	62.0	93.5	106.2	100.0	74.0	59.0	August 1	59.0	49.8	59.0	95.0	113.2	110.2	72.0	60.0
2	58.5	57.0	65.0	90.8	106.5	115.4	85.0	69.5	2	57.5	56.0	60.0	92.0	117.0	120.0	83.2	70.0
3	69.1	69.0	68.5	119.0	137.0	139.2	139.0	73.0	3	69.0	63.8	66.0	106.5	127.5	92.0	103.0	75.0
4	69.5	67.5	72.5	118.0	132.0	94.0	86.5	67.5	4	73.0	62.0	63.0	90.2	117.3	118.2	74.0	65.0
5	66.0	58.5	61.5	99.0	104.0	117.0	83.5	55.0	5	67.0	66.0	67.2	99.0	110.2	114.5	114.5	75.0
6	52.0	49.0	53.5	104.5	117.2	85.8	80.0	55.5	6	55.2	51.8	49.5	92.0	108.5	112.0	55.0	59.0
7	54.0	53.8	56.8	108.0	124.5	109.0	80.0	66.2	7	53.5	50.0	47.0	107.0	117.2	108.0	61.5	51.1
8	55.0	56.5	62.0	103.0	125.0	126.2	84.0	64.5	8	47.0	47.0	48.5	102.0	114.0	113.0	83.0	53.5
9	65.5	66.5	69.0	102.5	130.0	86.5	89.0	60.0	9	50.0	48.2	49.0	98.5	118.0	117.0	75.0	55.0
10	58.5	57.5	63.5	109.0	115.0	126.0	90.0	69.0	10	51.8	48.5	51.5	103.5	119.0	119.8	78.5	59.0
11	65.0	63.0	66.0	119.5	129.0	124.5	83.5	77.6	11	58.5	60.0	62.0	106.0	124.0	104.1	79.5	66.0
12	70.0	68.0	72.0	110.5	133.0	112.8	90.5	70.0	12	62.5	59.0	63.0	107.0	122.0	120.5	85.5	72.0
13	65.0	64.0	69.5	118.0	132.0	83.5	76.0	69.0	13	69.0	66.5	69.0	100.0	112.2	119.0	83.5	71.0
14	67.0	68.0	79.0	118.2	135.8	102.0	77.0	75.0	14	68.0	66.0	67.0	106.0	122.0	124.0	81.0	71.5
15	70.0	68.0	70.0	115.0	132.0	98.4	85.0	70.0	15	70.0	67.2	70.0	111.2	105.5	122.0	83.0	71.0
16	68.5	67.0	72.0	124.0	114.0	136.5	105.5	74.5	16	70.0	66.0	67.0	118.3	125.2	132.0	86.0	72.0
17	71.0	67.0	70.2	123.0	131.0	90.0	78.0	72.0	17	70.5	69.0	68.5	87.3	117.5	85.5	77.0	71.5
18	70.0	68.5	72.0	97.0	115.0	127.5	80.0	67.5	18	70.0	69.5	69.0	83.0	97.0	113.4	79.6	75.0
19	65.0	65.5	70.0	74.0	73.5	75.0	74.5	66.5	19	70.5	70.0	71.5	83.0	86.0	113.0	79.2	73.0
20	66.0	63.8	68.0	87.0	125.0	128.2	90.0	70.0	20	71.0	70.0	74.0	110.0	132.0	126.0	85.0	82.5
21	69.0	69.0	69.0	109.5	120.0	113.0	91.2	59.0	21	75.5	73.2	74.0	114.0	124.0	133.0	92.2	75.5
22	59.0	57.8	58.0	106.0	103.2	104.0	83.5	65.0	22	74.0	71.0	75.0	95.0	112.2	106.0	81.0	78.0
23	56.5	52.0	56.0	86.5	114.5	109.5	75.8	61.0	23	76.2	74.0	70.2	86.5	81.8	88.0	77.5	72.5
24	58.0	54.0	59.0	104.5	119.0	120.0	91.5	67.0	24	71.0	69.5	66.0	90.0	92.0	107.0	77.0	67.7
25	63.0	62.5	66.0	108.0	114.0	122.0	75.6	70.0	25	67.0	63.0	65.0	111.5	124.0	123.8	79.5	70.5
26	68.0	67.6	69.5	88.3	115.2	117.0	89.0	72.0	26	70.0	68.0	70.5	104.0	125.5	124.0	76.0	66.2
27	69.0	68.0	72.0	91.5	129.8	71.0	79.0	67.5	27	63.5	61.5	59.5	105.2	115.1	122.0	78.2	69.0
28	65.0	63.7	65.5	97.2	134.5	100.0	78.0	68.0	28	67.0	62.0	64.5	116.0	130.0	127.5	80.5	71.0
29	69.0	89.0	70.0	84.0	96.0	90.0	84.0	65.0	29	70.0	67.2	70.5	116.5	127.2	81.0	78.0	73.5
30	60.0	58.0	56.0	105.5	118.0	116.8	75.0	60.0	30	72.6	75.0	67.5	79.0	67.0	88.0	67.0	60.0
31	57.0	56.5	56.2	93.5	106.0	112.0	73.6	59.6	31	53.0	52.8	53.5	102.4	117.5	110.0	91.0	55.5
Hourly means.	65.39	62.64	65.81	103.52	115.42	108.17	84.43	66.63	Hourly means.	65.25	62.69	63.80	100.50	117.15	112.72	80.55	67.98

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
September 1	55.5	50.0	45.0	90.0	108.2	106.0	115.0	65.0
2	46.0	45.3	45.0	99.5	110.5	87.0	61.0	46.0
3	45.0	42.5	44.0	95.8	112.2	110.5	63.0	52.0
4	49.0	47.5	48.5	101.0	117.0	117.5	69.0	60.0
5	51.5	50.0	51.0	99.0	119.5	114.2	72.7	64.0
6	61.0	60.3	63.0	76.0	103.4	91.5	75.0	69.0
7	74.0	69.0	70.0	98.8	125.2	101.5	76.0	70.2
8	70.5	68.0	71.0	95.2	96.0	73.0	65.5	66.0
9	57.0	52.0	49.5	100.0	118.2	102.0	60.5	53.5
10	50.5	47.0	50.0	96.0	94.5	96.0	60.2	52.0
11	48.5	46.2	46.0	98.0	90.0	113.5	61.5	52.6
12	50.7	48.0	47.5	98.0	117.0	115.5	64.0	54.5
13	50.0	48.2	47.0	100.0	115.5	89.7	64.0	60.0
14	56.0	54.0	53.5	91.0	95.2	102.2	66.2	56.0
15	47.5	50.0	53.0	101.0	115.5	116.0	70.5	66.8
16	65.0	64.5	64.0	107.2	122.2	83.0	70.0	66.0
17	69.0	68.2	68.0	70.0	90.5	82.0	67.5	68.5
18	63.2	60.5	65.0	79.5	96.5	101.2	67.5	63.0
19	62.0	65.3	65.0	85.0	115.0	115.0	70.0	63.8
20	63.0	62.0	60.5	102.0	122.5	119.3	73.0	67.0
21	64.0	60.0	62.5	105.5	127.0	123.2	77.2	73.0
22	69.5	67.0	65.0	75.6	99.6	113.5	72.0	68.0
23	67.0	68.0	69.0	72.0	78.0	84.7	71.2	67.2
24	66.0	65.5	65.5	72.0	89.0	98.5	68.0	67.5
25	66.8	65.0	65.5	78.5	125.0	95.0	72.9	68.0
26	68.0	67.8	68.0	71.0	77.2	61.0	56.5	55.5
27	50.0	49.0	45.0	89.0	82.5	94.8	48.0	46.0
28	43.0	40.0	37.0	87.0	98.5	96.0	47.0	43.0
29	40.0	37.0	35.5	90.0	104.0	102.2	52.0	45.0
30	45.0	43.0	41.5	89.2	105.3	104.0	53.0	49.0
Hourly means.	57.14	55.36	55.37	90.43	105.69	100.32	67.00	59.94

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
October 1	44.0	42.0	40.5	87.2	107.5	108.5	107.0	57.0
2	51.0	52.5	54.0	64.5	75.5	82.0	68.0	66.0
3	67.0	68.0	68.0	66.3	65.0	62.5	59.0	59.0
4	59.0	59.5	58.5	89.0	102.0	100.5	56.0	53.5
5	52.0	48.6	46.0	91.0	70.2	100.0	51.0	43.6
6	42.0	40.0	38.4	80.0	99.2	96.5	47.0	43.0
7	40.0	38.0	39.0	82.3	99.5	97.0	51.0	46.0
8	45.0	42.0	41.0	83.5	101.1	98.0	53.0	48.0
9	45.0	39.0	39.0	83.0	102.0	86.0	55.0	53.0
10	54.0	56.0	57.0	64.0	70.2	66.0	51.0	46.5
11	44.2	42.0	34.7	84.5	98.7	90.0	49.5	47.0
12	51.5	51.0	50.5	68.5	87.5	67.8	68.5	58.0
13	54.0	49.0	47.0	72.5	89.0	76.0	40.2	34.0
14	32.0	30.5	30.4	78.5	65.0	63.0	49.8	48.0
15	46.5	40.0	39.0	53.0	55.3	49.3	45.0	43.0
16	42.0	38.5	35.0	75.5	86.0	79.0	40.5	35.0
17	34.5	32.0	30.0	77.0	92.7	90.5	46.0	40.5
18	38.3	35.5	30.0	69.5	88.5	77.5	40.9	36.0
19	37.0	40.0	41.5	45.7	64.5	47.5	39.5	37.4
20	36.0	35.0	33.0	72.0	85.0	55.0	35.0	30.0
21	28.5	29.0	33.0	45.2	44.2	47.0	44.0	44.2
22	40.0	39.2	37.0	70.0	72.4	60.0	45.0	41.2
23	45.2	47.0	48.0	53.0	60.0	59.4	56.5	55.0
24	50.0	40.5	38.0	72.0	81.9	77.0	37.2	32.5
25	27.0	26.5	26.0	66.5	77.0	73.0	30.2	27.0
26	26.7	27.0	24.0	46.5	55.0	57.5	33.0	31.8
27	28.5	27.5	26.5	65.0	61.0	67.0	27.5	28.0
28	30.0	34.0	34.0	40.0	79.0	71.5	38.2	33.0
29	30.5	33.0	36.0	48.2	48.1	46.8	47.0	40.0
30	31.0	31.5	28.5	41.4	45.8	41.0	34.0	33.5
31	30.0	25.0	21.5	63.0	73.5	53.0	33.0	24.0
Hourly means.	41.37	39.98	38.87	67.69	77.49	72.45	47.68	42.41

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
November 1	23.5	21.5	21.5	55.2	60.0	59.0	32.5	29.0
2	28.5	28.5	27.5	42.6	81.9	61.2	41.0	39.0
3	33.0	31.0	28.0	45.2	63.5	58.2	42.2	34.8
4	32.0	28.5	29.0	42.0	64.2	60.2	45.0	45.2
5	42.1	44.8	47.5	52.0	69.0	60.2	45.0	42.0
6	40.5	36.0	34.0	52.0	51.0	47.5	37.0	31.0
7	29.2	31.5	32.0	45.0	42.0	38.0	29.0	27.5
8	24.5	22.5	24.2	37.0	51.0	46.0	32.0	31.0
9	27.5	27.0	26.2	37.0	49.5	41.0	36.0	28.0
10	27.6	27.4	27.0	41.2	50.6	44.5	29.0	26.5
11	30.0	30.5	26.0	39.0	56.5	50.2	32.0	25.2
12	26.5	23.0	21.0	35.2	53.0	42.0	35.5	34.0
13	32.3	30.9	25.0	32.5	38.0	34.5	34.0	33.5
14	33.0	32.5	32.8	36.0	40.0	39.0	36.0	35.5
15	35.0	32.0	29.5	45.0	54.1	45.0	33.2	29.7
16	26.0	24.6	27.0	32.2	31.0	32.8	34.0	34.0
17	34.2	43.0	48.0	49.6	63.5	97.4	54.5	42.0
18	39.0	34.5	26.0	68.0	99.2	102.0	61.5	34.8
19	29.0	27.5	26.0	42.5	96.0	87.2	45.0	42.8
20	44.0	43.0	38.5	66.0	65.4	47.5	37.5	38.0
21	32.0	30.0	35.5	42.0	42.3	58.0	30.5	28.7
22	26.3	24.0	19.0	54.2	60.4	51.2	35.0	35.5
23	36.5	37.0	37.5	42.5	47.0	47.0	43.0	43.0
24	44.0	42.0	39.0	42.0	46.6	47.0	31.6	29.5
25	25.0	24.0	23.0	51.2	87.9	59.5	29.0	26.0
26	23.5	22.5	23.0	53.4	72.2	54.0	45.0	44.7
27	43.0	37.0	35.6	46.0	49.0	57.0	42.5	37.5
28	33.0	28.0	24.0	58.0	89.0	58.5	32.0	28.0
29	26.5	24.2	23.0	43.1	50.0	53.0	44.2	43.6
30	45.0	45.3	46.9	53.5	96.2	64.0	55.0	57.5
Hourly means.	32.41	31.14	30.11	46.04	60.67	51.75	38.66	35.25

Mean Time.	0h.	3h.	6h.	9h.	Noon.	3h.	6	9h.
1869.	°	°	°	°	°	°	°	°
December 1	59.0	51.5	48.0	60.0	90.9	60.0	38.5	35.0
2	35.2	35.0	32.0	42.0	78.8	43.2	35.0	32.5
3	26.7	24.0	28.8	53.0	46.0	49.7	25.5	21.5
4	22.5	23.5	24.5	48.3	51.4	43.9	35.0	37.0
5	38.0	37.0	36.2	42.0	44.0	45.0	42.3	41.4
6	41.2	40.3	39.0	39.0	38.0	36.8	30.5	27.0
7	25.0	22.0	19.0	48.2	79.8	47.6	26.0	28.0
8	28.0	27.5	25.0	42.0	60.0	46.2	32.2	31.6
9	25.0	23.0	22.8	49.0	84.5	55.0	28.0	25.0
10	21.0	20.0	19.0	39.9	84.0	52.2	31.0	29.5
11	31.0	29.5	26.0	43.0	72.0	50.0	36.5	37.0
12	39.5	40.5	41.5	61.2	96.5	65.1	46.0	40.0
13	38.0	35.0	31.0	52.5	74.6	51.5	42.0	40.0
14	38.0	33.2	31.0	40.6	60.2	42.2	34.0	34.5
15	34.5	33.3	32.5	37.0	41.2	40.5	39.0	44.0
16	46.0	48.0	49.0	62.2	94.2	62.2	45.0	40.0
17	34.0	31.0	29.0	50.0	79.0	58.5	36.0	35.8
18	35.5	35.5	34.5	42.0	43.0	37.0	33.0	33.0
19	32.2	28.0	29.0	42.9	81.0	52.0	28.0	29.0
20	29.5	29.8	29.5	51.4	60.0	44.0	27.9	25.0
21	23.5	22.5	26.5	31.5	40.0	34.8	29.0	30.4
22	32.0	33.0	33.5	37.0	48.0	49.2	48.5	47.5
23	41.5	32.5	29.0	47.0	83.2	52.0	26.5	23.5
24	21.0	19.5	18.5	33.0	83.0	56.0	27.2	25.0
25	26.0	24.0	25.0	32.5	39.3	39.5	35.0	34.5
26	36.5	37.5	40.0	43.2	49.0	48.5	42.3	41.2
27	41.0	41.0	41.0	48.0	54.8	49.5	46.0	45.5
28	45.5	45.0	45.0	47.9	63.0	90.5	65.5	38.0
29	36.0	34.5	32.0	39.8	91.2	89.2	62.0	37.6
30	29.0	28.7	29.0	41.5	94.5	68.0	39.0	34.5
31	31.0	29.0	27.0	45.6	93.0	69.0	39.0	37.5
Hourly means.	33.64	32.09	31.41	44.94	67.68	52.54	37.14	34.26

MAXIMUM AND MIMIMUM TEMPERATURE DURING THE YEAR 1869.

Day.	January.		February.		March.		April.		May.		June.		July.		August.		September.		October.		November.		December.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°	°
1	35.5	32.5	41.7	26.0	36.2	15.5	48.5	35.8	57.0	44.3	84.0	66.8	75.7	63.5	80.0	59.5	70.5	50.0	76.3	44.8	47.5	27.5	50.5	40.5
2	35.0	25.0	34.5	26.0	50.3	28.0	54.5	41.0	51.0	41.0	76.0	66.0	80.7	63.5	84.5	59.8	73.6	47.5	75.2	52.5	56.5	31.5	41.6	33.6
3	35.4	30.0	39.5	32.0	50.0	32.4	46.0	37.0	57.2	41.5	83.0	66.0	91.0	70.5	89.0	68.0	77.8	48.8	70.0	65.4	58.6	32.1	42.5	27.5
4	45.3	34.9	40.0	27.0	46.0	36.5	47.2	30.0	68.0	41.5	84.6	70.0	88.0	74.0	83.6	65.0	84.5	54.0	69.7	60.0	62.5	32.8	38.0	24.7
5	55.4	40.5	33.5	19.0	38.6	13.0	54.4	32.2	64.5	41.3	82.5	68.2	78.5	64.0	81.8	69.5	85.0	56.9	65.5	50.0	63.0	46.5	42.6	36.0
6	48.0	31.0	52.0	24.2	39.0	20.5	62.5	39.0	56.5	45.0	71.0	50.0	76.0	55.5	72.3	53.3	86.0	64.5	66.0	43.5	53.0	36.5	38.5	31.0
7	58.8	33.0	52.0	27.0	36.5	15.0	57.8	43.2	52.5	44.0	73.0	50.2	79.5	59.5	73.0	51.5	88.5	69.5	69.0	41.2	52.8	33.0	35.0	22.5
8	59.0	30.2	45.6	25.0	48.0	24.8	64.0	34.0	64.5	47.0	73.0	53.0	85.5	62.5	77.5	50.3	87.0	68.8	71.0	43.5	44.5	25.8	38.4	25.5
9	56.0	44.5	42.5	33.2	57.0	31.8	51.5	41.0	69.0	50.5	67.8	47.5	83.0	70.0	80.6	51.2	75.3	55.5	72.0	44.2	44.5	30.0	42.2	25.5
10	46.0	38.2	49.5	38.5	59.0	41.2	47.5	39.2	79.0	50.0	63.5	56.2	86.7	65.2	84.4	55.0	72.8	52.0	65.5	56.0	46.0	28.5	42.5	22.0
11	46.3	32.0	58.6	29.0	48.5	32.3	40.5	33.0	81.4	49.2	75.0	54.0	92.5	69.5	89.0	60.8	77.7	51.0	67.8	41.5	48.0	28.0	46.5	30.0
12	39.6	34.0	57.4	28.9	48.5	29.2	53.0	28.0	79.2	59.5	. .	. .	87.5	73.5	89.6	64.9	83.3	50.5	68.0	52.5	47.6	23.0	59.5	39.0
13	43.3	27.0	66.8	37.5	61.0	34.0	48.7	35.5	76.0	62.0	77.2	58.3	88.4	70.0	92.5	64.5	81.0	52.0	57.0	47.0	47.0	25.0	48.5	34.5
14	47.5	29.5	63.5	46.0	72.0	42.5	48.2	32.0	64.0	51.5	78.8	66.1	88.0	72.0	90.0	69.5	82.0	56.6	62.5	35.8	40.5	33.5	43.6	32.5
15	42.0	37.0	59.0	47.5	58.7	30.5	60.2	29.5	74.5	52.5	71.5	64.5	91.0	71.3	91.5	71.0	81.4	53.8	53.4	42.5	44.0	31.0	44.0	32.5
16	48.5	34.0	59.0	37.0	39.5	34.0	68.7	37.0	74.2	53.0	75.0	54.9	96.5	73.0	95.5	70.5	85.2	67.5	56.2	39.0	36.0	28.5	52.5	39.8
17	48.5	28.7	52.5	32.0	42.0	30.2	71.8	47.6	68.2	51.0	80.0	57.0	92.0	73.0	87.5	70.3	81.4	68.2	65.5	34.9	56.5	34.5	47.5	29.5
18	37.8	33.5	47.4	37.5	43.2	22.3	77.8	39.0	68.6	46.0	87.0	62.0	87.0	73.3	85.2	71.0	81.8	65.8	59.4	40.0	49.5	30.9	47.0	33.5
19	37.6	30.2	47.8	34.5	48.5	27.0	76.4	61.0	58.0	51.2	90.6	69.2	71.8	67.6	85.5	72.3	83.5	67.0	59.4	39.9	49.5	27.5	39.0	29.8
20	45.3	25.0	54.6	32.5	56.7	39.8	73.8	62.8	68.6	46.5	91.4	69.5	83.5	68.0	100.0	72.8	89.5	63.0	49.5	37.5	50.5	37.5	42.7	31.0
21	53.5	27.0	43.5	31.8	46.0	29.8	72.5	55.5	71.0	45.4	89.0	68.2	83.2	70.0	101.5	76.2	93.7	65.0	46.3	33.5	39.4	31.5	33.0	26.2
22	53.4	32.3	54.8	39.7	46.0	21.0	76.4	52.5	59.2	55.5	80.0	70.5	80.5	57.5	96.3	76.2	86.0	68.4	57.9	39.6	43.0	25.0	49.8	30.0
23	53.8	24.0	61.5	33.6	47.0	32.0	78.6	51.0	69.4	44.5	82.2	65.0	80.7	57.3	80.0	72.0	73.5	69.8	60.8	47.0	43.1	36.0	36.0	30.9
24	53.4	29.5	44.5	24.8	58.0	30.3	69.0	56.3	. .	. .	81.4	65.2	87.8	60.0	. .	. .	. .	. .	58.0	42.5	44.0	34.0	42.0	21.0
25	47.0	36.3	43.5	25.5	57.5	32.0	60.0	50.8	82.5	52.0	84.0	66.6	89.5	66.5	91.0	66.0	84.9	67.5	48.0	31.0	42.5	25.5	36.5	26.0
26	47.0	20.7	37.5	32.6	56.5	43.0	76.4	42.5	86.9	59.0	88.2	69.4	87.5	70.6	91.2	72.0	72.5	60.5	49.0	29.0	47.0	25.5	44.0	35.5
27	45.5	26.5	34.0	23.8	71.2	45.0	80.5	57.2	74.5	58.0	90.2	70.6	90.0	70.0	88.5	62.2	62.5	50.5	46.0	31.2	49.5	39.0	46.8	40.2
28	61.0	29.0	34.5	19.0	65.8	43.6	78.0	56.0	60.8	51.5	92.0	74.0	86.8	67.2	97.5	62.5	66.5	43.5	56.5	31.5	44.5	29.5	50.0	42.5
29	62.5	30.5	. .	. .	51.5	45.8	70.6	57.5	86.3	56.5	86.0	71.0	85.2	70.4	90.5	72.5	71.5	41.5	52.5	37.0	45.2	27.2	45.3	31.0
30	62.5	46.0	. .	. .	61.6	43.6	60.8	46.0	83.5	65.0	85.0	71.6	79.5	59.8	81.0	66.5	73.2	44.0	43.5	33.2	65.5	43.5	52.3	30.0
31	40.0	33.5	. .	. .	55.7	44.0	. .	. .	86.0	65.5	. .	. .	79.6	59.0	77.5	56.0	. .	. .	45.0	26.5	. .	. .	54.5	31.3
Mean .	48.08	31.81	48.25	31.11	51.48	31.95	62.53	43.44	69.73	50.72	80.79	63.50	84.94	66.70	86.93	65.09	79.74	57.71	60.08	41.60	48.72	31.34	44.28	31.15
Mean temp.	39.94		39.68		41.72		52.98		60.22		72.14		75.82		76.01		68.72		50.84		40.03		37.72	

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Jan. 1	0	E.	2	N.	10	1869. Jan. 2	0	N.	1	C. K.	10	Jan. 3	0	SW.	1	Fog	
	3	NE.	3	N.	10		3	NE.	1	C. K.	10		3	S.	1	K.	10
	6	NE.	3	N.	10		6	NE.	1	C. K.	10		6	SW.	1	K.	10
	9	NW.	2	N.	10		9	E.	1	K.	10		9	W.	1	Fog	
	Noon	N.	2	N.	10		Noon	SW.	1	Mist	10		Noon	S. SW.	1	Fog	
	3	N.	2	N.	10		3	S.	1	Mist	10		3	S.	1	Fog	
	6	NW.	2	C. K.	10		6	SE.	1	K.	10		6	S.	1	Mist	10
	9	NW.	1	C. K.	10		9	S.	1	K.	10		9	S.	1	Mist	10
Jan. 4	0	S.	1	Fog		Jan. 5	0	SE.	1	K.	10	Jan. 6	0	NW.	2	K. S.	2
	3	S.	1	Fog			3	S.	1	Fog			3	NW.	3	S.	1
	6	S.	1	Fog			6	NW.	2	N.	10		6	NW.	1	Clear	0
	9	E.	1	Fog			9	NW.	3	N.	10		9	S.	1	C. K.	6
	Noon	S.	1	Fog			Noon	W.	2	C. K. S.	8		Noon	W.	2	C. K.	8
	3	S.	1	Fog			3	W.	3	C.	4		3	SW.	1	C. K.	5
	6	S.	1	Fog			6	NW.	2	S.	1		6	SW.	1	S.	1
	9	SE.	1	N.	10		9	NW.	2	Clear	0		9	SE.	1	Clear	0
Jan. 7	0	SE.	1	Clear	0	Jan. 8	0	S. SW.	1	Clear	0	Jan. 9	0	NE.	1	K.	10
	3	S.	1	Clear	0		3	NW.	2	Clear	0		3	NE.	1	C. K.	10
	6	S.	1	Clear	0		6	W. NW.	1	C.	1		6	NE.	1	C. K.	6
	9	S.	1	C.	3		9	W.	1	C. S.	8		9	S.	2	C. K.	9
	Noon	S. SE.	1	C.	1		Noon	S.	1	C. K. S.	7		Noon	S.	3	C. K.	10
	3	S.	1	Clear	0		3	S.	1	C. K.	9		3	S.	2	C. K.	9
	6	S. SW.	1	Clear	0		6	NE.	1	K.	10		6	S.	1	K.	10
	9	S.	1	Clear	0		9	NE.	1	K.	10		9	S.	1	K.	10
Jan. 10	0	S.	1	N.	10	Jan. 11	0	NE.	1	K.	10	Jan. 12	0	N.	2	N.	10
	3	W.	2	N.	10		3	N. NE.	1	K.	10		3	NW.	3	C. K.	6
	6	NW.	2	K.	10		6	NE.	1	N.	10		6	SW.	2	C. K. S.	5
	9	NW.	2	C. K. S.	9		9	NE.	1	N.	10		9	W.	3	C. K.	8
	Noon	NW.	3	C. K.	4		Noon	N. NE.	2	N.	10		Noon	NW.	4	C. K.	9
	3	NW.	2	C. K.	2		3	N.	1	N.	10		3	NW.	4	C. K.	9
	6	NW.	2	C. K.	2		6	NE.	3	N.	10		6	NW.	3	C. K.	6
	9	NE.	2	C. K.	4		9	N.	2	N.	10		9	NW.	3	Clear	0
Jan. 13	0	NW.	2	Clear	0	Jan. 14	0	S. SW.	1	C. K.	4	Jan. 15	0	S.	1	C. K.	10
	3	NW.	1	Clear	0		3	SW.	1	C. K.	3		3	SE.	1	K.	10
	6	NW.	1	Clear	0		6	S. SW.	1	C. K.	4		6	NE.	1	N.	10
	9	NW.	1	C.	1		9	SW.	1	C. K. S.	8		9	SE.	1	N.	10
	Noon	W.	1	Clear	0		Noon	SW.	1	C. K.	6		Noon	NE.	1	N.	10
	3	W.	1	C. K.	6		3	SW.	1	C. K.	4		3	N. NE.	1	Haze	10
	6	SW.	1	C. K.	3		6	SW.	1	C. K.	10		6	NE.	1	N.	10
	9	W.	1	C. K.	3		9	SW.	1	Haze	0		9	NE.	1	Mist	10

REMARKS.

January 1. Rain during the morning. Amount, 1.712 inch.
2. Foggy after 9 p. m.
4. Began to rain at $8^h\ 45^m$ p. m. Amount, 0.250 inch.
9. Raining lightly at 9.40 p. m. Rain during the night, 0.178 inch.
11. Heavy rain during the day. Amount, 1.910 inch.
15. Rain at 4^h a. m. Amount, 0.696 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. orce.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Jan. 16	0	N.	1	N.	10	1869. Jan. 17	0	W. SW.	1	Clear	0	1869. Jan. 18	0	SW.	1	C. K.	10
	3	N.	1	N.	10		3	W. SW.	1	C. K.	2		3	SW.	1	K.	10
	6	N.	1	K.	10		6	SW.	1	C. K.	10		6	N.	1	K.	10
	9	N.	1	C. K. S.	8		9	S.	1	K.	10		9	N. NE.	1	K.	10
	Noon	NW.	2	Clear	0		Noon	S.	1	C. K.	10		Noon	NW.	1	N.	10
	3	NW.	1	Clear	0		3	S.	1	C. K.	10		3	NW.	1	C. K.	10
	6	NW.	1	C.	1		6	S.	1	C. K.	10		6	NE.	1	N.	10
	9	NW.	1	Clear	0		9	S.	1	K.	10		9	N.	1	N.	10
Jan. 19	0	NW.	1	C. K.	6	Jan. 20	0	S. SW.	1	Clear	0	Jan. 21	0	W.	1	Clear	0
	3	NW.	2	C.	3		3	S.	1	C. K.	4		3	NW.	2	Clear	0
	6	NW.	1	K.	10		6	SW.	1	C. K.	2		6	NW.	1	Clear	0
	9	NW.	1	K.	10		9	E.	1	Clear	0		9	SW.	1	C. K.	6
	Noon	W. NW.	2	C. K.	10		Noon	NW.	3	C. K.	4		Noon	SW.	3	C. K.	5
	3	NW.	2	C. K.	10		3	W. NW.	5	C. K.	5		3	W. SW.	2	C. K.	8
	6	NW.	1	Clear	10		6	NW.	3	C. K.	4		6	SW.	1	C. K.	7
	9	S. SW.	1	Clear	0		9	W.	1	C.	2		9	S.	1	C. K.	10
Jan. 22	0	W.	1	C. K.	10	Jan. 23	0	E.	2	C.	2	Jan. 24	0	W.	1	Clear	0
	3	W.	1	K.	10		3	NE.	1	Clear	0		3	SW.	1	Clear	0
	6	W.	1	K.	10		6	E.	1	K.	10		6	SW.	1	Clear	0
	9	W.	1	C. K.	10		9	SW.	1	C. K.	7		9	W.	1	Fog	
	Noon	W.	1	C. K.	10		Noon	S. SW.	1	Clear	0		Noon	S.	1	C. K.	4
	3	N. NE.	2	C. K.	10		3	SW.	1	Clear	0		3	SE.	1	C. K.	7
	6	E. NE.	1	C. K.	4		6	S. SW.	1	Clear	0		6	S. SW.	1	C. S.	6
	9	NE.	1	C. K.	10		9	SW.	1	Clear	0		9	S.	1	Clear	0
Jan. 25	0	SE.	1	Clear	0	Jan. 26	0	N.	3	Clear	0	Jan. 27	0	N.	1	C. K.	10
	3	S.	1	C. K.	4		3	NW.	2	Clear	0		3	NE.	1	K.	10
	6	S. SW.	1	C. K.	8		6	N.	1	Clear	0		6	NE.	1	K.	10
	9	NW.	1	C. K.	9		9	SE.	1	Clear	0		9	E. NE.	1	K.	10
	Noon	NW.	2	C. K.	6		Noon	SW.	1	Clear	0		Noon	S.	1	C. K.	9
	3	NW.	2	C. K.	8		3	W.	1	C.	3		3	S.	1	C. K.	5
	6	NW.	2	C. K.	6		6	W.	1	C. S.	2		6	SE.	1	K.	10
	9	NW.	3	C. K.	9		9	SW.	1	C. K.	10		9	S.	1	C. K.	10
Jan. 28	0	S. SW.	1	Clear	0	Jan. 29	0	N. NE.	1	C.	3	Jan. 30	0	SW.	1	N.	10
	3	SW.	1	Clear	0		3	N. NE.	1	C. K.	4		3	SW.	1	C. K.	10
	6	SW.	1	Clear	0		6	NW.	1	C. K.	4		6	SW.	1	Haze	
	9	SW.	1	Clear	0		9	N. NW.	1	C. K.	8		9	S.	1	C. K.	2
	Noon	NW.	2	Clear	0		Noon	SW.	3	C. K.	4		Noon	W.	3	C. K.	7
	3	W.	1	C.	6		3	S. SW.	1	C. K.	5		3	W. NW.	2	C. K.	3
	6	S. SW.	1	C. K.	7		6	SW.	1	C. K. S.	10		6	NW.	3	S.	1
	9	NW.	1	Clear	0		9	SW.	1	C. K.	10		9	NW.	5	S.	1

REMARKS.

January 20. A brilliant meteor moved from an altitude of 25° to near the horizon, where it exploded. Its direction was N. 20° W.
25. A large lunar halo at $8^h\ 40^m$ p. m.
29. Rain from $10^h\ 50^m$ p. m. to midnight. Amount, 0.220 inch.

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1869. Jan. 31	0	NW.	3	C. K.	9
	3	NW.	3	C. K.	10
	6	NW.	3	C. K.	10
	9	NW.	2	C. K. S.	9
	Noon	NW.	3	C. K.	6
	3	W. NW.	3	C. K.	6
	6	W. NW.	3	C. K.	5
	9	NW.	3	C. K.	4
Feb. 1	0	NW.	2	C. K.	5
	3	NW.	3	C. K.	3
	6	NW.	2	Clear	0
	9	NW.	1	Clear	0
	Noon	NW.	2	Clear	0
	3	W.	1	Clear	0
	6	W.	1	S.	1
	9	W.	1	S.	1
Feb. 2	0	NE.	1	Haze	
	3	NE.	1	Haze	
	6	NE.	1	C. K.	10
	9	E.	1	K.	10
	Noon	E.	2	K.	10
	3	E. NE.	1	N.	10
	6	E.	2	N.	10
	9	NE.	2	N.	10
Feb. 3	0	NE.	1	N.	10
	3	NE.	1	N.	10
	6	NW.	1	N.	10
	9	NW.	1	Fog	10
	Noon	NW.	1	K.	10
	3	NW.	1	Mist	10
	6	NW.	1	N.	10
	9	W. NW.	2	K.	10
Feb. 4	0	W. NW.	1	K.	10
	3	NE.	1	N.	10
	6	SW.	3	N.	10
	9	NW.	5	C. K. S.	10
	Noon	W. NW.	5	C. K. S.	8
	3	NW.	5	C. K.	10
	6	NW.	4	K. S.	2
	9	NW.	4	C. K.	10
Feb. 5	0	NW.	4	C. K.	2
	3	NW.	4	K.	10
	6	NW.	4	C. K. S.	8
	9	NW.	4	C. K.	3
	Noon	NW.	4	C. K.	8
	3	NW.	4	C. K.	3
	6	W.	3	Clear	0
	9	W.	3	Clear	0
Feb. 6	0	W.	2	Clear	0
	3	W.	1	Clear	0
	6	W.	1	Clear	0
	9	NW.	1	C. K.	7
	Noon	W.	2	C. K.	4
	3	SW.	1	C. K.	9
	6	W.	1	C. K.	3
	9	NW.	1	C. K.	3
Feb. 7	0	NW.	1	C. K.	3
	3	SW.	1	C. K.	5
	6	W. NW.	1	C. K.	9
	9	NE.	1	C. K.	10
	Noon	NE.	1	C. K.	10
	3	N.	2	C. K.	8
	6	NW.	1	K.	1
	9	NW.	1	Clear	0
Feb. 8	0	NW.	2	Clear	0
	3	NW.	1	Clear	0
	6	SW.	1	C. K. S.	9
	9	N.	1	C. K.	10
	Noon	S.	1	C. K.	6
	3	S. SE.	1	C. K.	7
	6	S.	1	Clear	0
	9	S.	1	Clear	0
Feb. 9	0	S.	1	C. K.	10
	3	SW.	1	N.	10
	6	SW.	1	N.	10
	9	NW.	1	N.	10
	Noon	W.	1	Fog	10
	3	S.	1	Fog	10
	6	E. NE.	1	N.	10
	9	E.	1	N.	10
Feb. 10	0	E.	1	N.	10
	3	E.	1	Mist	10
	6	NW.	1	K.	10
	9	NW.	1	C. K.	10
	Noon	NW.	1	K.	10
	3	NW.	1	K.	10
	6	W. NW.	1	C. K. S.	9
	9	NW.	2	Clear	0
Feb. 11	0	NW.	1	Clear	0
	3	NW.	1	Fog	
	6	W.	1	Fog	
	9	SW.	1	Fog	
	Noon	NW.	3	C. K.	4
	3	NW.	3	C.	1
	6	NW.	1	Clear	0
	9	NW.	1	Clear	0
Feb. 12	0	NW.	1	Clear	0
	3	NW.	1	Clear	0
	6	NW.	1	Clear	0
	9	S. SW.	1	C. K.	3
	Noon	S.	1	C. K.	6
	3	S.	1	C. K.	2
	6	S.	1	C. K.	7
	9	S.	1	C. K.	3

REMARKS.

February 2. Began to snow at 1^h p. m. Changed to rain at $8^h\ 40^m$ p. m. Depth of snow, 3.75 inches. Amount of rain and melted snow, 1.350 inch.
4. Light rain. Amount, 0.080 inch.
9. Rain at $1^h\ 15^m$ a. m. Amount, 0.570 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Feb. 13	0	S.	1	C. K.	2	1869. Feb. 14	0	S.	1	Clear	0	1869. Feb. 15	0	S.	2	N.	10
	3	SW.	1	Clear	0		3	SW.	1	Haze			3	SW.	2	N.	10
	6	SW.	1	Clear	0		6	SW.	1	C. K.	6		6	NE.	1	C. K.	10
	9	S.	1	S.	1		9	S.	1	C. K.	7		9	W.	1	C. K.	3
	Noon	SE.	1	C. S.	1		Noon	SW.	3	C. K.	9		Noon	S. SW.	1	C. K.	9
	3	S.	1	Clear	0		3	SW.	2	C. K.	9		3	NW.	2	C. K.	9
	6	SW.	1	C. K. S.	3		6	SE.	1	K.	10		6	NW.	3	C. K.	4
	9	S.	1	Clear	0		9	SE.	3	N.	10		9	NW.	2	C. K.	3
Feb. 16	0	NW.	2	Clear	0	Feb. 17	0	NW.	1	Clear	0	Feb. 18	0	SE.	1	K.	10
	3	NW.	2	C. K.	4		3	NW.	2	C. K.	6		3	NW.	5	C K.	4
	6	W. NW.	2	C. K.	8		6	SW.	1	C. K. S.	2		6	NW.	3	S.	1
	9	W.	3	C. K. S.	9		9	SW.	1	C. K.	10		9	NW.	4	C. K. S.	2
	Noon	W.	5	C. S.	4		Noon	S. SW.	1	C. K.	8		Noon	W. NW.	4	C. K.	5
	3	NW.	4	C. K.	10		3	S. SW.	1	C. K.	3		3	W. NW.	3	C. K.	9
	6	NW.	3	C. K. S.	3		6	SE.	1	C. K.	10		6	NW.	2	C. K.	9
	9	NW.	1	Clear	0		9	SE.	1	K.	10		9	W. NW.	1	C. K.	9
Feb. 19	0	W. NW.	1	C. K.	4	Feb. 20	0	NW.	1	C. K.	8	Feb. 21	0	NE.	1	Clear	0
	3	E.	1	K.	10		3	NW.	1	C. K.	7		3	N.	1	Clear	0
	6	S.	1	C. K.	6		6	NE.	1	C. K.	10		6	N.	1	C. S.	3
	9	NW.	3	C. S.	2		9	E.	1	C. K.	7		9	N. NE.	1	C. K.	4
	Noon	W.	5	C.	2		Noon	S.	1	Clear	0		Noon	E.	1	C. K.	10
	3	NW.	5	Clear	0		3	SE.	1	Haze			3	SE.	1	C. K.	9
	6	NW.	2	C. S.	2		6	NE.	1	Haze			6	SE.	1	K.	10
	9	NW.	1	Clear	0		9	NE.	1	Clear	0		9	SE.	1	C. K.	10
Feb. 22	0	S. SE.	1	K.	10	Feb. 23	0	NE.	1	N.	10	Feb. 24	0	W. NW.	3	C.	3
	3	S. SE.	1	C. K.	9		3	NE.	1	N.	10		3	W.	2	C.	4
	6	W.	1	C. K.	4		6	SE.	1	N.	10		6	W. SW.	1	C. S.	3
	9	NW.	1	Fog			9	S.	3	C. K.	9		9	W.	2	Clear	0
	Noon	W.	1	K.	10		Noon	NW.	3	C. K.	9		Noon	W.	3	C. K.	3
	3	N.	1	K.	10		3	NW.	4	C. K.	9		3	SW.	2	C. K.	2
	6	NE.	1	Mist	10		6	NW.	5	C. K.	9		6	NW.	2	C. K.	3
	9	N. NE.	1	N.	10		9	NW.	5	C. K.	7		9	NW.	2	Clear	0
Feb. 25	0	NW.	2	C. K.	3	Feb. 26	0	SE.	1	K.	10	Feb. 27	0	NW.	3	Clear	0
	3	W. NW.	1	C. K.	9		3	SE.	1	N.	10		3	NW.	3	C.	2
	6	NW.	1	C. K.	7		6	S. SE.	1	N.	10		6	W. NW.	3	Clear	0
	9	SW.	1	C. K.	8		9	S. SE.	1	N.	10		9	W.	3	C. K.	6
	Noon	S.	2	C. K.	8		Noon	SW.	1	Haze			Noon	W.	3	C. K.	7
	3	S. SE.	1	C. K.	8		3	W.	1	C. K.	10		3	W.	3	C. K,	3
	6	SE.	2	K.	10		6	SW.	1	K.	10		6	NW.	3	C. K.	3
	9	SE.	1	K.	10		9	NW.	3	C.	2		9	NW.	3	Clear	0

REMARKS.

February 14. Rain during the evening. Amount, 0.362 inch.
15. Heavy rain during the morning. Amount, 1.634 inch.
19. A very light shower at $4^h\ 20^m$ a. m.
22. Raining at intervals during the day. Amount, 0.306 inch.
26. Rain and snow during the day. Depth of snow, 3.875 inches. Amount of rain and melted snow, 0.312 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869.						1869.						1869.					
Feb. 28	0	NW.	2	Clear	0												
	3	NW.	2	Clear	0												
	6	NW.	3	C. K.	2												
	9	NW.	3	Clear	0												
	Noon	NW.	3	Clear	0												
	3	NW.	2	C. S.	2												
	6	NW.	1	C. K. S.	3												
	9	NW.	2	C. S.	1												
Mar. 1	0	NW.	2	Clear	0	Mar. 2	0	S.	1	C. K.	10	Mar. 3	0	NW.	1	C. K.	2
	3	N. NW.	2	Clear	0		3	S.	1	K.	10		3	NW.	3	Clear	0
	6	NW.	1	Clear	0		6	S.	1	K.	10		6	NW.	2	Clear	0
	9	NW.	2	Clear	0		9	SW.	1	C. K.	3		9	NW.	2	C. S.	2
	Noon	NW.	2	C. K.	2		Noon	W.	1	C. K.	2		Noon	N.	2	C.	3
	3	W. NW.	2	C. K.	2		3	NW.	1	C. K.	9		3	NW.	1	C. K.	8
	6	SE.	1	C. S.	2		6	NW.	1	C. K.	9		6	NW.	1	K.	10
	9	SE.	1	C.	2		9	NW.	1	C. K.	4		9	NW.	1	C. K.	10
Mar. 4	0	E.	1	K.	10	Mar. 5	0	NW.	4	S.	1	Mar. 6	0	E.	2	K.	10
	3	E.	1	K.	10		3	NW.	3	Clear	0		3	E.	1	K.	10
	6	E. NE.	1	N.	10		6	NW.	2	Clear	0		6	NW.	1	N.	10
	9	SE.	1	N.	10		9	NW.	2	Clear	0		9	S.	1	C. K.	9
	Noon	NW.	1	C. K.	9		Noon	W. SW.	2	Clear	0		Noon	NW.	5	C. K.	4
	3	NW.	3	C. K.	5		3	S.	1	Clear	0		3	NW.	5	N.	8
	6	NW.	3	C. S.	4		6	SE.	1	Clear	0		6	NW.	5	C. K. S.	9
	9	NW.	5	C.	1		9	SE.	2	Clear	0		9	NW.	4	Clear	0
Mar. 7	0	NW.	4	Clear	0	Mar. 8	0	W.	1	C.	2	Mar. 9	0	NW.	1	K.	10
	3	NW.	3	Clear	0		3	SE.	1	K.	10		3	NW.	1	K.	10
	6	NW.	4	Clear	0		6	SW.	1	C. K.	10		6	W.	1	C. K.	3
	9	NW.	3	Clear	0		9	SW.	1	C. K.	9		9	W.	1	Haze	
	Noon	NW.	2	C.	3		Noon	NW.	1	C. K.	9		Noon	S.	1	Haze	
	3	W.	2	C. K.	4		3	NW.	1	C. K.	10		3	S.	1	Haze	
	6	S.	1	C. K. S.	6		6	W. NW.	1	C. K.	10		6	SE.	2	C. K.	10
	9	S.	1	Clear	0		9	NW.	1	K.	10		9	SE.	1	K.	10
Mar. 10	0	E.	1	N.	10	Mar. 11	0	NW.	4	C. K.	4	Mar. 12	0	NE.	1	K.	10
	3	E.	1	N.	10		3	NW.	3	Clear	0		3	NE.	1	N.	10
	6	E.	1	N.	10		6	NW.	2	C. K.	6		6	N.	1	N.	10
	9	S.	1	N.	10		9	NW.	2	C. K.	6		9	NW.	3	C. K.	9
	Noon	S.	2	N.	10		Noon	NW.	2	C. K.	4		Noon	NW.	3	C.	1
	3	S.	1	N.	10		3	NW.	1	C. K.	6		3	NW.	2	C.	1
	6	S.	3	C. K.	6		6	N. NE.	1	C. K.	9		6	S.	2	Clear	0
	9	S.	2	C.	3		9	NE.	1	K.	10		9	SE.	2	Clear	0

REMARKS.

March 4. Rain from 4^h 50^m a. m. to 11^h 50^m a. m. Amount, 0.106 inch.
6. Snow in the forenoon at intervals. Depth, 0.25 inch.
9. A light shower of rain at 7^h p. m.
10. Rain during the day. Amount, 0.486 inch.
12. Snow at 3^h a. m. Depth, 0.75 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. Mar. 13	0	SE.	2	C. K.	10	1869. Mar. 14	0	SW.	1	K.	10	1869. Mar. 15	0	S.	1	Clear	0
	3	S.	1	C. K.	7		3	NW.	1	K.	10		3	SW.	1	Clear	0
	6	S.	1	C. K. S.	10		6	SW.	1	C. K.	9		6	N.	2	C. K. S.	10
	9	S.	1	C. K.	8		9	S.	1	Haze			9	N. NE.	2	N.	10
	Noon	SE.	2	C. K. S.	4		Noon	S.	2	Haze			Noon	N. NW.	2	N.	10
	3	SW.	2	C. K.	4		3	SW.	3	Haze			3	N. NW.	2	C. K.	9
	6	W. SW.	1	C. K. S.	4		6	SW.	1	C. K. S.	4		6	NW.	2	C. K. S.	7
	9	SW.	1	K.	10		9	S.	1	S.	1		9	NW.	2	Clear	0
Mar. 16	0	NW.	3	Clear	0	Mar. 17	0	SE.	2	C. K.	10	Mar. 18	0	NW.	2	Clear	0
	3	NW.	3	Clear	0		3	SW.	1	C. K.	10		3	NW.	3	S.	2
	6	NW.	2	C. K. S.	3		6	N.	1	K.	10		6	NW.	2	S.	1
	9	N. NE.	1	C. K.	3		9	N.	1	K.	10		9	NW.	3	Clear	0
	Noon	S.	2	C. K.	3		Noon	SW.	1	C. K.	8		Noon	N. NW.	3	Clear	0
	3	S.	1	C. K.	7		3	SW.	1	C. K.	8		3	N. NW.	2	C.	1
	6	S.	1	C. K. S.	9		6	SW.	1	C. K.	10		6	W.	1	C.	2
	9	SE.	1	C. K.	3		9	W.	2	C. S.	2		9	W.	1	Clear	0
Mar. 19	0	W.	1	C. K.	2	Mar. 20	0	S.	1	N.	10	Mar. 21	0	N.	1	S.	1
	3	SW.	1	C. K.	5		3	S.	1	N.	10		3	N.	2	S.	2
	6	N.	1	Haze			6	SW.	1	N.	10		6	N.	1	S.	1
	9	S.	1	C. K.	10		9	W.	1	C. K.	9		9	NE.	1	C. S.	2
	Noon	S.	3	C. K.	10		Noon	W. NW.	1	C. K.	9		Noon	N.	2	C.	1
	3	SW.	3	N.	10		3	NW.	2	C. K.	8		3	NE.	2	C.	1
	6	S.	1	K.	10		6	NW.	1	C. K. S.	9		6	NE.	2	C.	1
	9	S.	2	N.	10		9	N.	2	C. K.	10		9	NE.	1	Clear	0
Mar. 22	0	NE.	1	Clear	0	Mar. 23	0	NE.	1	N.	10	Mar. 24	0	W.	1	Clear	0
	3	N.	1	Clear	0		3	NW.	1	C. K.	8		3	W.	1	Clear	0
	6	N.	1	C. K.	3		6	W.	1	C. S.	5		6	NW.	1	C. S.	2
	9	E.	2	C. K.	9		9	NW.	2	C. K.	4		9	S.	1	C.	3
	Noon	SE.	3	C. K.	10		Noon	NW.	4	C. K.	5		Noon	W.	1	C.	2
	3	E. SE.	2	C. K.	10		3	NW.	3	C. K.	2		3	W. SW.	1	C. K.	10
	6	SE.	2	N.	10		6	NW.	2	Clear	0		6	W.	1	C. K.	8
	9	E.	2	N.	10		9	NW.	1	Clear	0		9	W. NW.	1	C. K.	3
Mar. 25	0	NW.	2	C. K.	4	Mar. 26	0	S.	1	N.	10	Mar. 27	0	SW.	1	C. K.	8
	3	NW.	2	Clear	0		3	S.	1	N.	10		3	W.	1	C. K.	10
	6	NW.	2	Haze			6	NE.	1	K.	10		6	W.	1	C. K. S.	7
	9	SW.	1	Haze			9	NE.	1	N.	10		9	W.	1	S.	1
	Noon	SE.	1	C. K.	10		Noon	SE.	1	N.	10		Noon	W.	2	C.	4
	3	SE.	1	C. K.	10		3	SE.	1	N.	10		3	W.	1	C.	3
	6	SE.	1	K.	10		6	SE.	1	N.	10		6	N. NW.	1	C. K.	4
	9	SE.	1	N.	10		9	SW.	1	K.	10		9	NW.	1	Clear	0

REMARKS.

March 14. A light shower at 4^h a. m.
15. Rain at 6^h 10^m a. m. Amount, 0.220 inch.
18. At 3^h a. m. considerable display of the aurora borealis. There were a few faint streamers. Traces of the light remained until dawn.
19. Rain in the afternoon and night. Amount, 0.160 inch.
22. Snow and rain during the afternoon. Amount, 0.574 inch.
25. Light showers during the night.
26. Rain during the day. Amount, 0.980 inch.

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1869. Mar. 28	0	NW.	1	C. K.	3	1869. Mar. 29	0	NE.	1	N.	10	1869. Mar. 30	0	NW.	1	K.	10
	3	NW.	1	Clear	0		3	NE.	2	N.	10		3	SW.	1	C. K.	9
	6	NE.	1	C. K.	3		6	NE.	2	N.	10		6	SW.	1	C. K. S.	7
	9	NE.	1	C. K.	9		9	NE.	2	N.	10		9	W.	1	C. K.	10
	Noon	E.	1	C. K.	10		Noon	N.	1	N.	10		Noon	NW.	4	C. K.	8
	3	E. SE.	1	C. K.	10		3	N.	2	N.	10		3	W. NW.	5	C. K.	6
	6	SE.	1	C. K.	10		6	NW.	1	N.	10		6	NW	3	C. K.	7
	9	SE.	1	K.	10		9	NW.	1	N.	10		9	NW.	4	C. K.	8
Mar. 31	0	NW.	4	C. K.	8												
	3	NW.	4	C. K.	3												
	6	NW.	3	C. K.	2												
	9	NW.	3	C. K.	2												
	Noon	NW.	4	C. K.	2												
	3	W.	3	C. K.	4												
	6	NW.	2	C. K.	6												
	9	NW.	1	C. S.	2												
Apr. 1	0	NW.	2	C. S.	3	Apr. 2	0	SE.	1	K.	3	Apr. 3	0	NW.	3	C. K.	6
	3	N.	1	C. K.	9		3	NE.	1	C. K.	10		3	NW.	3	C. K.	8
	6	N.	1	C. K.	10		6	NE.	1	C. K.	10		6	NW.	3	C. K.	9
	9	N. NW.	1	C. K.	9		9	E.	1	C. K.	10		9	NW.	3	C. K.	9
	Noon	W.	1	N.	10		Noon	N.	1	C. K. S.	8		Noon	NW.	3	C. K.	7
	3	S. SW.	1	Haze			3	E.	1	N.	10		3	NW.	3	C. K.	4
	6	S.	1	C. K. S.	9		6	NW.	1	N.	10		6	NW.	2	C. S.	4
	9	NE.	1	K.	10		9	NW.	3	C. K.	10		9	NW.	2	S.	1
Apr. 4	0	W.	2	C. K.	8	Apr. 5	0	NW.	1	C. K.	2	Apr. 6	0	SW.	1	C. K.	2
	3	SW.	1	C. K.	4		3	NW.	2	Clear	0		3	W.	2	C. K.	3
	6	SW.	1	C. S.	2		6	SW.	1	C.	3		6	W.	1	C. K.	3
	9	W.	3	C. K.	8		9	SW.	3	S.	1		9	SW.	2	C. K.	2
	Noon	W. NW.	3	C. K.	5		Noon	W. SW.	3	C. K. S.	6		Noon	W.	4	C. K.	7
	3	W.	3	C. K.	7		3	SW.	2	C. K.	10		3	NW.	2	C. K.	9
	6	W.	2	C. K. S.	7		6	S. SW.	1	C. K. S.	8		6	W. NW.	1	C. K.	10
	9	NW.	1	C.	3		9	SW.	2	C. K.	3		9	W.	3	C.	10
Apr. 7	0	SW.	1	N	10	Apr. 8	0	NW.	2	Clear	0	Apr. 9	0	SW.	2	C. K.	3
	3	W.	1	N	10		3	NW.	1	Clear	0		3	SW.	1	C. K.	8
	6	SW.	1	C. K.	8		6	SW.	1	C. S.	1		6	NE.	1	C. K.	9
	9	W.	2	C. K.	3		9	SW.	3	Clear	0		9	SE.	1	C. K.	10
	Noon	W.	2	C. K.	7		Noon	W.	3	C. K.	5		Noon	W.	1	C. K.	10
	3	W.	3	C. K.	4		3	W.	2	C.	2		3	W. NW.	1	C. K.	10
	6	NW.	2	C. S.	1		6	W. NW.	2	Clear	0		6	W.	1	C. K. S.	8
	9	NW.	2	Clear	0		9	NW.	2	Clear	0		9	W.	1	Clear	0

REMARKS.

March 28. Light shower at 8^h 20 p. m.
29. Heavy rain during the day. Amount, 1.460 inch.
April 1. A light shower at noon.
2. Light rain in the afternoon.
6. Began to rain at 9^h 30^m p. m., and continued until 4^h a. m. on the 7th. Amount, 0.174 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Apr. 10	0	W.	1	C. S.	3	1869. Apr. 11	0	W.	1	N.	10	1869. Apr. 12	0	NW.	1	Clear	0
	3	W.	1	C. S.	4		3	SW.	1	N.	10		3	NW.	1	Clear	0
	6	W.	1	C. S.	3		6	NW.	1	N.	10		6	NW.	1	C. K.	6
	9	NW.	2	C. K.	6		9	NE.	1	N.	10		9	NW.	1	Clear	0
	Noon	W.	1	C. K.	10		Noon	N.	1	N.	10		Noon	NW.	1	C. K.	2
	3	W.	1	K.	10		3	NW.	1	N.	10		3	SW.	1	C. K.	7
	6	W.	1	C. K.	10		6	W.	1	C. K.	4		6	W. SW.	1	C. K.	8
	9	W.	1	N.	10		9	W. NW.	1	C. K.	2		9	W.	1	C. K.	9
Apr. 13	0	NW.	2	N.	10	Apr. 14	0	NW.	2	C. K. S.	8	Apr. 15	0	NW.	1	Clear	0
	3	NW.	2	K.	10		3	NW.	2	Clear	0		3	NW.	1	Clear	0
	6	NW.	2	C.	4		6	NW.	2	Clear	0		6	NW.	2	Clear	0
	9	N.	2	C. K.	6		9	N. NW.	3	C.	1		9	NW.	1	C.	2
	Noon	NW.	1	C. K.	8		Noon	NW.	3	C. K.	8		Noon	NW.	1	Haze	
	3	NW.	2	C. K.	8		3	NW.	3	C.	4		3	S.	1	C.	3
	6	NW.	2	C. K. S.	7		6	NW.	2	C. K.	6		6	W.	1	C. S.	3
	9	NW.	1	C. S.	2		9	NW.	2	Clear	0		9	W.	1	S.	1
Apr. 16	0	SW.	1	S.	1	Apr. 17	0	S.	1	Clear	0	Apr. 18	0	NW.	1	Clear	0
	3	S.	1	Haze			3	S.	1	C.	3		3	NW.	1	Clear	0
	6	S.	1	Haze			6	S.	2	C. K.	10		6	NW.	1	C.	2
	9	SE.	1	C.	3		9	W.	2	N.	10		9	NW.	1	Haze	
	Noon	S. SE.	2	C.	2		Noon	W.	3	C.	2		Noon	SE.	1	C. K.	7
	3	S.	2	Clear	0		3	W.	3	C.	2		3	S. SE.	1	C. K.	8
	6	S.	1	Clear	0		6	NW.	2	Clear	0		6	S.	1	C. K.	6
	9	SW.	1	Clear	0		9	NW.	1	Clear	0		9	S.	1	C.	1
Apr. 19	0	S.	1	C. K.	8	Apr. 20	0	S.	1	C. K.	8	Apr. 21	0	S.	1	C. K.	6
	3	S.	1	K.	10		3	S.	2	C. K.	10		3	S. SW.	1	N.	10
	6	S.	2	C. K.	9		6	S. SW.	2	C. K.	10		6	W.	1	C. K.	7
	9	S.	3	C. K.	6		9	S.	3	C. K.	10		9	SW.	3	C. K.	3
	Noon	S.	3	C. K.	8		Noon	S.	5	C. K.	10		Noon	SW.	2	C. K.	3
	3	S.	4	C. K.	8		3	S.	5	C. K.	10		3	W. SW.	3	C. K.	3
	6	S.	3	C. K.	4		6	S. SE.	1	N.	10		6	W.	2	Clear	0
	9	S.	2	C. K.	3		9	S.	1	N.	10		9	NW.	2	Clear	0
Apr. 22	0	NW.	2	Clear	0	Apr. 23	0	SW.	1	Clear	0	Apr. 24	0	NE.	1	C. K.	10
	3	W.	2	Clear	0		3	NE.	1	C.	3		3	N.	1	C. K.	7
	6	W.	2	Clear	0		6	NE.	2	C. K.	7		6	W.	1	C. K.	9
	9	W. NW.	2	Clear	0		9	S. SE.	1	C.	4		9	S.	1	C. K.	10
	Noon	W.	3	C.	2		Noon	S. SW.	1	C.	4		Noon	S. SW.	1	N.	10
	3	NW.	2	C. K.	2		3	SE.	1	C. K.	4		3	SW.	1	C. K.	10
	6	SE.	1	C. K.	7		6	NE.	1	C. K.	9		6	S.	1	C. K.	2
	9	S.	1	Clear	0		9	NE.	1	C. K.	8		9	S.	1	C. K.	8

REMARKS.

April 10. Rain and snow from 9^h p. m. until 3^h p. m. on the 11th. Amount of rain and melted snow, 0.772 inch.
12. Light rain at 11^h p. m. Amount, 0.034 inch.
17. Light showers during the morning. Amount of rain, 0.070 inch.
20. Light showers during the morning. A heavy shower at 3^h 20^m p. m. Amount of rain, 1.006 inch.
21. Light rain in the morning. Amount, 0.136 inch.
24. Rain during the forenoon. The rain-gauge was found displaced, and no record was obtained.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Apr. 25	0	W.	1	Clear	0
	3	NW.	2	C. S.	4
	6	NW.	3	C. K.	5
	9	NW.	4	C. K.	5
	Noon.	NW.	5	C. K.	4
	3	NW.	3	C. K.	3
	6	NW.	3	C. K.	3
	9	W. NW.	1	Clear	0
1869. Apr. 26	0	NW.	1	Clear	0
	3	NW.	1	Clear	0
	6	NW.	1	Clear	0
	9	W. NW.	1	Clear	0
	Noon	S.	1	S.	1
	3	S. SW.	2	C. K.	7
	6	SW.	1	C. K.	9
	9	S.	1	C. K.	10
1869. Apr. 27	0	S.	1	C. K.	10
	3	W.	1	C. K.	10
	6	W.	1	C. K.	9
	9	W.	1	C. K.	8
	Noon	S. SE.	1	C. K.	10
	3	S.	1	C. K.	9
	6	S.	1	C. K.	10
	9	W.	1	K.	10
Apr. 28	0	W.	1	C. K.	6
	3	W.	1	C.	4
	6	W.	1	C. K.	8
	9	W.	2	C. K.	8
	Noon	NW.	2	C. K.	7
	3	SW.	1	C. K.	9
	6	S.	1	C. K.	8
	9	NW.	2	C. K.	10
Apr. 29	0	NW.	2	C. K.	10
	3	W.	1	C. K.	10
	6	SW.	1	C. K.	3
	9	W.	3	C. K.	3
	Noon	W.	3	C. K.	6
	3	NW.	3	C. K.	8
	6	NE.	3	C. K.	9
	9	NE.	2	C. K.	10
Apr. 30	0	N.	1	C. K.	6
	3	NE.	1	C. K.	6
	6	NE.	1	C. K.	9
	9	NE.	1	C. K.	10
	Noon	SW.	1	C. K.	9
	3	W.	1	C. K.	10
	6	SE.	1	C. K.	10
	9	E.	2	K.	10
May 1	0	E.	2	K.	10
	3	NE.	2	N.	10
	6	NE.	2	N.	10
	9	NE.	2	N.	10
	Noon	NE.	3	N.	10
	3	NE.	2	N.	10
	6	N.	1	N.	10
	9	W. NW.	1	N.	10
May 2	0	NW.	1	K.	10
	3	NE.	2	N.	10
	6	N.	2	N.	10
	9	NW.	2	N.	10
	Noon	NW.	2	N.	10
	3	NW.	1	K.	10
	6	NW.	3	K.	9
	9	NW.	2	C. K.	8
May 3	0	NW.	3	C. K.	3
	3	W.	2	C. K.	3
	6	W.	2	Clear	0
	9	W. NW.	3	C. K.	2
	Noon	W.	4	C. K.	5
	3	W.	4	C. K.	4
	6	NW.	4	C. K.	3
	9	NW.	1	C.	2
May 4	0	W.	1	C. K.	4
	3	W.	1	C. K.	8
	6	W.	2	C.	2
	9	NW.	3	C. K.	2
	Noon	NW.	3	C. K. S.	2
	3	NW.	3	Clear	0
	6	NW.	2	Clear	0
	9	NW.	1	Clear	0
May. 5	0	NW.	1	Clear	0
	3	NW.	1	C. K.	4
	6	NW.	1	C. K.	10
	9	W.	1	C. K.	10
	Noon	NE.	1	C. K.	10
	3	SE.	1	C. K.	7
	6	S.	1	C. K.	4
	9	E.	2	C. K.	7
May 6	0	E.	1	C. K.	3
	3	NE.	1	K.	10
	6	E.	1	C. K.	10
	9	NE.	1	K.	10
	Noon	SW.	1	C. K.	10
	3	SW.	1	C. K.	10
	6	E.	1	C. K.	10
	9	E.	1	K.	10
May 7	0	NE.	1	N.	10
	3	NW.	1	N.	10
	6	NW.	1	N.	10
	9	NW.	1	C. K.	10
	Noon	W. NW.	1	N.	10
	3	SW.	1	C. K.	9
	6	NE.	1	N.	10
	9	N.	1	K.	10
May 8	0	N.	2	C. K.	9
	3	NW.	2	C. K.	8
	6	NW.	1	C. K.	7
	9	NE.	1	C. K,	8
	Noon	N.	1	C. K.	7
	3	S.	1	C. K.	5
	6	SW.	1	C. K.	6
	9	W.	1	C. K.	10
May 9	0	W. NW.	1	C. K.	10
	3	NW.	2	C. K.	8
	6	NW.	3	C. K.	9
	9	NW.	2	C. K.	10
	Noon	NW.	2	C. K.	10
	3	W. NW.	1	C. K. S.	7
	6	W. SW.	1	C. K.	4
	9	W.	1	C.	3

REMARKS.

April 27. Lightning during the evening.
28. Lightning, with distant thunder, at 7^h p. m.
29. Rain at 1^h a. m., 11^h a. m., and $1^h\ 30^m$ p. m. Amount, 0.130 inch.
30. A well-defined circle of 10° radius around the sun at 11^h a. m.
May 1. Commenced raining at 2^h a. m., and continued until $2^h\ 30^m$ p. m. on the 2d. Amount, 1.904 inch.
5. Quite a display of the aurora borealis at 1^h a. m. A light shower at $6^h\ 55^m$ a. m.
7. Rain at intervals during the day. Amount, 0.200 inch.
8. A light shower at 7^h p. m.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. May 10	0	W.	1	C.	4	1869. May 11	0	SE.	1	C.	2	1869. May 12	0	S.	1	Clear	0
	3	W.	1	C. K.	8		3	SW.	1	Clear	0		3	S.	1	C. K.	2
	6	W.	1	C. K.	6		6	NW.	1	C.	3		6	S.	1	Haze	
	9	NW.	3	Haze			9	S.	1	C.	1		9	S.	2	Haze	
	Noon	NW.	3	Haze			Noon	SE.	2	Haze			Noon	S.	3	C. K.	4
	3	NW.	3	Haze			3	S.	1	C.	1		3	S.	3	C. K.	7
	6	SE.	1	C. K.	2		6	S.	1	Haze			6	S.	3	C. K.	6
	9	S.	1	Clear	0		9	S.	1	Clear	0		9	S.	2	C. K.	8
May 13	0	S.	2	C. K.	6	May 14	0	W.	1	Clear	0	May 15	0	SE.	1	C. K.	5
	3	S.	3	C. K.	4		3	SW.	1	C. K.	10		3	SW.	1	C. K.	9
	6	S.	3	N.	10		6	SW.	1	C. K.	9		6	W.	2	C. K.	9
	9	S. SE.	3	N.	10		9	S.	1	C. K.	10		9	NW.	3	C. K.	7
	Noon	S.	3	C. K.	5		Noon	SW.	1	N.	10		Noon	NW.	2	C. K.	7
	3	S.	2	N.	6		3	W.	1	N.	10		3	W.	2	C. K.	8
	6	W.	1	N.	9		6	NW.	2	N.	10		6	W.	1	C. K.	5
	9	SW.	1	C. K.	8		9	W. SW.	1	C. K.	10		9	W.	1	Clear	0
May 16	0	W.	1	Clear	0	May 17	0	NW.	2	C.	2	May 18	0	W. NW.	3	C. K.	2
	3	SW.	1	C.	4		3	NW.	2	C.	3		3	NW.	2	C. K.	3
	6	SW.	1	K.	10		6	SW.	1	C. K.	4		6	NW.	2	C. K.	6
	9	S.	1	N.	10		9	W. NW.	3	C. K.	4		9	N.	2	C. K.	9
	Noon	W.	2	C. K.	8		Noon	W.	3	C.	3		Noon	NW.	1	C. K.	10
	3	SW.	3	C. K.	9		3	W. NW.	3	C.	3		3	N.	1	C. K.	7
	6	NW.	3	C. K.	2		6	NW.	3	C. K.	2		6	SW.	1	C. K.	9
	9	NW.	3	Clear	0		9	NW.	3	Clear	0		9	SE.	1	C. K.	10
May 19	0	E.	1	K.	10	May 20	0	NW.	2	C. K.	8	May 21	0	W.	1	C. K.	9
	3	E.	1	N.	10		3	NW.	3	Clear	0		3	NW.	1	C. K.	5
	6	SW.	1	N.	10		6	NW.	2	C.	1		6	W. NW.	1	C. K.	9
	9	W.	1	N.	10		9	W. NW.	3	C.	1		9	NE.	1	C. K.	10
	Noon	NW.	1	N.	10		Noon	W. NW.	3	C.	3		Noon	S. SW.	1	C. K.	7
	3	N.	1	C. K.	9		3	W. NW.	3	C. K.	4		3	SE.	1	C. K.	10
	6	W.	1	C. K.	10		6	W. NW.	2	C. K.	2		6	N.	2	N.	10
	9	NW.	3	C. K.	2		9	W.	1	Clear	0		9	NW.	1	N.	10
May 22	0	W.	1	N.	10	May 23	0	NW.	3	C. K.	5	May 24	0	W.	2	Clear	0
	3	SW.	1	N.	10		3	NW.	1	Clear	0		3	W.	2	Haze	
	6	W.	1	K.	10		6	NW.	2	Clear	0		6	NW.	2	Haze	
	9	N. NE.	2	C. K.	10		9	N.	3	Clear	0		9	NW.	2	Haze	
	Noon	N.	2	N.	10		Noon	NW.	3	Clear	0		Noon	NW.	1	Haze	
	3	NW.	1	C. K.	9		3	W.	2	Haze			3	W.	1	Haze	
	6	N. NW.	1	C. K.	6		6	W. NW.	1	Haze			6	SW.	1	Haze	
	9	NW.	2	C. K.	7		9	W. NW.	1	Haze			9	W.	1	Haze	

REMARKS.

May 13. A few hailstones, accompanied by a light shower of rain, at 3^h p. m. Showers during the evening. Amount of rain, 0.120 inch.
16. A light shower at 9^h a. m. Amount, 0.164 inch.
19. Rain during the morning and forenoon. Amount, 0.570 inch.
21. Rain at 8^h 50^m a. m. and 5^h 30^m p. m. Amount, 0.574 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. May 25	0	W.	1	Haze		1869. May 26	0	S. SW.	1	Haze		1869. May 27	0	W.	1	C. K.	3
	3	W.	1	Haze			3	SW.	1	C. K.	4		3	W.	1	C. K. S.	4
	6	W.	1	Haze			6	SW.	1	C. K.	6		6	NW.	2	C. K.	7
	9	W.	1	Haze			9	S. SW.	1	C.	4		9	N. NW.	3	C. K.	9
	Noon	W. NW.	1	Haze			Noon	NW.	3	C.	4		Noon	N. NE.	3	C. K.	10
	3	W.	1	C. K.	5		3	W.	3	C. K.	5		3	NE.	3	C. K.	10
	6	S.	1	C. K.	2		6	W.	1	C. K.	5		6	E. NE.	3	K.	10
	9	S.	1	Clear	0		9	W.	1	C. K.	3		9	E.	1	K.	10
May 28	0	NE.	1	K.	10	May 29	0	S.	2	C.	10	May 30	0	SE.	1	C. K.	10
	3	N.	1	K.	10		3	SW.	1	C. K.	10		3	SE.	1	N.	10
	6	NE.	2	K.	10		6	SW.	1	K.	10		6	NW.	1	C. K.	8
	9	E.	2	K.	10		9	S.	1	C. K.	6		9	S. SW.	1	C. K.	8
	Noon	SE.	1	K.	10		Noon	S.	1	C. K.	8		Noon	SW.	1	C. K.	3
	3	S.	1	K.	10		3	W.	1	C.	2		3	SE.	1	C. K.	10
	6	NE.	1	K.	10		6	E. NE.	2	N.	10		6	SW.	1	C. K.	9
	9	NE.	1	K.	10		9	W.	1	N.	10		9	W.	1	C.	2
May 31	0	W.	1	Clear	0												
	3	SW.	1	C.	3												
	6	SW.	1	C. K.	6												
	9	S. SE.	2	Haze													
	Noon	S.	1	Haze													
	3	S.	1	Haze													
	6	S. SW.	1	C. K.	10												
	9	N.	1	C. K.	9												
June 1	0	NW.	1	C. K.	8	June 2	0	W.	1	C. K.	8	June 3	0	W.	1	K.	10
	3	W.	1	C. K.	10		3	SW.	1	C. K.	10		3	NE.	1	K.	10
	6	SW.	1	C. K.	10		6	SW.	1	C. K.	10		6	NE.	1	K.	10
	9	W.	2	C.	4		9	SW.	1	C. K.	10		9	N.	2	C. K.	7
	Noon	W.	1	C. K.	6		Noon	SW.	1	C. K.	10		Noon	SE.	2	C. K.	8
	3	W.	1	C. K.	9		3	W.	1	C. K.	10		3	SE.	2	C. K.	6
	6	NW.	1	N.	10		6	S.	1	N.	10		6	SE.	2	C. K.	10
	9	NW.	1	C. K.	10		9	N.	1	K.	10		9	SW.	1	C. K.	3
June 4	0	SE.	1	K.	10	June 5	0	S.	1	K.	10	June 6	0	NW.	3	Clear	0
	3	SE.	1	K.	10		3	SW.	2	C. K.	7		3	NW.	2	Clear	0
	6	SE.	1	N.	10		6	W.	1	C. K.	8		6	NW.	2	Clear	0
	9	S.	1	C. K.	8		9	S. SW.	1	C. K.	7		9	NW.	2	C. K.	5
	Noon	S.	1	C. K.	7		Noon	SW.	2	C. K.	9		Noon	N. NW.	2	C. K.	7
	3	S.	1	C. K.	8		3	S.	1	C. K.	10		3	SW.	2	C. K.	5
	6	SE.	2	N.	10		6	W. NW.	2	K.	10		6	NW.	1	C. K.	3
	9	SE.	2	N.	10		9	NW.	3	S.	2		9	W.	1	S.	1

REMARKS.

May 27. Shower of rain at 6^h p. m. Amount, 0.106 inch.
29. Showers during the evening. Amount of rain, 0.600 inch.
30. Rain in the morning. Amount, 0.654 inch.
June 1. A brisk shower at 6^h p. m. Amount, 0.270 inch.
4. Mist at 3^h 30^m a. m. Showery from 6^h to 11^h p. m. Amount, 0.220 inch.
5. A brisk shower at 2^h p. m. Amount, 0.150 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. June 7	0	NW.	2	C. K.	2	1869. June 8	0	NW.	1	C. K.	2	1869. June 9	0	N.	1	Clear	0
	3	NW.	1	C. K.	2		3	SW.	1	C. K.	3		3	N.	1	C.	4
	6	W. NW.	2	C. K.	6		6	NW.	1	Hazy			6	N.	2	C.	3
	9	NW.	1	C. S.	5		9	W.	2	Hazy			9	NE.	2	C. K.	7
	Noon	W.	2	C. K.	7		Noon	W. NW.	2	Hazy			Noon	E. SE.	1	C. K.	8
	3	W. NW.	2	C. K.	4		3	NW.	2	Hazy			3	SE.	2	C. K.	9
	6	NW.	1	C. K.	2		6	W. NW.	2	C. K.	8		6	SE.	1	C. K.	8
	9	NW.	1	Clear	0		9	N.	1	C.	4		9	S.	2	C. K. S.	3
June 10	0	SE.	3	C. K.	10	June 11	0	W.	1	C. K.	2	June 12	0	N.	1	C. K.	8
	3	SE.	2	K.	10		3	NW.	1	C. K.	2		3	N.	1	C. K.	8
	6	S.	3	N.	10		6	NW.	2	Haze			6	N.	1	C. K.	10
	9	SW.	1	N.	10		9	NW.	2	Clear	0		9	SW.	1	C. K.	10
	Noon	S. SW.	2	N.	10		Noon	W.	1	C. K.	6		Noon	W.	1	N.	10
	3	W.	1	K.	10		3	W. NW.	2	C. K.	4		3	SE.	1	Clear	0
	6	SW.	1	C. K.	8		6	W. NW.	2	C.	3		6	S.	1	C. K.	10
	9	SW.	1	K.	10		9	N.	1	C.	1		9	S.	1	C. K.	3
June 13	0	SW.	1	C.	2	June 14	0	S. SW.	3	K.	10	June 15	0	W.	1	K.	10
	3	SW.	1	C. K.	3		3	SW.	1	C. K.	10		3	W.	1	N.	10
	6	S.	1	C. K.	10		6	SW.	1	N.	10		6	W.	1	N.	10
	9	S.	2	C.	4		9	SW.	1	C. K.	10		9	S.	1	C. K.	9
	Noon	S. SW.	3	C. K.	8		Noon	SW.	2	C. K.	9		Noon	W. SW.	1	C. K.	9
	3	S. SW.	4	C. K.	8		3	S.	2	C. K.	10		3	S.	1	C. K.	5
	6	S.	1	C. K.	9		6	S.	2	K.	10		6	S.	1	C. K.	3
	9	S.	3	N.	10		9	S.	2	K.	10		9	S.	1	C. K.	8
June 16	0	W.	2	S.	1	June 17	0	SE.	1	C. K.	4	June 18	0	S.	1	Clear	0
	3	W	1	C. K. S.	3		3	W.	1	C. K.	6		3	SW.	1	Clear	0
	6	NW.	2	K. S.	2		6	W.	1	C. K.	8		6	W.	1	C. S.	4
	9	NW.	3	C. K.	4		9	S. SE.	1	C. K.	6		9	S. SW.	1	C. K.	7
	Noon	W.	3	C. K.	5		Noon	S. SW.	1	C. K.	6		Noon	S. SW.	1	C. K.	8
	3	W.	3	C. K.	6		3	S.	2	C. K.	3		3	S.	1	C. K.	5
	6	SW.	1	Clear	0		6	S.	1	C. K.	3		6	S. SW.	2	C. K.	2
	9	SW.	1	C.	4		9	S.	1	Clear	0		9	W.	1	C. K.	6
June 19	0	SW.	2	C. K.	2	June 20	0	W.	1	C.	2	June 21	0	W.	1	C.	4
	3	SW.	1	C. K.	1		3	NW.	1	C. K.	4		3	W.	1	C. S.	2
	6	W.	1	C. K.	7		6	NW.	1	C. K.	7		6	W.	1	C.	1
	9	W. NW.	3	C.	3		9	SW.	1	C. K.	10		9	SW.	1	C. K.	3
	Noon	NW.	3	C.	2		Noon	W.	2	C. K.	6		Noon	S.	1	C. K.	7
	3	W.	2	C.	2		3	W.	2	C. K.	10		3	S.	2	C. K.	6
	6	W.	1	C. K.	8		6	SW.	1	C. K.	10		6	W. SW.	1	C. K.	9
	9	NW.	1	Clear	0		9	N.	2	N.	10		9	W.	1	C. K.	10

REMARKS.

June 7. Quite a display of the aurora borealis during the night.
10. Rain during the forenoon. Amount, 0.176 inch.
12. A light shower at 6^h 30^m a. m.
14. Several showers during the day. Amount, 0.320 inch.
15. Rain at intervals during the day. Amount, 0.120 inch.
19. A light shower at 6^h 35^m p. m. Amount, 0.036 inch.
20. A brisk shower, with lightning and thunder, at 8^h 30^m p. m. Amount, 0.386 inch.
21. Several showers during the evening. Amount, 0.465 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. June 22	0	W.	1	C. K.	10	1869. June 23	0	W.	1	N.	10	1869. June 24	0	W.	1	C. K.	6
	3	W. NW.	1	C. K.	7		3	W.	1	C. K.	4		3	W.	1	C.	4
	6	W.	1	C. K.	9		6	W.	1	C. K.	9		6	W.	1	Haze	
	9	W.	1	C. K.	10		9	S.	1	C. K.	9		9	N. NE.	1	Haze	
	Noon	W.	1	C. K.	10		Noon	S. SW.	2	C. K.	9		Noon	N.	1	Haze	
	3	SW.	1	N.	10		3	S.	2	C. K.	10		3	W.	1	Haze	
	6	SW.	1	C. K.	9		6	S.	2	C. K.	10		6	S.	1	Haze	
	9	NW.	3	C. K.	9		9	NW.	2	C. K.	10		9	S.	1	Haze	
June 25	0	W. NW.	1	Haze		June 26	0	SE.	1	C. K.	8	June 27	0	W.	1	Clear	0
	3	NW.	1	Haze			3	W.	1	Haze			3	SW.	1	C. S.	2
	6	W.	1	Haze			6	SW.	1	Haze			6	SW.	1	C. S.	3
	9	SW.	1	Haze			9	W.	1	C. K.	7		9	SW.	1	C. K.	6
	Noon	SW.	1	Haze			Noon	S.	1	C. K.	6		Noon	W.	3	C. K.	6
	3	SW.	1	Haze			3	S.	1	C. K.	4		3	SW.	1	C. K.	3
	6	E.	1	Haze			6	W.	1	C. K.	10		6	SE.	1	C. K.	6
	9	S. SE.	3	C. K.	6		9	W.	1	C. K.	3		9	SW.	2	C.	2
June 28	0	SW.	1	C.	3	June 29	0	W.	2	C. K.	7	June 30	0	SW.	1	C. K.	4
	3	S.	1	C.	5		3	W. SW.	1	C. K. S.	3		3	W.	1	C. K.	6
	6	SW.	1	C. K.	8		6	NW.	1	Haze			6	W.	1	C. K.	7
	9	SW.	1	C.	4		9	W. NW.	2	C. K.	10		9	SW.	2	C. K.	10
	Noon	S. SW.	3	C. K.	5		Noon	NW.	1	C. K.	10		Noon	SW.	2	C. K.	8
	3	SW.	2	C. K.	4		3	W. NW.	1	C. K.	10		3	SW.	4	N.	10
	6	SW.	3	C. K.	8		6	SW.	1	C. K.	7		6	W.	2	C. K.	9
	9	W.	1	C. K.	9		9	SW.	1	C. K.	10		9	W.	2	C. K.	8
July 1	0	NW.	1	Clear	0	July 2	0	W.	1	C. K.	8	July 3	0	S.	1	C. K.	6
	3	W. NW.	1	Haze			3	SW.	1	C. K.	8		3	S.	1	C. K.	8
	6	NW.	1	Haze			6	S.	1	Haze			6	SW.	1	C.	4
	9	W.	1	Haze			9	S.	1	Haze			9	SW.	1	C. K.	7
	Noon	SW.	1	Haze			Noon	S.	1	Haze			Noon	W.	2	C. K.	8
	3	W.	1	C. K.	6		3	S.	1	Haze			3	W.	2	C. K.	4
	6	W.	1	Haze			6	S.	1	Haze			6	SW.	1	C. K.	3
	9	W.	1	Haze			9	S.	1	C.	2		9	SW.	1	C. K.	2
July 4	0	SW.	1	Haze		July 5	0	NW.	2	C. K.	4	July 6	0	N.	2	Clear	0
	3	W.	2	C. K.	3		3	NW.	2	C. K.	8		3	N.	2	Clear	0
	6	W.	1	C. K.	3		6	NW.	2	Haze			6	N.	1	C.	2
	9	W.	3	C. S.	2		9	NW.	2	Haze			9	N.	2	Haze	
	Noon	NW.	3	C. K.	4		Noon	NW.	1	Haze			Noon	N.	1	Haze	
	3	W.	2	C. K.	9		3	NW.	2	Haze			3	N.	1	Haze	
	6	W.	2	Haze			6	N.	1	Haze			6	NE.	2	Haze	
	9	NW.	1	C. K.	4		9	N.	1	Clear	0		9	NE.	1	Clear	0

REMARKS.

June 22. Shower at 3^h p. m. Amount, 0.264 inch.
23. A very light shower at 9^h p. m.
25. A brisk shower, with lightning and thunder, at 10^h 45^m p. m. Amount, 0.212 inch.
26. A heavy shower, with lightning and thunder, at 4^h 35^m p. m. Amount, 0.468 inch.
27. A light shower, with lightning and thunder, at 4^h 30^m p. m. Amount, 0.012 inch.
30. Rain at 3^h p. m. Amount, 0.260 inch.
July 3. Lightning in the north and west after 8^h p. m.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. July 7	0	N.	2	Clear	0	1869. July 8	0	SW.	2	C. K.	4	1869. July 9	0	S.	2	C. K.	8
	3	NW.	1	C. K.	3		3	NW.	2	C.K.	6		3	S.	2	K.	10
	6	W.	1	C. K.	7		6	S.	2	Haze			6	S.	2	C. K.	10
	9	S.	1	Haze			9	SW.	1	Haze			9	S.	2	C. K.	8
	Noon	S.	2	C. K.	4		Noon	S.	2	Haze			Noon	W.	2	C. K.	9
	3	SW.	2	C. K.	5		3	S.	2	C. K.	10		3	W.	1	C. K.	10
	6	S.	2	Haze			6	S.	1	Haze			6	W.	1	Clear	0
	9	SW.	2	C. K.	3		9	S.	2	C.	4		9	SW.	1	C. S.	1
July 10	0	W.	1	Clear	0	July 11	0	S.	2	C. K.	2	July 12	0	NW.	1	C. K.	6
	3	W.	1	Clear	0		3	SW.	1	Clear	0		3	NW.	1	C. K.	5
	6	W.	1	Fog			6	SW.	1	Haze			6	NW.	1	C. S.	4
	9	SW.	1	C. K.	4		9	SW.	1	C. K.	5		9		2	C. K.	5
	Noon	S.	2	C. K.	5		Noon	SW.	3	C. K.	7		Noon	W.	1	C. K.	8
	3	S.	1	C. K.	4		3	SW.	2	C. K.	10		3	W.	1	C. K.	7
	6	S.	2	Haze			6	W.	2	C. K.	8		6	S.	1	C. K.	8
	9	S.	3	C. K.	3		9	NW.	3	S.	1		9	SW.	1	C. K.	2
July 13	0	NW.	1	Clear	0	July 14	0	NE.	1	C. K.	9	July 15	0	N.	2	N.	10
	3	NE.	1	C. K.	3		3	W.	1	C. K.	9		3	NW.	1	C. K.	6
	6	N.	1	C. K.	7		6	W.	1	Fog			6	NW.	1	C. S.	2
	9	S.	1	C. K.	5		9	S.	1	C. K.	3		9	SW.	1	Haze	
	Noon	S.	1	C. K.	4		Noon	S.	1	C. K.	7		Noon	S.	1	C. K.	5
	3	S.	1	C. K.	10		3	SE.	2	C. K.	10		3	S.	2	C. K.	6
	6	SW.	1	C. K.	9		6	SE.	1	C K.	9		6	NW.	1	C. K.	7
	9	E.	1	C. K.	3		9	NE.	1	C K.	7		9	NW.	1	C. K.	5
July 16	0	W.	1	C. K.	2	July 17	0	NW.	1	C. K.	4	July 18	0	W.	1	C. K.	6
	3	W.	1	Clear	0		3	W.	1	C. K.	4		3	W.	1	C. K.	8
	6	SW.	1	Clear	0		6	W.	1	C. K.	3		6	W.	1	C. K.	7
	9	W.	2	S.	1		9	NW.	1	C. K.	6		9	N.	1	C. K.	9
	Noon	W.	2	C.	2		Noon	NW.	2	C. K.	5		Noon	W.	1	C. K.	8
	3	W.	2	C.	1		3	NW.	2	N.	10		3	NE.	2	C. K.	4
	6	W.	1	C.	1		6	W.	1	C. K.	8		6	NE.	2	C. K.	9
	9	NW.	1	C.	3		9	W.	1	C. K.	7		9	NW.	1	C. K.	8
July 19	0	NW.	1	C. K.	10	July 20	0	NE.	1	N.	10	July 21	0	S.	1	S.	1
	3	NW.	1	N.	10		3	N.	1	N.	10		3	SW.	1	C.	2
	6	N.	2	C. K.	9		6	NW.	1	N.	10		6	W.	1	G.	4
	9	N.	1	K.	10		9	SE.	1	N.	10		9	W.	2	C. K.	3
	Noon	N.	1	K.	10		Noon	SE.	1	C. K.	7		Noon	W.	2	C. K.	5
	3	N.	1	K.	10		3	SE.	1	C. K.	4		3	W.	2	C. K.	5
	6	NE.	1	C.	9		6	SE.	1	C. K.	3		6	NW.	3	Clear	0
	9	N.	1	K.	10		9	S.	2	C.	2		9	NW.	2	Clear	0

REMARKS.

July 8. Maximum thermometer fails to indicate the maximum reading.
9. Heavy rain, accompanied with lightning and thunder, at $0^h\ 45^m$ p. m. Amount of rain, 0.678 inch.
13. Showers, with lightning and thunder, at $2^h\ 20^m$ and $6^h\ 15^m$ p. m. Amount, 0.248 inch.
14. Showers, with much lightning and thunder, at $0^h\ 15^m$ a. m. and $7^h\ 20^m$ p. m. Amount, 0.020 inch.
15. A light shower, with vivid lightning, the latter continuing through the morning.
16. Lightning during the night. Several meteors; some very brilliant ones.
17. Showers at 3^h and $8^h\ 10^m$ p. m. Heavy thunder. Amount of rain, 0.320 inch.
18. Several showers after 7^h p. m. Frequent lightning and thunder. Amount of rain, 0.108 inch.
19. Rain at $9^h\ 30^m$ p. m., and continued through the night. Amount, 0.118 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. July 22	0	SW.	1	Clear	0	1869. July 23	0	W.	1	Haze		1869. July 24	0	W.	1	Haze	
	3	SW.	1	C. K.	4		3	W.	1	Haze			3	W.	1	Haze	
	6	SW.	1	C. K.	7		6	W.	1	Haze			6	W.	1	Haze	
	9	W.	2	C.	3		9	W.	1	Haze			9	SW.	1	Haze	
	Noon	W.	1	C. K.	7		Noon	W.	1	Haze			Noon	SW.	1	Haze	
	3	W.	1	C. K.	4		3	W.	1	Haze			3	SW.	1	Haze	
	6	S.	1	C. K.	4		6	NW.	1	Haze			6	W.	1	C.	3
	9	W.	1	C. K.	5		9	SW.	1	Haze			9	SE.	1	C.	4
July 25	0	SW.	1	C.	5	July 26	0	S.	1	C. K.	10	July 27	0	S.	2	Clear	0
	3	SW.	1	C. K.	8		3	SW.	1	N.	10		3	S.	1	C. S.	4
	6	SW.	1	C. K.	10		6	SW.	2	N.	10		6	SW.	2	K.	10
	9	SW.	1	Haze			9	SW.	2	C. K.	10		9	W.	1	C. K.	7
	Noon	S.	1	C. K.	8		Noon	SW.	2	C. K.	9		Noon	SE.	2	C. K.	5
	3	SW.	1	C. K.	5		3	S.	2	C. K.	4		3	W.	1	C. K.	8
	6	NE.	1	C. K.	9		6	S.	3	C. K.	2		6	SW.	1	C. K.	10
	9	SW.	2	C. K.	10		9	S.	3	C.	2		9	W.	1	C. K.	2
July 28	0	SW.	1	C. K.	1	July 29	0	S.	3	C. K.	5	July 30	0	NW.	2	S.	1
	3	SW.	1	C.	1		3	SW.	3	C. K.	10		3	NW.	2	Clear	0
	6	W.	1	C. K.	7		6	S.	1	C. K.	9		6	NW.	1	Clear	0
	9	SW.	1	C. K.	8		9	W.	1	N.	10		9	NW.	2	Clear	0
	Noon	S.	1	C. K.	6		Noon	W.	1	C. K.	9		Noon	NW.	1	C. K.	3
	3	S.	2	C. K.	8		3	W.	1	C. K.	10		3	W.	1	C. K.	2
	6	S.	2	C. K.	8		6	N.	1	C. K.	4		6	SW.	1	Haze	
	9	NW.	2	N.	10		9	NW.	3	Clear	0		9	W.	1	Clear	0
July 31	0	W.	1	Haze													
	3	NW.	1	Haze													
	6	W.	1	Haze													
	9	NE.	1	Haze													
	Noon	E.	1	C. K.	4												
	3	S.	1	C. K.	3												
	6	SE.	1	Haze													
	9	SE.	1	Haze													
Aug. 1	0	NE.	1	Haze		Aug. 2	0	W.	1	Clear	0	Aug. 3	0	S.	1	Clear	0
	3	NW.	1	Haze			3	W.	1	Fog			3	SW.	1	Haze	
	6	NW.	1	Haze			6	W.	1	Fog			6	SW.	1	Haze	
	9	NE.	2	Haze			9	W.	1	Haze			9	SW.	1	Haze	
	Noon	NE.	1	Haze			Noon	S.	2	Haze			Noon	W.	3	C. S.	4
	3	E.	2	Haze			3	S.	1	Haze			3	W.	2	C. K.	9
	6	SE.	1	C. K.	3		6	S.	1	Haze			6	W.	1	C. K.	4
	9	E.	1	Haze			9	S.	2	Clear	0		9	W.	1	C. K.	3

REMARKS.

July 25. Light shower at $3^h 40^m$ p. m.
26. Several light showers during the morning. Amount, 0.098 inch.
27. Heavy shower at 1^h p. m. Amount, 0.716 inch.
28. Heavy shower in the evening. Amount, 0.920 inch.
29. Lightning during the evening.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. Aug. 4	0	W.	1	C. K.	4	1869. Aug. 5	0	S.	1	C. K.	6	1869. Aug. 6	0	NW.	2	Clear	0
	3	W.	1	Haze			3	S.	1	C. K.	8		3	NW.	3	Clear	0
	6	W.	1	Haze			6	W.	1	N.	10		6	NW.	2	C.	2
	9	SW.	1	Haze			9	E.	1	Haze			9	NW.	3	C. K.	4
	Noon	S.	1	Haze			Noon	N.	1	Haze			Noon	N.	2	C. K.	9
	3	SW.	1	Haze			3	NW.	2	Haze			3	W.	1	C.	4
	6	S.	1	Haze			6	N.	2	C. K.	10		6	N.	1	C. K.	3
	9	S.	1	C.	4		9	NW.	2	Clear	0		9	N.	1	Clear	0
Aug. 7	0	NW.	1	C. K.	2	Aug. 8	0	NW.	1	Clear	0	Aug. 9	0	W.	2	Clear	0
	3	NW.	1	Clear	0		3	NW.	2	Clear	0		3	W.	1	Clear	0
	6	NW.	1	Haze			6	W.	1	Clear	0		6	W.	1	Haze	
	9	NW.	2	Clear	0		9	NE.	2	Clear	0		9	W.	1	Clear	0
	Noon	NW.	2	C. K.	7		Noon	NW.	2	Clear	0		Noon	SE.	1	Haze	
	3	NW.	3	C. K.	4		3	W.	1	Clear	0		3	S.	1	Haze	
	6	N.	1	C. K. S.	2		6	SW.	1	Haze			6	S.	1	Clear	0
	9	NW.	1	Clear	0		9	SW.	1	C.	2		9	SW.	1	C. K.	2
Aug. 10	0	SW.	1	C. K.	3	Aug. 11	0	S.	1	Clear	0	Aug. 12	0	NW.	1	Clear	0
	3	SW.	1	C. K.	2		3	SW.	1	C. K.	6		3	NW.	1	Clear	0
	6	W.	1	Fog			6	W.	1	K.	10		6	W.	1	Haze	
	9	S.	1	Haze			9	W.	1	C. K.	3		9	NE.	1	Haze	
	Noon	S.	1	Haze			Noon	W.	1	Haze			Noon	S.	1	C. K.	2
	3	SE.	1	Haze			3	W.	1	C. K.	7		3	NW.	1	C. K.	3
	6	S.	1	Haze			6	N.	1	C. K. S.	8		6	E. SE.	2	C. K.	4
	9	S.	1	Clear	0		9	N.	1	C. K.	2		9	SE.	2	C. K.	9
Aug. 13	0	SE.	1	C. K.	4	Aug. 14	0	E.	1	Clear	0	Aug. 15	0	SE.	1	C. K.	4
	3	SE.	1	C. K.	5		3	NE.	1	C.	2		3	S.	2	C.	1
	6	SE.	1	C. K.	9		6	NW.	1	Haze			6	SW.	1	C. K.	10
	9	S.	1	C. K.	8		9	NE.	2	Haze			9	S.	2	C.	3
	Noon	S. SW.	1	C. K.	9		Noon	E.	2	Haze			Noon	S.	1	C. K.	8
	3	E. SE.	1	C. K.	8		3	SE.	2	C. K.	4		3	S.	1	C. K.	6
	6	E.	1	C. K.	6		6	E. SE.	2	C. K.	2		6	SW.	2	C. K.	8
	9	E.	1	C.	2		9	E. SE.	2	C. K.	6		9	SW.	1	C.	10
Aug. 16	0	SE.	1	C. K.	7	Aug. 17	0	NE.	1	C. K.	8	Aug. 18	0	SE.	2	K.	10
	3	SW.	1	Clear	0		3	NE.	1	C.	4		3	SE.	2	K.	10
	6	W. SW.	1	Haze			6	NE.	1	C. K.	9		6	SE.	1	N.	10
	9	NW.	2	C. K.	2		9	N. NE.	1	C. K.	9		9	SE.	1	K.	10
	Noon	NW.	2	C. K.	8		Noon	N. NE.	2	Haze			Noon	SW.	1	K.	10
	3	SW.	1	C. K.	7		3	NE.	2	C. K.	9		3	S.	1	C. K.	5
	6	E.	1	C. K.	6		6	SE.	1	C. K.	9		6	SE.	2	C. K.	8
	9	E.	1	Clear	0		9	E. SE.	1	C. K.	10		9	S. SE.	2	C. K.	4

REMARKS.

August 5. Showers at 6^h a. m. and 4^h p. m. Amount, 0.190 inch.

Quite a number of meteors from 10^h p. m. on the 10th to 2 a. m. on the 11th.

15. Light shower, with lightning, thunder, and wind, at $7^h\ 25^m$ p. m. Amount, 0.024 inch.

17. Distant thunder at $2^h\ 24^m$ p. m.

18. A light shower at $0^h\ 5^m$ p. m. Amount, 0.030 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Aug. 19	0	S.	1	C. K.	10	1869. Aug. 20	0	S.	1	C.	2	1869. Aug. 21	0	W. NW.	1	C. K.	3
	3	S.	1	K.	10		3	S.	1	C. K.	8		3	W.	1	C. K.	7
	6	S.	1	K.	10		6	SW.	1	Fog			6	W.	1	C. K. S.	9
	9	SW.	1	K.	10		9	SW.	1	Haze			9	W.	1	C.	4
	Noon	SW.	1	K.	10		Noon	SW.	1	C. K.	3		Noon	W.	2	C. K.	4
	3	S. SE.	2	C. K.	8		3	S. SE.	1	C. K.	4		3	SW.	2	C. K.	5
	6	S.	1	C.	4		6	SE.	1	C. K. S.	8		6	SW.	1	C. K.	6
	9	S.	1	C.	4		9	NW.	1	C. K.	9		9	SW.	1	C. K.	9
Aug. 22	0	W.	1	C. K.	8	Aug. 23	0	NE.	2	C. K.	10	Aug. 24	0	SE.	2	C. K.	10
	3	W.	1	C. K.	5		3	NE.	2	C. K.	10		3	SE.	2	C. K.	10
	6	W. NW.	1	C. K.	7		6	NE.	1	C. K.	10		6	SE.	1	C. K.	10
	9	NW.	2	C. K.	8		9	E.	2	C. K.	10		9	SW.	1	C. K.	10
	Noon	NW.	2	C. K.	8		Noon	E.	2	N	10		Noon	S.	1	C. K.	10
	3	N. NW.	2	C. K.	7		3	E.	1	C. K.	10		3	S.	1	C. K.	8
	6	SW.	1	C. K.	10		6	S. SW.	1	C. K.	7		6	SE.	1	C. K. S.	8
	9	W.	1	C. K.	10		9	W. SW.	1	K.	10		9	E. SE.	1	C. K. S.	2
Aug. 25	0	S.	2	C. K.	10	Aug. 26	0	SW.	1	C.	2	Aug. 27	0	N.	2	C.	2
	3	E.	1	C. K.	9		3	SW.	1	C.	4		3	NE.	1	C.	1
	6	SE.	1	C. K.	9		6	W.	1	C.	2		6	NE.	2	C. K.	6
	9	SE.	2	C. K.	3		9	N.	2	C. K.	3		9	E.	2	Clear	0
	Noon	S. SE.	3	C. K.	1		Noon	N.	3	C. K.	2		Noon	S.	1	C.	3
	3	S. SW.	2	C.	4		3	N.	2	C. K.	2		3	SE.	1	C.	2
	6	S.	1	C. K.	6		6	N.	2	C. K.	2		6	S.	1	C. K. S.	3
	9	S.	1	C. K.	6		9	N.	2	S.	1		9	S.	3	Clear	0
Aug. 28	0	S.	3	Clear	0	Aug. 29	0	W.	1	K.	10	Aug. 30	0	NW.	2	C. K.	10
	3	S.	1	Clear	0		3	W.	1	C.	2		3	NW.	1	C. K.	10
	6	S.	1	C. K.	2		6	W.	1	C. K.	4		6	NW	1	C. K. S.	8
	9	SW.	2	C.	1		9	W.	3	C. K.	7		9	NW.	2	N.	10
	Noon	S. SW.	2	C. K.	5		Noon	W. NW.	3	C. K.	7		Noon	W.	2	N.	10
	3	S. SW.	3	C. K.	8		3	NW.	1	N.	10		3	NW.	2	C. K. S.	9
	6	S.	1	C. K.	10		6	W.	1	C. K.	7		6	N.	1	C. K.	4
	9	W.	2	N.	10		9	W.	2	K.	10		9	N.	1	C. K.	3
Aug. 31	0	NW.	1	C. K.	4												
	3	NW.	1	C. K.	2												
	6	NW.	2	Clear	0												
	9	N. NW.	3	C.	1												
	Noon	NW.	3	C. K.	5												
	3	W.	2	C. K.	7												
	6	N. NE.	1	C. K.	5												
	9	N. NW.	2	Clear	0												

REMARKS.

August 21. Lightning and thunder at $6^h\ 20^m$ p. m. Lightning continued until midnight.

23. A light rain at noon.

24. Several meteors were seen during the evening. At $7^h\ 17^m$ p. m. a very bright meteor passed from near Mizar to a point 10° below Polaris, leaving a brilliant train, which remained visible five minutes.

28. A heavy shower at $7^h\ 45^m$ p. m. Amount, 0.606 inch.

29. Light shower at $2^h\ 40^m$ p. m. Amount, 0.030 inch.

30. Light showers at intervals during the morning.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Sept. 1	0	NW.	3	Clear	0	1869. Sept. 2	0	NW.	2	Clear	0	1869. Sept. 3	0	N.	1	Clear	0
	3	NW.	2	C. K.	6		3	N. NW.	2	Clear	0		3	NE.	1	C. K.	3
	6	NW.	2	C.	2		6	NW.	3	Clear	0		6	NW.	1	C. K.	1
	9	N.	2	C. K.	2		9	N.	2	Clear	0		9	W. NW.	1	Clear	0
	Noon.	N. NW.	2	C. K.	4		Noon	NE.	2	C. K.	3		Noon	NW.	1	Clear	0
	3	N.	3	C. K.	6		3	NE.	2	C. K.	4		3	S.	1	Clear	0
	6	N.	2	C. S.	1		6	NE.	2	C. K.	3		6	S.	1	Clear	0
	9	N.	1	C. S.	1		9	N.	1	C. K.	4		9	SW.	1	Clear	0
Sept. 4	0	SW.	1	Clear	0	Sept. 5	0	SE.	1	Clear	0	Sept. 6	0	S.	1	C. K.	2
	3	SW.	1	Clear	0		3	SW.	1	Clear	0		3	SE.	1	C. K.	9
	6	SW.	1	Clear	0		6	SW.	1	S.	1		6	E. NE.	1	K.	10
	9	S.	1	Clear	0		9	S.	1	Clear	0		9	NW.	1	C. K.	9
	Noon	S.	2	Clear	0		Noon	S.	1	Clear	0		Noon	S. SE.	1	C. K.	10
	3	S. SE.	2	Clear	0		3	S.	1	Clear	0		3	SE.	1	C. K.	10
	6	S. SE.	2	Clear	0		6	SE.	2	C. K.	6		6	E.	1	C. K.	9
	9	SE.	1	Clear	0		9	S.	1	C. K.	4		9	E.	1	C.	4
Sept. 7	0	E.	1	Clear	0	Sept. 8	0	SE.	2	C. K. S.	10	Sept. 9	0	NW.	1	Clear	0
	3	E.	1	N.	10		3	SE.	1	C. K. S.	2		3	NW.	1	Clear	0
	6	E.	1	K.	10		6	E. SE.	1	C. K. S.	10		6	W.	1	Clear	0
	9	S. SE.	3	C. K.	7		9	SE.	1	C. K.	10		9	NW.	3	Clear	0
	Noon	SE.	3	C. K.	8		Noon	W.	1	C. K.	6		Noon	W. NW.	2	C. K.	5
	3	SE.	3	C. K.	7		3	W.	2	N.	10		3	W. NW.	2	C. K.	6
	6	SE.	3	C. K. S.	2		6	W.	3	C. K.	6		6	W.	2	C. S.	2
	9	SE.	2	Haze			9	W.	3	C. K.	2		9	W.	1	S.	1
Sept. 10	0	NW.	2	Clear	0	Sept. 11	0	NW.	1	Clear	0	Sept. 12	0	W.	1	Clear	0
	3	W.	2	Clear	0		3	NW.	1	Clear	0		3	W.	1	Clear	0
	6	W.	2	Clear	0		6	NW.	1	Clear	0		6	W.	1	Clear	0
	9	NW.	3	C. K.	1		9	N.	1	Clear	0		9	W. NW.	1	Clear	0
	Noon	NW.	3	C. K.	7		Noon	N.	1	C.	3		Noon	SW.	1	C.	1
	3	NW.	3	C. K.	8		3	W.	1	C.	2		3	SE.	2	Clear	0
	6	NW.	2	C. K. S.	3		6	W. SW.	1	Clear	0		6	E.	1	Clear	0
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	N.	1	Clear	0
Sept. 13	0	NW.	1	Clear	0	Sept. 14	0	E.	1	C. K.	3	Sept. 15	0	E.	1	Clear	0
	3	NW.	1	Clear	0		3	NW.	1	C. K. S.	6		3	E.	1	C. K.	4
	6	W.	1	Clear	0		6	NW.	1	C. K.	7		6	NE.	1	C. K.	8
	9	W.	1	C. K.	3		9	NE.	1	C. K.	7		9	NE.	1	C. K.	6
	Noon	S. SE.	2	C. K.	5		Noon	E.	2	C. K.	7		Noon	SW.	1	C. K.	6
	3	SE.	2	C. K.	7		3	E.	2	C. K.	6		3	SW.	1	C. K.	7
	6	SE.	1	C. K.	7		6	E.	2	C. K.	4		6	E.	1	C. K.	10
	9	SE.	1	C. K.	7		9	E.	1	Clear	0		9	E.	1	C. K.	10

REMARKS.

September 7. Light showers at 3^h and at 6^h 40^m a. m. and 1^h 40^m p. m.

8. Rain at 10^h 45^m a. m. and at 2^h 45^m p. m. Amount, 0.620 inch.

14. A fine display of aurora borealis during the morning, lasting till daylight.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. Sept. 16	0	NE.	1	C. K.	10	1869. Sept. 17	0	SE.	1	K.	10	1869. Sept. 18	0	N. NW.	1	K.	10
	3	SW.	1	K.	10		3	SE.	1	K.	10		3	N. NW.	1	C.	1
	6	W.	1	K.	10		6	E. SE	1	K.	10		6	NE.	1	Fog	
	9	S.	1	C. K.	7		9	NE.	1	C. K.	10		9	E.	1	C. K.	10
	Noon	S.	1	C. K.	7		Noon	S.	1	C. K.	7		Noon	SW.	1	C. K.	9
	3	E.	1	C. K.	10		3	E.	1	C. K.	4		3	E.	1	C. K.	7
	6	SE.	1	C. K.	3		6	E.	1	C. K.	9		6	E. NE.	1	C. K.	7
	9	NE.	1	C. K.	4		9	E.	1	N.	10		9	E.	1	C. K.	5
Sept. 19	0	SE.	1	C. K.	10	Sept. 20	0	SW.	1	Clear	0	Sept. 21	0	W.	1	C.	2
	3	E.	1	K.	10		3	SW.	1	Clear	0		3	W.	1	Clear	0
	6	SE.	1	K.	10		6	SW.	1	Clear	0		6	W.	1	C. S.	2
	9	S.	1	C. K.	10		9	SW.	1	Clear	0		9	NW.	1	C. K.	5
	Noon	S.	1	C. K.	4		Noon	W.	1	C. K.	3		Noon	SW.	1	C. K.	4
	3	S.	1	C. K.	3		3	W.	1	C. K.	3		3	SW.	1	C. K.	4
	6	SW.	1	C. K.	7		6	S.	1	Clear	0		6	W.	1	C. K. S.	8
	9	S.	1	Clear	0		9	N.	1	Clear	0		9	NE.	1	C. K.	7
Sept. 22	0	N. NW.	2	C. K.	10	Sept. 23	0	NW.	1	K.	10	Sept. 24	0	E.	1	C. K.	10
	3	SE.	1	C. K.	9		3	W.	1	K.	10		3	E.	1	K.	10
	6	NW.	1	C. K.	8		6	NE.	1	K.	10		6	E.	2	N.	10
	9	N.	1	C. K.	10		9	E.	1	N.	10		9	E.	1	N.	10
	Noon	NE.	1	C. K.	9		Noon	E.	1	Haze			Noon	S.	1	C. K.	10
	3	NE.	2	C. K.	6		3	E.	1	K.	10		3	E.	1	C. K.	8
	6	NE.	1	C. K.	8		6	E.	1	C. K.	10		6	E. SE.	2	C. K.	7
	9	NE.	1	C. K.	7		9	NE.	1	C. K.	9		9	E.	1	C. K.	10
Sept. 25	0	SE.	1	C. K.	10	Sept. 26	0	E. SE.	2	N.	10	Sept. 27	0	NW.	2	C. K.	6
	3	E.	1	C. K.	10		3	E. SE.	2	N.	10		3	NW.	2	C. S.	2
	6	NE.	1	C. K.	10		6	S.	3	N.	10		6	NW.	1	S.	1
	9	SE.	1	K.	10		9	S.	3	N.	10		9	NW.	3	C.	1
	Noon	SE.	2	C. K.	6		Noon	S.	3	N.	10		Noon	NW.	3	C. K.	8
	3	SE.	2	C. K.	8		3	NW.	3	N.	10		3	NW.	2	C. K.	3
	6	SE.	3	C. K.	9		6	NW.	3	N.	10		6	NW.	1	C.	1
	9	E.	1	K.	10		9	NW.	2	N.	10		9	NW.	1	Clear	0
Sept. 28	0	NW.	1	Clear	0	Sept. 29	0	NW.	1	Clear	0	Sept. 30	0	W.	1	Clear	0
	3	NW.	1	Clear	0		3	W.	1	Fog			3	W.	1	Fog	
	6	NW.	1	S.	1		6	W.	1	Fog			6	W.	1	Fog	
	9	NW.	1	Clear	0		9	S. SW.	1	Clear	0		9	SW.	1	Haze	
	Noon	NW.	1	C. K.	1		Noon	S.	2	Clear	0		Noon	S. SE.	1	C. K.	1
	3	Calm	0	C. K.	1		3	S.	1	Clear	0		3	SE.	1	Clear	0
	6	NW.	1	Clear	0		6	SW.	1	Clear	0		6	S.	1	Clear	0
	9	NW.	1	Clear	0		9	W.	1	Clear	0		9	NW.	1	Clear	0

REMARKS.

September 16. Light showers at intervals during the day.
17. Several showers, with lightning and thunder, during the day. Amount, 0.158 inch.
18. Shower at 5^{h} p. m. Amount, 0.100 inch.
21. Much lightning and thunder during the evening; rain at $11^{h}\ 55^{m}$ p. m. Amount, 0.046 inch.
22. Light shower at $2^{h}\ 30^{m}$ a. m. Lightning during the evening.
25. A light shower at $7^{h}\ 45^{m}$ p. m.
26. Heavy rain during the day. Amount, 1.500 inch.

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1869. Oct. 1	0	NW.	1	Clear	0	1869. Oct. 2	0	N.	1	Clear	0	1869. Oct. 3	0	SE.	1	K.	10
	3	W.	1	Fog			3	NW.	1	C. K.	8		3	SE.	1	K.	10
	6	W.	1	Fog			6	NW.	1	N.	10		6	S.	1	N.	10
	9	W. NW.	1	Haze			9	NW.	1	N.	10		9	N. NE.	2	K.	10
	Noon	SW.	1	C. K.	1		Noon	NE.	1	N.	10		Noon	NE.	1	N.	10
	3	S. SW.	1	Clear	0		3	Calm	0	C. K.	7		3	NE.	1	N.	10
	6	SE.	1	Clear	0		6	SE.	1	C. K.	10		6	NE.	2	N.	10
	9	W.	1	Clear	0		9	SE.	1	K.	10		9	NE.	2	N.	10
Oct. 4	0	NW.	2	N.	10	Oct. 5	0	NW.	1	Clear	0	Oct. 6	0	NW.	2	Clear	0
	3	W.	3	K.	10		3	NW.	1	S.	1		3	NW.	1	Clear	0
	6	NW.	3	K.	10		6	NW.	2	Clear	0		6	NW.	1	Clear	0
	9	NW.	4	C. K.	7		9	NW.	2	C. K.	3		9	NW.	1	Clear	0
	Noon	NW.	3	C. K.	3		Noon	NW.	3	C. K.	8		Noon	N.	1	C. K.	2
	3	NW.	3	C. K.	3		3	NW.	3	C. K.	7		3	W. NW.	1	Clear	0
	6	NW.	2	C. K. S.	4		6	N. NW.	2	C. K.	2		6	W.	1	Clear	0
	9	NW.	2	C. K.	1		9	NW.	1	Clear	0		9	W. NW.	1	Clear	0
Oct. 7	0	NW.	1	Clear	0	Oct. 8	0	NW.	1	Fog		Oct. 9	0	S.	1	Clear	0
	3	W. NW.	1	Clear	0		3	SW.	1	Clear	0		3	SE.	1	Fog	
	6	W. NW.	1	Fog			6	W. NW.	1	Fog			6	W. NW.	1	Fog	
	9	NW.	1	Fog			9	W. NW.	1	Fog			9	SW.	1	Fog	
	Noon	SW.	1	Haze			Noon	S.	1	Clear	0		Noon	SW.	1	C. K.	1
	3	S. SE.	1	Clear	0		3	S.	1	Clear	0		3	S.	1	C. K.	9
	6	SE.	1	Clear	0		6	SE.	1	Clear	0		6	SE.	1	C. K.	6
	9	SW.	1	Clear	0		9	SW.	1	Clear	0		9	SE.	1	C.	2
Oct. 10	0	SE.	1	C. K.	7	Oct. 11	0	NW.	2	Clear	0	Oct. 12	0	SE.	1	C. K.	10
	3	SW.	1	Fog			3	NW.	1	Clear	0		3	SE.	1	Haze	
	6	W.	1	Fog			6	W.	1	C. K.	3		6	SE.	1	C. K.	10
	9	NE.	1	Fog			9	S. SW.	1	C. S.	3		9	S.	3	N.	10
	Noon	NW.	1	C. K.	9		Noon	S.	2	C. K.	5		Noon	S.	3	C. K.	10
	3	W. NW.	3	C. K.	10		3	S.	2	C. K.	3		3	SW.	1	C. K.	10
	6	NW.	2	C. S.	2		6	SW.	1	C. K. S.	6		6	S.	1	K.	10
	9	NW.	3	Clear	0		9	SW.	1	C. K.	8		9	SW.	1	K.	10
Oct 13	0	NW.	1	C. K.	10	Oct. 14	0	W.	1	Clear	0	Oct. 15	0	SW.	1	C. K.	8
	3	NW.	1	N.	10		3	NW.	1	Clear	0		3	W. SW.	1	C. K.	2
	6	W.	2	K.	10		6	S.	1	C. K.	4		6	NW.	1	C. K.	3
	9	NW.	3	C. K.	8		9	SW.	2	C.	2		9	NW.	1	K.	10
	Noon	W. NW.	4	C. K.	4		Noon	S. SW.	3	C. K.	9		Noon	NW.	1	C. K.	10
	3	NW.	4	C. K.	3		3	S.	2	C. K.	8		3	NW.	1	N.	10
	6	W.	3	C. K.	3		6	S.	1	C. S.	3		6	NW.	1	N.	10
	9	W.	1	Clear	0		9	SW.	1	C. K.	7		9	N.	1	C. K.	10

REMARKS.

October 3. Began to rain heavily at 6^h a. m., and continued with scarcely any intermission until 1^h a. m. on the 4th. Amount, 5.971 inches.
12. Light showers at intervals during the evening. Amount, 0.110 inch.
14. A heavy white frost this morning.
15. Light rain during the day. Amount, 0.100 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force		
1869. Oct. 16	0	NW.	3	C. K.	10	1869. Oct. 17	0	NW.	1	Clear	0	1869. Oct. 18	0	NW.	1	Clear	
	3	NW.	3	Clear	0		3	W.	1	Clear	0		3	NW.	1	Clear	
	6	NW.	3	Clear	0		6	W.	1	Clear	0		6	NW.	1	C. K.	4
	9	NW.	3	Clear	0		9	S.	2	Clear	0		9	W. NW.	1	C. K.	9
	Noon	NW.	3	C. K.	3		Noon	W.	2	Clear	0		Noon	W. NW.	2	C. K.	3
	3	NW.	3	C. K.	3		3	SW.	1	C. K.	7		3	NW.	2	C. K.	4
	6	NW.	1	Clear	0		6	S. SW.	1	C. K.	4		6	NW.	1	Haze	
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	NW.	1	Haze	
Oct. 19	0	W.	1	C. K.	10	Oct. 20	0	NW.	2	K.	10	Oct. 21	0	S.	1	Clear	0
	3	W.	1	K.	10		3	NW.	2	C. K.	10		3	S.	1	C. K.	7
	6	W.	1	C. K.	10		6	NW.	3	C. K.	9		6	S.	1	C. K.	10
	9	NW.	1	C. K.	10		9	W.	3	Clear	0		9	S.	1	C. K.	10
	Noon	W.	1	C. K.	10		Noon	W.	2	C. K.	3		Noon	S.	1	N.	10
	3	NW.	2	K.	10		3	NW.	1	C. K.	3		3	S.	1	N.	10
	6	NW.	2	N.	10		6	NW.	1	S.	1		6	SE.	1	K.	10
	9	NW.	2	K.	10		9	NW.	1	Clear	0		9	SW.	1	K.	10
Oct. 22	0	W.	1	C. K.	6	Oct. 23	0	E.	1	C. K.	10	Oct. 24	0	NW.	4	C. K.	9
	3	W.	1	C.	2		3	NE.	1	N.	10		3	NW.	3	Clear	0
	6	W.	1	Fog			6	NE.	1	N.	10		6	NW.	2	C. S.	1
	9	NW.	1	C. K.	10		9	SE.	1	N.	10		9	NW.	3	C. K.	3
	Noon	NW.	1	C. K.	9		Noon	S.	2	N.	10		Noon	NW.	3	C. K.	3
	3	S.	1	C. K.	8		3	W.	2	N.	10		3	NW.	3	C. K.	2
	6	S.	1	C. K.	10		6	SW.	1	C. K.	10		6	NW.	1	Clear	0
	9	S. SE.	1	C. K.	8		9	W.	1	C. K.	10		9	NW.	1	Clear	0
Oct. 25	0	NW.	1	C.	3	Oct. 26	0	NW.	1	C. K.	7	Oct. 27	0	NW.	1	Clear	0
	3	NW.	1	C. K.	8		3	NW.	2	C. K.	8		3	NW.	3	Clear	0
	6	W.	1	S.	1		6	NW.	1	C. K.	8		6	NW.	3	Clear	0
	9	W. NW.	2	Clear	0		9	W. NW.	1	C. K.	9		9	NW.	3	C. K.	2
	Noon	W.	1	Clear	0		Noon	W.	1	C. K.	9		Noon	NW.	3	C. K.	4
	3	W.	1	Clear	0		3	S.	1	C. K.	7		3	NW.	3	C. K.	4
	6	NW.	1	Haze			6	S.	1	C. K. S.	6		6	NW.	1	Clear	0
	9	NW.	1	Clear	0		9	W.	3	Clear	0		9	N.	1	K.	10
Oct. 28	0	SW.	1	C. K.	10	Oct. 29	0	NW.	1	Haze		Oct. 30	0	NW.	2	C. K. S.	4
	3	S.	1	K.	10		3	W.	1	Haze			3	NW.	1	C. K.	6
	6	S.	1	K.	10		6	SW.	1	Haze			6	NW.	2	C. K. S.	6
	9	SW.	1	C. K.	10		9	NW.	1	K.	10		9	NW.	2	C. K.	10
	Noon	S. SE.	1	C. K.	9		Noon	NW.	1	N.	10		Noon	NW.	3	C. K.	10
	3	S. SW.	2	C. K.	8		3	NW.	1	C. K.	8		3	NW.	3	C. K.	9
	6	SW.	1	Haze			6	NW.	2	S.	1		6	NW.	3	C. K.	8
	9	NW.	1	Haze			9	NW.	1	Clear	0		9	NW.	2	K.	10

REMARKS.

October 19. Rain in the evening. Amount, 0.158 inch.
21. Light rain in the afternoon. Amount, 0.140 inch.
22. Lunar halo at $8^h\ 20^m$ p. m. Amount of dew deposited during the night, 0.006 inch.
23. Heavy rain at $3^h\ 35^m$ a. m. Amount, 0.420 inch.
29. Light rain at noon. Amount, 0.006 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869.						1869.						1869.					
Oct. 31	0	NW.	2	C. K.	8												
	3	NW.	2	Clear	0												
	6	N.	1	S.	1												
	9	N. NW.	3	C. K.	3												
	Noon	NW.	3	C. K.	3												
	3	W. NW.	3	C. K.	1												
	6	NW.	2	Clear	0												
	9	NW.	1	Clear	0												
Nov. 1	0	NW.	2	Clear	0	Nov. 2	0	W.	1	Clear	0	Nov. 3	0	NW.	1	Haze	
	3	NW.	1	Clear	0		3	NW.	2	Clear	0		3	NW.	1	Haze	
	6	W.	1	C.	4		6	NW.	2	Haze			6	NW.	1	Haze	
	9	SW.	3	C. K.	4		9	NW.	1	Haze			9	NW.	1	Haze	
	Noon	S.	2	C. K.	8		Noon	N.	1	Haze			Noon	S. SE.	1	Haze	
	3	SW.	1	C. K.	4		3	NW.	1	Haze			3	S. SE.	1	Clear	0
	6	SW.	1	C. S.	1		6	W.	1	Haze			6	S.	1	Haze	
	9	W.	2	Haze	0		9	SW.	1	C. K.	9		9	SW.	1	Cleor	0
Nov. 4	0	S.	1	Clear	0	Nov. 5	0	W.	2	Clear	0	Nov. 6	0	NW.	2	Clear	0
	3	SW.	1	Clear	0		3	NW.	1	K.	10		3	W.	1	C. K.	4
	6	SW.	1	Fog			6	S. SW.	1	N.	10		6	W.	1	C. S.	6
	9	W. SW.	1	Haze			9	S. SW.	1	C. K.	10		9	NW.	1	C.	2
	Noon	S.	1	Haze			Noon	SE.	1	C. K.	8		Noon	NW.	3	C. K.	7
	3	S.	1	C. S.	3		3	NW.	2	C. K.	8		3	NW.	4	C. K.	3
	6	S.	1	C. K. S.	3		6	W.	1	Clear	0		6	W.	2	C. K.	3
	9	S.	1	K.	10		9	NW.	2	Clear	0		9	W. NW.	2	Clear	0
Nov. 7	0	NW.	3	Clear	0	Nov. 8	0	NW.	4	K.	2	Nov. 9	0	W.	2	Clear	0
	3	NW.	3	C. K.	4		3	NW.	3	Clear	0		3	W.	3	Clear	0
	6	NW.	3	C. K.	10		6	W. NW.	4	Clear	0		6	W.	2	C. K.	3
	9	NW.	3	C.	2		9	W.	4	Clear	0		9	W. NW.	2	C. K.	10
	Noon	W. NW.	3	C. K.	7		Noon	W.	4	C.	1		Noon	NW.	2	C. K.	10
	3	W. NW.	4	C. K.	6		3	W.	4	C. K.	5		3	SW.	1	C. K.	10
	6	NW.	4	C. K. S.	3		6	W.	3	Clear	0		6	NW.	1	C. K.	10
	9	NW.	4	C. K.	8		9	W.	3	Clear	0		9	W.	1	C. K.	4
Nov. 10	0	W.	1	C. K.	3	Nov. 11	0	NW.	2	Haze		Nov. 12	0	W.	1	Clear	0
	3	W.	1	C. K.	10		3	NW.	2	K.	10		3	W.	1	Clear	0
	6	NW.	1	C. K.	3		6	NW	1	Haze			6	W.	1	Clear	0
	9	W.	2	S.	1		9	NW	1	C. K.	4		9	W. SW.	1	C. K.	3
	Noon	NW.	2	C. K.	4		Noon	W. NW	1	C. K.	1		Noon	W. SW.	2	C. K.	3
	3	W.	1	C. K.	8		3	W.	1	C. K.	1		3	W.	1	C. K.	10
	6	SW..	1	C. K. S.	3		6	W.	1	Clear	0		6	NW.	1	C. K.	10
	9	NW.	2	C. K.	3		9	W.	1	Clear	0		9	NW.	1	C. K.	10

REMARKS.

November 1. Light rain and hail at 1^h p. m. Amount, 0.004 inch.
2. Glass "jacket" of sun thermometer broken this afternoon.
5. Light rain at 6^h a. m.
7. A few snow-flakes at intervals during the day.
10. A brilliant meteor in the northwest at 6^h 53^m. Time of flight, 4 seconds.

Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.	Day.	Hour.	Wind. Direction.	Wind. Force.	Weather.	Portion cloudy.
1869. Nov. 13	0	W.	1	C. K.	7	1869. Nov. 14	0	N. NW.	2	N.	10	1869. Nov. 15	0	W. NW.	2	K.	10
	3	W.	1	C. K.	5		3	NW.	2	K.	10		3	W. NW.	2	C. K.	8
	6	W. NW.	1	Fog			6	NW.	2	K.	10		6	NW.	2	S.	1
	9	W.	1	K.	10		9	NW.	2	C. K.	9		9	NW.	2	C. K.	5
	Noon	N. NE.	1	N.	10		Noon	NW.	2	C. K.	10		Noon	NW.	3	C. K.	4
	3	NE.	1	K.	10		3	NW.	2	C. K.	10		3	NW.	2	C. K. S.	3
	6	NE.	2	K.	10		6	NW.	2	C. K.	10		6	NW.	1	C. K.	9
	9	NE.	1	N.	10		9	W. NW.	2	K.	10		9	W. NW.	2	C. K.	3
Nov. 16	0	W.	2	C. K.	3	Nov. 17	0	NE.	2	N.	10	Nov. 18	0	W.	1	Clear	0
	3	W.	1	C. K.	4		3	NE.	2	N.	10		3	W.	1	Clear	0
	6	NW.	1	C. K.	10		6	W. SW.	2	K.	10		6	W.	1	S.	1
	9	SW.	1	K.	10		9	NW.	3	K.	10		9	SW.	1	C. K. S.	3
	Noon	S.	1	N.	10		Noon	NW.	2	C. K.	9		Noon	SW.	2	C. K.	3
	3	NE.	1	N.	10		3	NW.	1	C. K.	8		3	W.	1	C. K.	9
	6	E.	1	K.	10		6	W.	1	C. K.	3		6	W.	1	C. K.	8
	9	NE.	1	N.	10		9	W.	1	C. K.	7		9	SW.	1	C. K.	10
Nov. 19	0	S.	1	C. K.	3	Nov. 20	0	N. NE.	2	N.	10	Nov. 21	0	W.	1	C.	2
	3	S.	1	Clear	0		3	N.	2	N.	10		3	W.	1	Clear	0
	6	S. SW.	1	C. K.	3		6	W.	2	C. K. S.	7		6	W.	1	K.	10
	9	SE.	1	C. K. S.	7		9	SW.	1	C. K.	2		9	W. SW.	1	C. K.	10
	Noon	S.	2	C. K.	9		Noon	SW.	1	C. K.	10		Noon	NW.	2	C. K. S.	10
	3	SE.	3	C. S.	2		3	SW.	1	N.	10		3	NW.	2	C. K.	8
	6	E.	2	C. K. S.	10		6	NW.	1	N.	10		6	NW.	2	C. K.	3
	9	N. NE.	2	N.	10		9	NW.	2	C. K.	10		9	NW.	1	C. K.	7
Nov. 22	0	NW.	2	C. K.	2	Nov. 23	0	SE.	2	C. K.	10	Nov. 24	0	S.	1	N.	10
	3	NW.	2	C. K.	1		3	S.	1	N.	10		3	W.	1	N.	10
	6	NW.	2	Clear	0		6	SW.	2	N.	10		6	NW.	2	C. K.	10
	9	S.	1	C. S.	4		9	SW.	1	N.	10		9	NW.	3	C. K. S.	10
	Noon	S.	1	C. K.	10		Noon	S. SW.	1	K.	10		Noon	NW.	3	C. K.	10
	3	S.	1	C. K. S.	9		3	S.	1	K.	10		3	NW.	3	C. K.	9
	6	SE.	1	C. S.	4		6	SE.	1	N.	10		6	NW.	1	Clear	0
	9	SE.	3	C. K.	10		9	SE.	1	N.	10		9	NW.	1	Clear	0
Nov. 25	0	NW.	2	Clear	0	Nov. 26	0	NW.	1	Clear	0	Nov. 27	0	S.	1	C. K.	9
	3	NW.	1	Clear	0		3	N. NW.	1	Clear	0		3	W.	1	C. K.	4
	6	NW.	1	Clear	0		6	NW.	1	C. S.	6		6	S.	1	C. K.	5
	9	NW.	2	C.	1		9	NW.	1	C. K.	6		9	S.	1	C. K. S.	9
	Noon	NW.	1	C.	2		Noon	S. SE.	1	C. K.	8		Noon	W.	1	C. K.	10
	3	W.	1	C. K.	4		3	SE.	1	C. K.	10		3	NW.	2	C. K.	7
	6	NW.	1	S.	1		6	S.	1	C. K.	10		6	NW.	3	C. K.	10
	9	NW.	1	S.	1		9	E.	1	K.	10		9	NW.	3	Clear	0

REMARKS.

November 16. Commenced snowing at 10^h 40^m a. m.; turned to rain after noon. Amount of rain and melted snow, 0.080 inch.

17. Rain during the morning. Amount, 0.590 inch.

19. Rain during the 19th and 20th, at intervals. Amount, 1.002 inch.

23. Rain during the day. Amount, 0.356 inch.

24. Rain ceased at 4^h a. m. Amount, 0.170 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. Nov. 28	0	NW.	2	C. S.	2	1869. Nov. 29	0	NW.	1	Haze		1869. Nov. 30	0	S.	1	C. K.	10
	3	NW.	1	S.	1		3	NW.	1	Haze			3	S.	2	K.	10
	6	W.	1	C. S.	2		6	SW.	1	C. K. S.	3		6	S.	2	C. K.	9
	9	W. NW.	1	Clear	0		9	NE.	1	C. K.	9		9	S. SW.	1	C. K. S.	9
	Noon	NW.	2	C. K.	2		Noon	S. SW.	1	K.	10		Noon	S.	3	C. K.	6
	3	W.	1	C. K.	3		3	SW.	1	C. K.	9		3	S.	2	C. K.	10
	6	W.	1	C. S.	1		6	SE.	1	K.	10		6	S.	3	K.	10
	9	NW.	2	Haze			9	SE.	1	K.	10		9	S.	2	K.	10
Dec. 1	0	S.	3	K.	10	Dec. 2	0	SW.	1	K.	10	Dec. 3	0	NW.	1	C. K.	2
	3	W.	2	Clear	0		3	SW.	1	K.	10		3	NW.	1	C. K.	4
	6	W. NW.	2	S.	1		6	SW.	1	K.	10		6	NW.	2	C. K.	10
	9	N.	2	C. K.	4		9	E.	1	K.	10		9	NW.	2	C. S.	2
	Noon	NW.	3	C. K.	7		Noon	S.	1	C. K.	6		Noon	NW.	3	N.	8
	3	NW.	2	C. K.	7		3	S.	1	C. K.	10		3	NW.	2	C. K. S.	7
	6	NW.	1	C. K. S.	3		6	S. SE.	1	N.	10		6	NW.	2	Clear	0
	9	NW.	1	Haze			9	E.	1	N.	10		9	NW.	1	S.	1
Dec. 4	0	NE.	1	C. K.	10	Dec. 5	0	E.	3	K.	10	Dec. 6	0	E.	1	N.	10
	3	SE.	1	C. K.	8		3	SW.	2	N.	10		3	E.	2	N.	10
	6	S.	1	C. K.	9		6	SW.	1	N.	10		6	E.	2	N.	10
	9	S.	1	C. K.	3		9	S.	1	N.	10		9	N. NW.	1	N.	10
	Noon	S. SW.	3	C. K.	9		Noon	SW.	1	N.	10		Noon	NW.	2	N.	10
	3	S.	2	C. K.	9		3	S.	1	K.	10		3	N. NW.	2	N.	10
	6	S. SE.	2	K.	10		6	SE.	1	N.	10		6	N. NW.	3	N.	10
	9	NE.	2	K.	10		9	E.	1	N.	10		9	NW.	5	C. K.	10
Dec. 7	0	NW.	5	C.	3	Dec. 8	0	NW.	1	K.	10	Dec. 9	0	NW.	2	C. K.	2
	3	NW.	4	Clear	0		3	NW.	1	K.	10		3	NW.	1	C. K.	9
	6	NW.	3	Clear	0		6	NW.	1	C. S.	2		6	W. NW.	1	Clear	0
	9	NW.	3	Clear	0		9	W.	1	C. S.	2		9	NW.	1	C.	2
	Noon	NW.	3	C.	1		Noon	N. NW.	1	C. K.	4		Noon	S. SW.	1	S.	1
	3	NW.	3	C. K.	2		3	NW.	2	C. K.	4		3	S. SW.	1	C.	1
	6	NW.	1	C. S.	1		6	W.	1	C. K.	9		6	SE.	1	S.	1
	9	NW.	1	Haze			9	NW.	1	C. K.	9		9	SW.	1	Clear	0
Dec. 10	0	W.	1	Clear	0	Dec. 11	0	NE.	1	K.	10	Dec. 12	0	S.	1	C. K.	10
	3	NW.	1	Clear	0		3	E.	1	C. K.	6		3	SE.	1	K.	10
	6	NW.	1	Clear	0		6	E.	1	C. S.	2		6	S.	2	C. K.	9
	9	NW.	1	Fog			9	SW.	1	C. K.	4		9	SW.	1	C. K.	2
	Noon	SW.	1	Haze			Noon	SW.	1	C. K.	6		Noon	W. SW.	2	C. S.	1
	3	SE.	1	Haze			3	SE.	1	C. K.	10		3	W.	1	C. K.	5
	6	SW.	1	Clear	0		6	SE.	1	C. K.	9		6	W.	1	C. S.	3
	9	SE.	1	C. K.	4		9	SE.	1	C. K.	9		9	W.	2	C.	2

REMARKS.

November 28. Several small meteors seen during the evening.
30. Light showers during the morning.
December 2. Snow from 6^h to 9^h p. m. Depth, 0.5 inch.
5. Rain and snow at intervals during the 5th and 6th; snow melted as it fell. Amount, 0.418 inch.
12. Light showers at intervals between 1^h and 3^h a. m. Amount, 0.248 inch.

Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.	Day.	Hour.	WIND. Direction.	WIND. Force.	Weather.	Portion cloudy.
1869. Dec. 13	0	W.	1	C.	1	1869. Dec. 14	0	N. NE.	1	C. K.	10	1869. Dec. 15	0	E.	1	K.	10
	3	W.	1	Clear	0		3	NE.	2	K.	10		3	E.	2	K.	10
	6	W. NW.	1	Clear	0		6	NE.	1	K.	10		6	E.	1	K.	10
	9	N. NE.	1	Haze			9	NE.	1	C. K.	8		9	NE.	1	K.	10
	Noon	NW.	2	C. K.	7		Noon	E.	1	C. K.	9		Noon	NE.	1	N.	10
	3	NW.	2	C. K.	9		3	NE.	1	K.	10		3	NE.	2	N.	10
	6	N. NW.	2	C. K.	10		6	E.	1	C. K.	9		6	NE.	2	N.	10
	9	N.	1	C. K.	10		9	E.	1	K.	10		9	NE.	3	N.	10
Dec. 16	0	NE.	3	N.	10	Dec. 17	0	NW.	1	Clear	0	Dec. 18	0	NE.	1	C. K.	9
	3	E.	2	N.	10		3	NW.	1	Clear	0		3	NE.	2	C. K.	10
	6	SE.	1	N.	10		6	NW.	1	Clear	0		6	NE.	2	N.	10
	9	SW.	1	C. K.	3		9	N. NW.	1	Clear	0		9	NE.	4	N.	10
	Noon	NW.	2	C. K.	3		Noon	S.	1	C. K.	4		Noon	N. NE.	2	N.	10
	3	NW.	1	C. K.	5		3	S.	1	C.	2		3	NW.	3	N.	10
	6	NW.	1	C. K.	9		6	E.	1	C. K.	9		6	NW.	5	N.	10
	9	NW.	2	C. K.	9		9	NE.	1	C. K.	9		9	NW.	5	N.	10
Dec. 19	0	NW.	3	C. K.	6	Dec. 20	0	S.	1	C. K.	10	Dec. 21	0	N.	1	C. K.	3
	3	W.	3	C. K.	8		3	S.	1	C. K.	10		3	N. NE.	1	C. K.	4
	6	W.	2	C. K.	9		6	S.	1	K.	10		6	NE.	2	C. K.	10
	9	W.	2	C. K.	9		9	S.	1	C. K. S.	7		9	NE.	2	N.	10
	Noon	W.	2	C. K.	3		Noon	S. SE.	1	C. K. S.	10		Noon	NE.	1	N.	10
	3	W.	2	C. K.	3		3	W.	1	C. K.	10		3	E. NE.	1	K.	10
	6	W.	1	C. K. S.	2		6	NW.	1	Clear	0		6	E. NE.	1	N.	10
	9	W.	1	C. K.	10		9	NW.	1	C. K.	2		9	E.	1	N.	10
Dec. 22	0	NE.	1	N.	10	Dec. 23	0	NW.	4	C. K.	10	Dec. 24	0	NW.	1	C. K.	3
	3	NE.	1	N.	10		3	NW.	4	C. K.	2		3	NW.	1	Clear	0
	6	NE.	1	N.	10		6	NW.	2	C. K.	2		6	NW.	1	C. K.	2
	9	NW.	3	N.	10		9	W. NW.	1	Clear	0		9	W.	1	C.	6
	Noon	W.	1	C. K.	10		Noon	W. NW.	2	C.	1		Noon	S.	1	C.	4
	3	SW.	2	K.	10		3	NW.	1	Clear	0		3	S.	1	C.	2
	6	W.	2	K.	10		6	NW.	1	C.	1		6	S.	1	Clear	0
	9	NW.	2	K.	10		9	NW.	1	Clear	0		9	S.	1	Clear	0
Dec. 25	0	NW.	1	C. S.	4	Dec. 26	0	N. NE.	1	N.	10	Dec. 27	0	SE.	1	N.	10
	3	NW.	1	C.	2		3	N.	2	N.	10		3	SE.	1	Fog	
	6	NW.	1	C. K.	9		6	N.	1	N.	10		6	NW.	1	N.	10
	9	NW.	1	Haze			9	NW.	1	N.	10		9	NW.	1	N.	10
	Noon	N. NW.	1	Haze			Noon	W. NW.	1	N.	10		Noon	N. NE.	1	N.	10
	3	N.	1	Haze			3	W.	2	K.	10		3	N. NE.	1	N.	10
	6	N.	1	N.	10		6	NW.	2	K.	10		6	NE.	1	N.	10
	9	N.	2	N.	10		9	NW.	2	K.	10		9	NE.	1	N.	10

REMARKS.

December 15. Rain during the afternoon and night. Amount, 0.582 inch.
18. Rain and snow from $5^h 25^m$ a. m. to $9^h 45^m$ p. m. Amount, 1.462 inch.
21. Snow, sleet, and rain on the 21st and 22d. Amount of melted snow and rain, 0.780 inch.
23. Strong wind at $2^h 30^m$ a. m.
24. A large meteor in the east at $8^h 30^m$ p. m.
25. A heavy white frost this morning. Began to rain at $3^h 20^m$ p. m. Amount, 0.420 inch.
26. Rain until 3^h p. m. Amount, 0.790 inch.
27. Rain during the day. Amount, 0.870 inch.

Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.	Day.	Hour.	WIND.		Weather.	Portion cloudy.
		Direction.	Force.					Direction.	Force.					Direction.	Force.		
1869. Dec. 28	0	SE.	1	N.	10	1869. Dec. 29	0	NW.	1	C. K.	6	1869. Dec. 30	0	NW.	1	C. K.	5
	3	SW.	1	N.	10		3	NW.	1	C. K.	3		3	NE.	1	C. K.	6
	6	NW.	2	N.	10		6	W. NW.	1	C. K.	6		6	SW.	1	C. K.	5
	9	NW.	2	N.	10		9	W. NW.	1	C.	2		9	SW.	1	C. S.	2
	Noon	NW.	3	C. K.	7		Noon	NW.	3	C. K.	6		Noon	NW.	2	Clear	0
	3	NW.	3	C. K. S.	3		3	NW.	2	C.	3		3	NW.	1	Clear	0
	6	NW.	1	S.	1		6	NW.	1	Clear	0		6	NW.	1	Clear	0
	9	NW.	1	Clear	0		9	NW.	1	Clear	0		9	NW.	1	Clear	0
Dec. 31	0	NW.	1	Clear	0												
	3	W.	1	Clear	0												
	6	W.	1	C.	3												
	9	S.	1	C. K.	3												
	Noon	SE.	1	C.	3												
	3	S.	1	C. K.	3												
	6	S.	1	C. K. S.	4												
	9	SW.	1	Haze													

REMARKS.

METEOROLOGICAL OBSERVATIONS.

MEAN MONTHLY AND ANNUAL RESULTS.

1869.

TABLE I.

Monthly Means of Barometric Pressure.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	in.	in.	in.	in.	in.	in.	in.	in.
January	29.954	29.948	29.954	29.991	29.953	29.927	29.952	29.966
February	29.910	29.891	29.896	29.919	29.906	29.868	29.896	29.923
March	29.992	29.983	30.002	30.026	29.998	29.957	29.963	29.981
April	29.873	29.861	29.894	29.907	29.878	29.835	29.839	29.871
May	29.774	29.762	29.778	29.819	29.772	29.737	29.741	29.778
June	29.933	29.922	29.941	29.955	29.937	29.899	29.892	29.926
July	29.917	29.908	29.932	29.951	29.939	29.901	29.895	29.929
August	29.985	29.982	29.999	30.020	29.997	29.953	29.943	29.972
September	30.106	30.102	30.122	30.141	30.111	30.078	30.075	30.106
October	29.946	29.945	29.960	29.981	29.942	29.907	29.923	29.951
November	29.968	29.956	29.965	29.995	29.962	29.937	29.956	29.962
December	30.084	30.089	30.097	30.122	30.084	30.064	30.091	30.109
Annual means.	29.954	29.946	29.962	29.986	29.957	29.921	29.930	29.956

TABLE II.

Monthly Means of Dry Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
January	34.98	34.06	33.13	34.60	42.15	44.44	39.60	36.78
February	34.58	33.93	32.97	36.38	42.39	44.67	40.67	36.69
March	35.84	34.46	32.83	37.91	45.02	47.18	43.38	39.23
April	47.54	44.65	43.60	52.49	57.99	60.43	56.72	51.09
May	53.96	51.58	52.25	59.65	64.79	67.55	64.53	57.60
June	66.47	64.29	64.12	71.43	77.07	78.70	74.68	69.35
July	69.25	67.76	67.24	74.40	81.51	82.51	79.19	72.69
August	69.28	66.95	65.96	74.68	82.13	88.11	79.52	72.13
September	61.50	59.70	58.70	66.39	75.72	77.53	70.35	64.41
October	45.10	43.59	42.65	48.62	56.16	57.70	51.34	46.80
November	34.94	33.55	32.71	36.54	44.28	45.33	40.36	37.57
December	35.21	33.62	32.61	34.16	40.72	41.26	37.27	35.65
Annual means.	49.05	47.34	46.56	52.25	59.16	61.28	56.47	51.67

TABLE III.

Monthly Means of Wet Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
January	34.41	33.54	32.92	33.92	33.80	40.34	37.32	35.54
February	33.72	33.21	32.66	34.94	39.00	40.04	37.57	35.08
March	35.31	33.78	32.45	36.15	40.91	41.96	39.87	37.47
April	44.48	43.08	42.34	47.92	50.70	51.89	50.37	47.22
May	52.66	50.71	51.33	55.67	58.91	60.08	58.07	55.22
June	65.32	63.80	63.64	68.36	70.35	71.82	69.97	67.03
July	68.07	66.64	66.38	70.45	74.38	75.01	73.58	70.13
August	67.55	65.78	64.91	69.78	73.02	74.92	72.57	68.91
September	60.19	58.88	58.30	63.55	67.50	69.10	65.21	62.32
October	44.43	43.07	42.27	46.27	51.05	51.82	48.67	45.57
November	33.64	33.00	32.23	35.20	40.13	40.73	37.62	35.74
December	34.59	32.84	32.49	33.52	38.04	38.56	36.51	35.04
Annual means.	47.86	46.53	45.99	49.64	53.15	54.69	52.28	49.61

TABLE IV.

Monthly Means of Sun Thermometer.

Date.	0h.	3h.	6h.	9h.	Noon.	3h.	6h.	9h.
1869.	°	°	°	°	°	°	°	°
January	34.00	32.86	32.02	41.74	70.34	65.77	42.87	35.62
February	32.94	32.43	31.44	53.01	75.75	69.49	38.78	34.88
March	34.63	33.57	31.83	67.12	85.62	77.80	49.02	38.58
April	44.06	43.25	42.93	89.81	101.10	102.77	87.73	56.02
May	53.36	50.40	53.74	89.51	107.93	113.19	102.66	69.07
June	65.79	59.17	68.50	108.37	120.50	122.37	115.10	82.20
July	65.39	62.64	65.81	103.52	115.42	108.17	84.43	66.63
August	65.25	62.69	63.80	100.50	117.15	112.72	80.55	67.98
September	57.14	55.36	55.37	90.43	105.69	100.32	67.00	59.94
October	41.37	39.98	38.87	67.69	77.49	72.45	47.68	42.41
November	32.41	31.14	30.11	46.04	60.67	51.75	38.66	35.25
December	33.64	32.09	31.41	44.94	67.68	52.54	37.14	34.26
Annual means.	46.66	44.63	45.49	75.22	92.11	87.44	65.97	51.90

TABLE V.

Amount of Rain and Snow in 1869.

Month.	Rain and Melted Snow.	Depth of Snow.
	in.	in.
January	4.966	
February	4.614	7.62
March	4.097	1.00
April	2.322	
May	4.892	
June	3.359	
July	3.226	
August	0.880	
September	2.424	
October	7.087	
November	2.242	
December	5.626	1.00
Total	45.735	9.62

TABLE VI.

Showing the number of times that the wind blew from the NORTH *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	5	3	4	2	3	4	0	2
February. . .	0	1	1	2	0	1	1	1
March . . .	1	3	5	3	5	3	1	1
April	1	2	1	2	2	0	0	0
May	1	1	1	4	3	2	3	2
June	2	2	2	2	2	0	0	4
July	3	3	3	4	2	2	2	2
August . . .	1	0	0	3	4	2	7	5
September . .	3	2	0	4	2	1	1	4
October . . .	1	0	1	2	0	0	0	2
November . .	2	1	1	0	2	0	0	1
December . .	3	2	1	4	3	4	3	3
Total . . .	23	20	20	32	28	19	18	27

Showing the number of times that the wind blew from the NORTHEAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	2	4	6	1	1	0	4	4
February. . .	4	4	2	1	1	1	2	2
March . . .	3	1	3	4	0	1	1	1
April	2	3	4	2	0	0	2	3
May	3	3	2	4	1	3	1	1
June	0	1	1	1	0	0	0	0
July	2	1	0	1	0	1	4	2
August . . .	3	4	3	4	1	1	0	0
September . .	1	1	4	3	2	2	2	4
October . . .	0	1	1	0	3	1	1	1
November . .	1	1	1	1	0	2	1	2
December . .	5	5	4	4	2	2	2	4
Total . . .	26	29	31	26	11	14	20	24

Showing the number of times that the wind blew from the EAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	2	0	1	4	0	0	1	0
February. . .	1	2	0	2	2	1	1	1
March . . .	2	2	1	1	1	2	0	1
April	0	0	0	1	0	1	0	1
May	3	0	1	1	0	0	3	3
June	0	0	0	0	1	0	1	0
July	0	0	0	0	1	0	0	1
August . . .	1	1	0	3	2	3	4	6
September . .	4	6	5	3	2	6	8	7
October . . .	1	0	0	0	0	0	0	0
November . .	0	0	0	0	0	0	2	1
December . .	3	4	2	1	1	1	3	4
Total . . .	17	15	10	16	10	14	23	25

Showing the number of times that the wind blew from the SOUTHEAST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	3	1	0	2	0	1	2	3
February. . .	2	1	1	0	1	2	4	4
March . . .	2	1	0	1	4	2	7	6
April	0	0	0	2	1	1	2	0
May	3	1	0	0	3	2	1	1
June	4	2	1	0	1	3	4	1
July	0	0	0	1	2	2	3	2
August . . .	5	3	4	2	1	3	6	1
September . .	5	4	1	2	2	6	5	3
October . . .	3	3	1	1	0	0	6	2
November . .	1	0	0	1	1	2	3	3
December . .	2	2	1	0	0	3	3	2
Total . . .	30	18	9	12	16	27	46	28

Showing the number of times that the wind blew from the SOUTH *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	7	6	4	5	9	9	8	9
February. . .	5	1	2	5	5	7	2	3
March . . .	4	4	2	3	4	3	3	3
April	4	5	4	4	7	8	9	6
May	4	2	2	9	4	6	5	4
June	4	2	2	6	8	9	8	8
July	7	3	3	6	9	8	8	5
August . . .	8	5	2	3	10	9	8	7
September . .	1	0	1	7	11	5	4	2
October . . .	2	2	4	4	7	8	5	1
November . .	5	3	4	4	10	6	5	2
December . .	3	1	3	4	6	7	4	1
Total . . .	54	34	33	60	90	85	69	51

Showing the number of times that the wind blew from the SOUTHWEST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	3	5	7	4	5	3	5	3
February. . .	0	4	6	2	2	3	2	0
March . . .	2	4	4	3	1	4	2	2
April	5	3	4	3	2	4	1	2
May	0	9	6	0	3	3	4	1
June	4	7	6	10	6	7	7	5
July	5	9	8	9	5	5	4	6
August . . .	3	6	4	7	3	2	4	4
September . .	2	4	3	2	4	2	2	1
October . . .	2	2	0	3	4	2	3	7
November . .	0	1	4	5	2	2	1	4
December . .	1	3	3	5	3	1	1	2
Total . . .	27	57	55	53	40	38	36	37

TABLE VI—Continued.

Showing the number of times that the wind blew from the WEST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	4	3	3	5	6	8	2	2
February. . .	4	3	6	3	10	4	3	4
March . . .	3	2	3	4	4	7	4	3
April	5	7	8	9	11	8	9	8
May	12	6	8	5	7	10	7	11
June	13	10	12	7	9	10	7	6
July	7	8	11	7	8	11	8	5
August . . .	5	5	12	5	4	5	2	5
September . .	3	6	8	3	3	4	4	3
October . . .	3	8	11	6	8	4	2	4
November . .	10	12	11	8	5	8	8	7
December . .	2	4	6	4	5	4	4	2
Total . . .	71	74	99	66	80	83	60	60

Showing the number of times that the wind blew from the NORTHWEST *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	5	8	6	8	7	6	10	8
February. . .	12	11	9	13	7	10	13	13
March . . .	11	11	10	7	8	7	10	11
April	12	10	9	6	7	8	7	10
May	5	9	11	7	10	5	6	7
June	4	6	6	4	3	1	3	6
July	7	8	6	3	4	2	4	8
August . . .	6	7	6	4	5	6	0	3
September . .	10	7	8	6	4	3	4	6
October . . .	19	16	11	12	10	14	14	14
November . .	11	12	12	11	10	9	10	10
December . .	12	10	10	9	9	11	11	14
Total . . .	114	115	104	90	84	82	92	110

Showing the number of times that it was CALM *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	0	0	0	0	0	0	0	0
February. . .	0	0	0	0	0	0	0	0
March . . .	0	0	0	0	0	0	0	0
April	0	0	0	0	0	0	0	0
May	0	0	0	0	0	0	0	0
June	0	0	0	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August . . .	0	0	0	0	0	0	0	0
September . .	0	0	0	0	0	1	0	0
October . . .	0	0	0	0	0	1	0	0
November . .	0	0	0	0	0	0	0	0
December . .	0	0	0	0	0	0	0	0
Total . . .	0	0	0	0	0	2	0	0

TABLE VII.

Showing the number of times that it was CLEAR *at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	10	8	7	4	6	3	3	9
February. . .	10	6	5	3	3	3	3	11
March . . .	7	10	4	4	2	1	2	8
April	9	7	3	3	0	1	4	9
May	6	3	2	2	1	1	1	8
June	4	2	1	1	0	1	1	3
July	8	5	2	1	0	0	2	5
August . . .	9	7	2	4	1	1	1	8
September . .	15	10	8	10	4	6	8	13
October . . .	12	12	5	5	3	6	9	16
November . .	11	11	5	2	0	1	4	7
December . .	3	7	5	3	1	2	6	6
Total . . .	104	88	49	42	21	26	44	103

Showing the number of times that CIRRUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	2	1	1	2	1	3	1	1
February. . .	1	2	0	0	1	1	0	1
March . . .	1	0	0	1	4	4	2	2
April	0	3	4	4	3	4	0	3
May	4	2	3	3	3	3	0	3
June	4	3	2	4	1	1	1	4
July	1	2	3	1	1	1	3	6
August . . .	3	7	2	4	1	3	1	4
September . .	1	1	1	1	2	1	1	1
October . . .	1	1	0	1	0	0	0	1
November . .	1	0	1	4	2	0	0	0
December . .	2	1	1	3	4	4	1	1
Total . . .	21	23	18	28	23	25	10	27

TABLE VII—Continued.

Showing the number of times that CIRRO-CUMULUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	8	10	10	12	17	19	13	10
February. . .	8	7	13	13	16	15	9	8
March . . .	9	7	7	12	16	18	9	6
April	13	12	16	19	20	21	18	10
May	13	15	12	15	14	17	18	10
June	14	15	14	20	24	21	21	14
July	15	13	13	11	22	23	15	13
August . . .	16	12	10	11	14	20	20	12
September . .	8	7	5	14	23	19	15	11
October . . .	12	7	9	13	22	21	9	6
November . .	8	8	9	14	21	20	10	11
December . .	13	11	12	8	15	13	7	9
Total . . .	137	124	130	162	224	227	164	120

Showing the number of times that CIRRO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	0	0	0	1	0	0	2	0
February. . .	0	0	2	2	2	1	1	1
March . . .	0	0	2	2	0	0	2	2
April	2	2	2	3	0	0	3	1
May	0	0	3	0	0	0	0	0
June	0	2	2	1	0	0	0	0
July	0	1	1	1	1	0	0	1
August . . .	0	1	0	0	0	0	0	0
September . .	0	1	1	0	0	0	2	1
October . . .	0	0	1	1	0	0	2	0
November . .	1	0	4	1	0	1	3	0
December . .	1	0	1	3	0	0	2	0
Total . . .	4	7	19	15	3	2	17	6

Showing the number of times that CUMULUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	3	6	8	5	0	0	5	4
February. . .	4	2	1	1	3	2	5	2
March . . .	5	6	3	1	0	0	3	5
April	1	2	0	0	0	1	0	3
May	3	2	4	2	1	2	3	4
June	5	4	1	0	0	1	2	3
July	0	1	1	1	1	1	0	1
August . . .	2	2	2	2	2	0	0	2
September . .	3	5	6	1	0	1	0	1
October . . .	1	4	3	3	0	1	2	6
November . .	2	4	4	1	2	2	4	5
December . .	6	5	4	2	0	5	3	4
Total . . .	35	43	37	19	9	16	27	40

Showing the number of times that CUMULO-STRATUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	1	0	0	1	1	0	0	0
February. . .	0	0	0	3	0	0	4	0
March . . .	0	0	4	0	0	0	6	0
April	1	0	0	0	0	0	2	0
May	0	1	0	0	1	0	0	0
June	0	1	1	0	0	0	0	0
July	0	0	0	0	0	0	0	0
August . . .	0	0	2	0	0	0	5	1
September . .	1	1	1	0	0	1	1	0
October . . .	1	0	1	0	0	0	2	0
November . .	0	0	1	3	0	2	3	0
December . .	0	0	0	1	0	1	2	0
Total . . .	4	3	10	8	2	4	25	1

Showing the number of times that STRATUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	0	1	0	0	0	0	3	1
February. . .	0	0	1	1	0	0	1	1
March . . .	2	2	2	1	0	0	0	1
April	1	0	0	1	1	0	0	2
May	0	0	0	0	0	0	0	0
June	1	0	0	0	0	0	0	2
July	2	0	0	1	0	0	0	1
August . . .	0	0	0	0	0	0	0	1
September . .	0	0	3	0	0	0	0	1
October . . .	0	1	2	0	0	0	2	0
November . .	0	1	2	1	0	0	1	1
December . .	0	0	1	0	1	0	2	1
Total . . .	6	5	11	5	2	0	9	12

Showing the number of times that NIMBUS *clouds prevailed at the hours of observation.*

Month.	0^h.	3^h.	6^h.	9^h.	Noon.	3^h.	6^h.	9^h.
1869.								
January . . .	6	5	5	5	6	5	5	4
February. . .	4	7	5	3	2	3	4	4
March . . .	4	3	4	4	3	4	3	4
April	3	3	1	2	3	2	2	2
May	3	6	5	5	6	3	6	3
June	1	1	4	1	2	2	3	3
July	2	3	2	2	0	1	0	1
August . . .	0	0	2	1	2	1	0	1
September . .	1	2	2	3	1	2	1	2
October . . .	2	2	3	3	5	4	4	1
November . .	4	4	2	2	1	2	2	4
December . .	6	7	8	8	8	4	8	7
Total . . .	36	43	43	39	39	33	38	36

LIST

OF

PUBLICATIONS PRESENTED TO THE LIBRARY

DURING

THE YEAR 1869.

LIST OF PUBLICATIONS PRESENTED TO THE LIBRARY IN 1869.

Date.	Publications.	From whom received.
Jan. 7	Mittheilungen der kaiserlich-königlichen geographischen Gesellschaft in Wien. Neue Folge. 1868.	A. Becker, General Secretary, Vienna.
	Jahrbücher der kaiserlich-königlichen Central-Anstalt für Meteorologie. Neue Folge. Band III. Jahrgang 1866.	Dr. C. Jelinek and C. Fritsch, Vienna.
	Planet Observationer anställda År 1867, på Lund's Observatorium.	Dr. Axel Möller, Director of the Observatory, Lund, Sweden.
	Bestämning af Polhojden för Lund's Observatorium medelst Observationer i första Vertikalen. Backlund.	A. V. Backlund, Lund, Sweden.
	Mittheilungen aus Justus Perthes' geographischer Anstalt, No. X, 1868, und Ergänzungsheft, No. 24.	Justus Perthes, Gotha, Germany.
	Die Temperatur-Abnahme mit der Höhe als eine Function der Windesrichtung. Hahn.	Dr. Julius Hahn, Vienna.
	Zu der Charakteristik der Winde des adriatischen Meeres	The same.
	Die thermischen Verhältnisse der Luftströmungen auf dem Obir (6288 pariser Fuss) in Kärnthen.	The same.
	Zeitschrift der österreichischen Gesellschaft für Meteorologie. Redigirt von C. Jelinek und J. Hahn. Band III, Nos. 16–20.	Dr. C. Jelinek, Vienna.
	Observations météorologiques faites à l'observatoire d'Upsal pendant les années 1855–'62.	Dr. Gus. Svanberg, Director, Upsala, Sweden.
	Om Stormen den 30 Maj 1865, och följan de dagar. R. Rubenson.	R. Rubenson, Upsala, Sweden.
	Astronomische Beobachtungen auf der Sternwarte zu Bonn. Von Dr. F. W. A. Argelander. 6ter Band, und 7ter Band, 1ste Abtheilung.	Dr. F. W. A. Argelander, Bonn, Germany.
	Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin, 1861–'66.	Dr. A. Auwers, Secretary of the Imperial Academy, Vienna.
18	Publiche date del magnetoelettrico ed elettromagnetico dell A. B. Fran. Cav. Zantedeschi, 1868.	Francesco Cav. Zantedeschi, Padua.
	Monthly Meteorological Register at the Provincial Magnetic Observatory, Toronto, Canada West. April to December, 1867.	G. T. Kingston, Director of the Provincial Magnetic Observatory, Canada West.
	General Meteorological Register, 1867	The same.
	Astronomical, Magnetic, and Meteorological Observations made at the Royal Observatory, Greenwich, during 1866.	G. B. Airy, Esq., F. R. A. S., Astronomer-Royal, Greenwich.
	Results of Astronomical Observations, 1866	The same.
	Results of Magnetic and Meteorological Observations, 1866	The same.
20	La scienza alla exposizione universale di Parigi nel 1867. Osservazioni del Prof. Cav. F. Zantedeschi.	Prof. Cav. Francesco Zantedeschi, Padua.
	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie und Erdmagnetismus, November, 1868.	Dr. C. Jelinek, Director Central-Anstalt, Vienna.
	Telegraphische Witterungsberichte, December, 1868	The same.
30	Journal of the Statistical Society of London, December, 1868	F. Purdy, Esq., Editor, London.
	Bulletin mensuel de la société zoologique impériale d'acclimatation.	M. Eugène Grisard, Agent, Paris.
Feb. 4	Le stelle cadenti del periodo di Agosto, osservate in Piemonte ed in altra de contrade d'Italia, nel 1868. Memoria IV del P. Francesco Denza, direttore dell osservatorio Reale Collegio Carlo Alberto in Moncalieri.	Padre Francesco Denza, Director of the Observatory, Moncalieri, Italy.
	Report of the Commissioner of Agriculture for the year 1867	Hon. Horace Capron, Commissioner.
10	Bulletin de la société de géographie. Octobre 1868	C. Maunoir, Secretary, Paris.
	Zeitschrift der österreichischen Gesellschaft für Meteorologie. Nos. 21, 22.	Dr. C. Jelinek, Vienna.
	Bericht der königlichen Sternwarte zu Berlin für das Jahr 1867	Dr. W. Foerster, Director of the Royal Observatory, Berlin.
16	Meteorological Observations made at the private observatory of J. Tebbut, jr., Windsor, New South Wales. 1863–'66.	John Tebbut, jr., Windsor, New South Wales.
18	A Synopsis of all Sir William Herschel's Micrometrical Measurements and Estimated Positions and Distances of the Double Stars described by him. Sir J. F. W. Herschel.	Sir John F. W. Herschel, London.
	Magnetische und meteorologische Beobachtungen zu Prag. 1860: 1865–'68.	Dr. Karl Hornstein, Director of the Observatory at Prague.
	Jahresberichte nam 24. Mai 1867 und 24. Mai 1868 dem Comité der Nicolai-Hauptsternwarte.	Otto von Struve, Director of the Pulkova Observatory.
	Note sur les satellites d'Uranus. O. Struve	The same.
	Bemerkungen über die gegen Herrn Le Verrier erhobenen Angriffe in Betreff der Identität des Neptun mit dem Planeten dessen Ort er aus den Uranus-Störungen theoretisch abgeleitet hatte. Struve.	Otto von Struve, Director of the Pulkova Observatory.
	Untersuchungen über die Constitution der Atmosphäre und die Strahlenbrechung in derselben. Dr. H. Gylden.	The same.

Date.	Publications.	From whom received.
Feb. 18	Nouvelle détermination de la parallaxe annuelle des étoiles α Lyræ et 61 Cygni. O. Struve.	Otto von Struve, Director of the Pulkova Observatory.
	Ueber Prof. Mädler's Untersuchungen über die eigenen Bewegungen der Fixsterne. Von C. A. F. Peters.	The same.
	Von den kleinen Ablenkungen der Lothlinie und des Niveaus welche durch die Anziehungen der Sonne, des Mondes und einiger terrestrischen Gegenstände hervorgebracht werden. C. A. F. Peters.	The same.
	Die Zeitbestimmung vermittelst des tragbaren Durchgangsinstruments im Verticale des Polarsterns. Struve.	The same.
	Die periodischen Erscheinungen des Pflanzenlebens. Linseer.....	The same.
	Observations de quelques étoiles doubles nouvellement découvertes. O. Struve.	The same.
	Résultats de quelques observations supplémentaires faites sur des étoiles doubles artificielles. O. Struve.	The same.
	Observations et orbite de l'étoile double Σ. 1728=42 Comæ Berenicis. O. Struve.	The same.
	Tabulæ auxiliares ad transitus per planum verticale reducendos inservientes. O. Struve.	The same.
	Bemerkung zu der Berechnung der Aequator-Constanten, nebst Anwendung auf Comet I, 1866. Gylden.	The same.
	Annalen der Sternwarte in Leiden. Herausgegeben von Dr. Kaisir. Erster Band. Harlem, 1868.	Dr. Kaisir, Director of Observatory, Leiden.
	Ueber einen neuen Apparat zur absoluten Bestimmung von persönlichen Fehlern bei astronomischen Beobachtungen. Von F. Kaisir. Amsterdam, 1867.	The same.
	Verslag van den Staat der Sterrewacht te Leiden, en van de aldaar volbragte Werkzaamheden, in het Tidjvak van den ersten 1864–1868.	The same.
	Enige Opmerkingen omtrent de periodieke Fouten van Mikrometerschroeven naar Aanleiding van de jongste Ondersoekungen aan de Sterrewachte te Leiden. F. Kaisir. 1867.	The same.
	Rapport omtrent de tweede algemeene Bijeenkomst der Gemagtigden voor de Graadmeting in Europa, uitgehagt door F. Kaisir. 1867.	The same.
19	Proceedings of the American Academy of Arts and Sciences. Vol. VII, pp. 345–525.	The Secretary of the American Academy of Arts and Sciences, Boston.
	Mittheilungen aus Justus Perthes' geographischer Anstalt. No. XI, 1868.	Justus Perthes, Gotha.
	Proceedings of the Royal Geographical Society, London. Vol. XIII, No. 5.	C. Markham and R. Major, Secretaries.
	De Eischen der Medewerking aan te ontworpen Graadmeting in Midden-Europa. Kaisir en Stuart.	F. Kaisir and L. C. Stuart, Leiden.
	Nederlandsch meteorologisch Jaarboek voor 1867. 2 vols........	Buys Ballot, Director Netherland Meteorological Institute, Utrecht.
	Sur la marche annuelle du thermomètre et du baromètre en Neerlande et en divers lieux de l'Europe, 1849–'59. Buys Ballot.	The same.
	Zeitschrift für Meteorologie. III. Band, Nos. 21–24. IV. Band, Nos. 1 und 2.	Dr. C. Jelinek, Vienna.
	On the Temperature of the Sea at the Surface near the South Point of Africa. Cornelissen.	J. E. Cornelissen, Royal Dutch Navy.
	Meteorologiske Iagttagelser paa Christiania's Observatorium. 1867.	The Director of the Meteorological Observatory, Christiania.
	Norsk meteorologisk Aarbog. 1867..............................	The same.
	L'origine des étoiles filantes. Bruck..........................	R. Bruck, Major du Génie, Bruxelles.
	Traité élémentaire des fonctions elliptiques, par Dr. O. J. Brosch. 2 fasc.	Dr. O. J. Brosch, University of Christiania.
	Untersuchungen über die Beobachtungen von Bessel und Schlüter am Königsberger Heliometer zur Bestimmung der Parallaxe von 61 Cygni. Auwers,	Dr. A. Auwers, Berlin.
March 1	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie. December, 1868,	Dr. C. Jelinek, Vienna.
	Telegraphische Witterungsberichte. Januar-Mai 1868	The same.
12	Bolletino meteorologico ed astronomico del reale osservatorio di Torino. Anno 1868.	Prof. A. Dorna, Director, Turin.
	Meteorological Papers compiled by Rear-Admiral Fitzroy. Nos. 10, 11, 12.	Mr. R. H. Scott, Director, Meteorological Office, London.
	Meteorological Papers published by the Board of Trade, 1862, (to No. 14).	The same.
	Meteorological Papers published by the Meteorological Office. 1863–'64.	The same.
	Barometer Manual. 1863....................................	The same.
	Coast Barometer Manual. 1863..............................	The same.
16	Mittheilungen aus Justus Perthes' geographischer Anstalt. 1866, No. XI. 1868, No. XII. Ergänzungsheft 19 und 25.	Justus Perthes, Gotha.
	Journal of the Scottish Meteorological Society. Nos. 1 to 21, except 5 and 6.	Alex. Buchan, Esq., F. R. S., Edinburgh.

Date.	Publications.	From whom received.
March 16	Denkschriften der kaiserlichen Akademie der Wissenschaften. Band XXVIII.	Prof. A. Schrötter, General Secretary, Vienna.
	Nova acta regiæ societatis scientiarum Upsaliensis. Serei tertiæ. Vol. VI, fasc. II. 1868.	Prof. A. J. Ångström, Secretary, Upsala.
	Meteorologische Beobachtungen angestellt auf der Leipziger Universitäts-Sternwarte im Jahre 1867.	Dr. C. Bruhns, Director, Leipzig.
	Résumé météorologique des années 1866 et 1867, pour Genève et le Grand St. Bernard. Plantamour.	Prof. E. Plantamour, Geneva.
	Ueber die Bahn des am 30. Januar 1868 beobachtenden und bei Pultusk im Königreiche Polen als Steinregen niedergefallen Meteors durch die Atmosphäre.	Prof. Dr. J. G. Galle, Breslau.
	Schweizerische meteorologische Beobachtungen. 1865, and Januar, Februar, 1868.	Prof. Dr. R. Wolf, Zurich, Switzerland.
17	Contributions to Terrestrial Magnetism. No. XI. Lieutenant-General E. Sabine.	Mr. R. H. Scott, Director of the Meteorological Office, London.
April 21	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie. Jan., Feb. 1869.	Dr. Jelinek, Vienna.
	Telegraphische Witterungsberichte. February, 1869	The same.
23	Specimens of Curves furnished by the Self-recording Instruments at the Observatories established by the Meteorological Office.	Mr. R. H. Scott, Director, London.
27	Traité élémentaire des fonctions elliptiques. 2d part. Brosch	Dr. Brosch, Christiania, Norway.
	Oversigt over det kongelige-danske Videnskabernes. Nos. 1 and 2. 1868. Steenstrup.	J. Japetus Smith Steenstrup, Copenhagen.
	Schweizerische meteorologische Beobachtungen. März, April, Mai, 1868.	Dr. R. Wolf, Zurich.
	Journal of the Scottish Meteorological Society. January, 1869	A. Buchan, Esq., Secretary, Edinburgh.
	Proceedings of the Royal Geographical Society. Vol. XIII, No. 1	H. W. Bates, Secretary, London.
	Transactions of the Royal Society. Vol. 158, parts 1 and 2	Prof. W. H. Miller, Secretary, Cambridge.
	Proceedings of the Royal Society. Nos. 101 to 110	The same.
	List of Fellows, to November 30, 1869	The same.
	Mittheilungen aus Justus Perthes' geographischer Anstalt. 1869. Nos. I, II.	J. Perthes, Gotha.
	Vierunddreissigster Jahresbericht des Mannheimer Vereins für Naturkunde. 1868.	Dr. E. Weber, Vice-President of the Society of Natural Sciences, Mannheim.
	Abhandlungen der Akademie der Wissenschaften zu Berlin. 1867	E. E. Knemmer, Secretary, Berlin.
	Transits of Venus, 1874 and 1882. Airy.	G. B. Airy, Esq., F. R. S., Director Royal Observatory, Greenwich.
	Bulletin de la société de géographie. Février 1869	C. Maunoir, Secretary, Paris.
May 4	Intorno al magnetismo traversale alla direzione della corrente elettrico.	Prof. C. F. Zantedeschi, Padua.
	Incertezze della livellazione barometrica e geodetica	The same.
	Zeitschrift der österreichischen Gesellschaft für Meteorologie. No. 9. 1868.	Dr. C. Jelinek, Vienna.
7	Summary of Meteorological Observations at Brisbane, Queensland, Australia. January, 1869.	E. MacDonnell, Meteorological Observer, Brisbane, Queensland, Australia.
15	Weather Reports. July 1 to December 31, 1868	Meteorological Office, R. H. Scott, Director, London.
25	Tables to Facilitate the Reduction of Places of the Fixed Stars. Prepared for the American Ephemeris and Nautical Almanac.	Prof. J. H. C. Coffin, U. S. N., Superintendent Nautical Almanac.
June 1	Bulletino meteorologico dell Reale Osservatorio Collegio Carlo Alberto. Vol. IV, Nos. 1, 2, and 3.	Director Royal Observatory College Carlo Alberto, Moncalieri.
	Zeitschrift der österreichischen Gesellschaft für Meteorologie. 1868. No. 10.	Dr. C. Jelinek, Vienna.
	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie. März 1869.	The same.
	Telegraphische Witterungsberichte	The same.
	Discorso del Comm. Cristoforo Negri, presidente della Societa Geographica Italiana.	Comm. Cristoforo Negri, Florence.
	Annual Address delivered before the Cincinnati Astronomical Society, June, 1845, by E. D. Mansfield, Esq.	Prof. C. Abbe, Director of the Cincinnati Observatory.
	Oration before the Cincinnati Astronomical Society, on laying the Corner-stone of the Observatory, by John Quincy Adams, November 10, 1843.	The same.
	Planet- och Komet-Observationer anställda År 1868 på Lund's Observatorium. Utgifna A. Möller.	Prof. Axel Möller, Lund, Sweden.
5	Bulletino meteorologico del Reale Osservatorio di Palermo. Vol. IV, Nos. 3 to 9.	G. Cacciatore, Director of the Observatory.
23	Proceedings of the Royal Geographical Society. Vol. XIV, No. 1	H. W. Bates, Esq., Editor.
	Beobachtungen des meteorologischen Observatoriums auf dem Hohenpeissenberg. Von 1851–'64. Lamont.	Dr. J. Lamont.
	Monatliche und jährliche Resultate zu der königlichen Sternwarte bei München von 1857 bis 1866.	The same.
	Proceedings of the Literary and Philosophical Society of Liverpool. 1865–'66. Nos. 19, 20, and 21.	J. C. Redish, Honorary Secretary, Liverpool.
	Mittheilungen aus Justus Perthes' geographischer Anstalt. 1869. No. III, und Ergänzungsheft No. 27.	Justus Perthes, Gotha, Germany.

Date.	Publications.	From whom received.
June 23	Sitzungsberichte der königlich-bayerischen Akademie der Wissenschaften zu München. 1867, Band II, Heft 3 und 4; 1868, Band I, Heft 1, 2, 3, 4; Band II, Heft 1, 2, 3, 4.	C. Wiedman, Secretary Royal Bavarian Academy of Sciences, Munich, Bavaria.
	Note sur les étoiles filantes du mois de Novembre 1868, par M. Ad. Quetelet.	M. Ad. Quetelet, Director of the Royal Observatory, Brussels.
	Annuaire de l'observatoire royal de Bruxelles, par M. Ad. Quetelet, directeur. 1869. 36me année.	The same.
	Sur la différence de longitude entre les observatoires de Leyde et Bruxelles. Quetelet.	The same.
	Observations des phénomènes périodiques pendant les années 1865 et 1866. A. Quetelet.	The same.
	Progrès des travaux statistiques, par M. Ad. Quetelet	The same.
	Physique sociale; ou, essai sur le développement des facultés de l'homme. A. Quetelet. Tome I.	The same.
	Bulletino meteorologico dell' osservatorio del Reale Collegio Carlo Alberto in Moncalieri.	The Director of the Observatory of the Royal College Carlo Alberto, near Turin, Italy.
24	Telegraphische Witterungsberichte der kaiserlich-königlichen Central-Anstalt für Meteorologie und Erdmagnetismus. April, 1868.	Dr. C. Jelinek, Director Central-Anstalt, Vienna.
	Beobachtungen an der kaiserlich-königlichen Central-Anstalt. April, 1869.	The same.
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24	Termografia-agghiacciamento. Memoria del Prof. A. B. Cav. Zantedeschi letta nella pontificia accademia Tiberina dal Pres. Annuale. Prof. Cav. A. Betocchi nella tornali del 18. Gennaro 1869.	Prof. Cav. Zantedeschi, Padua.
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26	Curvas que representan la marcha de los instrumentos meteorometricos durante el mes de Dec. 1868; Jan., Feb., Mar. 1869.	The Director of the Observatory of the City Athenæum of Manila.
27	Schweizerische meteorologische Beobachtungen. June, July, and August, 1868.	Dr. R. Wolf, Zurich.
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	Beiträge zu Littrow's Kalender, 1869. Sternschuppen und Kometen.	The same.
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	Magnetische und Meteorologische Beobachtungen. Kaiserlich-königliche Sternwarte zu Prag. 1868. Hornstein und Nurmann.	Dr. Karl Hornstein, Director, Prague.
31	Mittheilungen aus Justus Perthes' geographischer Anstalt 1869. Nos. IV, V. Ergänzungsheft No. 26.	Justus Perthes, Gotha.
	Atlas météorologique de l'observatoire impériale. 1867	U.-J. Le Verrier, Directeur de l'Observatoire.
	Atlas des mouvemens généraux de l'atmosphère. 1865	The same.
August 5	Notes and Queries. July 24, 1869	Science and Art Department of South Kensington Museum, London.
	Ueber eine bisher unbenutzte Quelle magnetischer Declinations-Beobachtungen. C. Doppler.	C. Doppler, Vienna.
10	Bulletino meteorologico del Reale Collegio Carlo Alberto in Moncalieri. Vol. IV, No. 5.	The Director of the Observatory of the Royal College Carlo Alberto, Moncalieri.
	Tafeln der Pomona mit Berücksichtigung der Störungen durch Jupiter, Saturn, und Mars. Lesser.	The Secretary of the German Astronomical Association, Leipsic.
	Vierteljahrsschrift der astronomischen Gesellschaft. IV. Jahrgang, 2. Heft.	The same.

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	Report to the Board of Visitors of the Royal Observatory, Greenwich. Read at the annual visitation, June 5, 1869.	G. B. Airy, Esq., Astronomer-Royal, Greenwich.
	Beobachtungen an der kaiserlich-königlichen Central-Anstalt für Meteorologie und Erdmagnetismus. June, 1869,	Dr. C. H. Jelinek, Vienna.
25	Charts showing the Surface-Temperature of the South Atlantic Ocean for each month of the year.	R. H. Scott, Director of the Meteorological Office, London.
	Weather Reports to June 30, 1869	The same.
	Tidal Charts of the Atlantic Ocean	Capt. G. H. Richards, Hydrographic Office, London.
Sept. 1	Photographs of the Eclipse of the Sun of August 7, 1869, taken by the Academy of Natural Sciences at Davenport, Iowa.	W. H. Pratt, Secretary of the Academy of Natural Sciences, Davenport.
	Report of Observations of the Eclipse by Prof. D. S. Shelden	The same.
Oct. 10	Forsok till Bestämnig af Precessionskonstanten medelst Ljussvaga Stjernon. M. Nyren.	M. Nyren, Upsala, Sweden.
	General Meteorological Register, for the year 1868, of the Magnetical Observatory, Toronto, Ontario.	Mr. T. G. Kingston, Director of the Magnetical Observatory.
	Monthly Meteorological Register at the Magnetical Observatory, Toronto, Ontario. September, October, November, December, 1868.	The same.
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	American Ephemeris and Nautical Almanac. 1871	Prof. J. H. C. Coffin, Superintendent.
16	Bulletin de l'observatoire météorologique de Montsouris. Première partie, texte explicatif 1869; deuxième partie. July to August 13, 1869.	M. Chas. St. Clair Deville, Director of Observatory, Montsouris.
	Annotasioni alla topografia atmosferica della statistica Italiana teorica e pratica del Cav. Avv. Luigi Guala. Zantedeschi. Padova, 1869.	Prof. F. Zantedeschi, Padua.
	Report of the Meteorological Reporter to the Government of Bengal for 1867 and 1868.	H. J. Blanford, Esq., Meteorological Reporter, Calcutta.
25	Bulletin de la société de géographie. Août 1869.	C. Maunoir, Secretary, Paris.
26	Report of the Meteorological Committee of the Royal Society. December 31, 1868.	R. H. Scott, 116 Victoria street, London.
	Schriften der naturforschenden Gesellschaft zu Danzig. Neue Folge, zweiter Band, zweites Heft.	Prof. A. Menge, Secretary of the Society of Natural Sciences, Dantzic, Prussia.
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	Normale fünftägige Wärmemittel für 88 Stationen, bezogen auf den 20-jährigen. Zeitraum 1848–'67.	Dr. Carl Jelinek, Vienna.
	Anleitung zur Anstellung meteorologischer Beobachtungen und Sammlung von Hülfstafeln. Jelinek.	The same.
	Ueber den Planeten Cybele. 1868. H. Fritsch. Leipzig	Dr. H. Fritsch, Leipsic, Director of the Observatory at Peking.
	Notiz über die Nordlichter vom 3. auf dem 4. April und vom 1. auf dem 2. Mai. H. Wild.	H. Wild, Director of the Central Physiological Observatory, St. Petersburg.
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	Mémoire sur une nouvelle méthode pour déterminer la distance de quelques étoiles. Dufour.	Prof. C. Dufour, Morges.
	Preliminary Investigation into the Laws regulating the Peaks and Hollows exhibited in the Kew Magnetic Curves during the first two years. Stewart.	Balfour Stewart, Esq., Kew Observatory.
	Mittheilungen aus Justus Perthes' geographischer Anstalt. 1869. Nos. VI, VII.	Justus Perthes, Gotha.
	Rapport sur les travaux géodésiques du Portugal	F. Folque, Général de Brigade, Directeur de l'Institut de Géographie, Lisbon.
	Eleven Charts, Geological and Hydrographic, of Portugal	The same.
	Estudos geologicas: descripçao do solo quaterno dos bacias hydrographicas do tejo e sado por Carlos Ribiero. 1º caderno: paginas 1–164.	The Director of the Royal Observatory, Lisbon, Portugal.
	Estudos geologicos: da existencia do hommen no nosso solo em tempos mui remotos provada pelo estudo das cavernas.	The same.
	Journal of the Royal Geographical Society. Vol. 38	C. R. Markham and R. Major, Secretaries, London.
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	Spostrezenia Meteorol. robiere W. C. K. Observatorium Astronom. W. Krakowie od Grunia 1866, po koniec Listopada 1867, r.	The Director of the Astronomical and Meteorological Observatory, Cracow.
	Oversigt over det koniglik danske Videnskabernes Selskabs Forhandlingen og dets Medlemmer Arbeider 1. Aararet 1867, 1868, 1869. Steenstrup.	J. Japetus Smith Steenstrup, Secretary of the Royal Danish Academy, Copenhagen.
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Dec. 10	Atlas météorologique de l'observatoire impériale. 1866	The Director of the Imperial Observ'ry, Paris.
	Atlas des mouvemens généraux de l'atmosphère. Ap'l-Juin, 1868	The same.
	Analyse infinitésimale des courbes tracés sur une surface quelconque. Abbe Aoust.	Abbe Aoust, Marseilles.
	Abhandlungen der königlichen Akademie der Wissenschaften zu Berlin. 1868.	The Secretary of the Royal Academy of Sciences, Berlin.
	Proceedings of the Literary and Philosophical Society of Manchester. Vols. V, VI, VII. Memoirs, 3d series, vol. III.	Mr. Chas. Bailey, Librarian, Manchester.
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	Mittheilungen aus Justus Perthes' geographischer Anstalt. 1869. No. VIII.	Justus Perthes, Gotha.
	Materyaly do Klimatografii Galicyi. Rok. 1867, 1868	The Director of the Observatory, Cracow.
	Die Temperatur-Verhältnisse der Jahre 1848–'63 an den Stationen öesterreichischen.	Dr. C. Jelinek, Vienna.
	Schweizerische meteorologische Beobachtungen. September, October, November, 1868.	Dr. R. Wolf, Zurich.
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	Journal of the Statistical Society of London. September, 1869	F. Purdy, Esq., Editor.
	Journal of the Scottish Meteorological Society. No. XXIII	A. Buchan, Esq., Secretary, Edinburgh.
26	Rates of Chronometers on Trial for Purchase by the Board of Admiralty at the Royal Observatory, Greenwich.	G. B. Airy, Esq., F. R. S., Director of the Royal Observatory, Greenwich.
	Ueber den Werth der Aberrations-Constante nach den Beobachtungen von Molyneux. Auwers.	Dr. A. Auwers, Berlin.
	Report of the Committee of the Meteorological Office on the Meteorology of the North Atlantic between the Parallels of 4° and 5° North Latitude. Capt. Toynbee.	R. H. Scott, Director of the Meteorological Office, London.
	Zeitschrift für Meteorologie. No. 23. 1869	Dr. C. Jelinek, Vienna.
	Le aurore polari. 1869. Denza	P. A. Denza, Moncalieri, Italy.
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	Bulletin de la société de géographie. October, 1869	C. Maunoir, Secretary, Paris.
	Sopra gli aeroliti caduti il giorno. February, 1868. Piemonte	P. A. Denza, Director of the Observatory at Moncalieri.
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	Bulletino meteorologico Reale Osservatorio di Palermo. Vol. V, Nos. 4 and 5.	G. Cacciatore, Director of the Observatory of Palermo.
	Rendiconti Istituto Lombardo di Scienza e Lettera. Serie II, Vol. I, fasc. 1 to 20; serie II, Vol. II, fasc. 1 to 16.	The President of the Royal Institute of Science and Letters, Milan.
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	Sulle variazioni periodico barometro nel clima di Milano. Schiaparelli e Celonia.	Prof. G. V. Schiaparelli, Milan.
	Effemeridi astronomiche di Milano per l'anno 1868–1869	The Director of the Royal Observatory of Brera, Milan.
	Report of the Meteorological Reporter to the Government of Bengal. 1868–'69.	The Meteorological Reporter to the Government of Bengal, Calcutta.
31	Astronomical, Magnetic, and Meteorological Observations made at the Royal Observatory, Greenwich. 1867.	G. B. Airy, Esq., F. R. S., Director of the Greenwich Observatory.
	Greenwich Astronomical Results. 1867	The same.
	Greenwich Magnetic and Meteorological Results. 1867	The same.
	Almanaque nautico para 1871. Observatorio de marina de la ciudad de San Fernando. Cadiz, 1869.	Don Cecilio Pujazon, Director of the Observatory at San Fernando.
	Annual Report on Meteorological Observations registered in the Punjab. A. Neil, M. R. C. S. L. 1867.	A. Neil, Esq., M. R. C. S. L., Reporter for the Punjab.

APPENDIX I.

REPORTS ON OBSERVATIONS

OF

THE TOTAL SOLAR ECLIPSE

OF

DECEMBER 22, 1870.

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LIST OF ILLUSTRATIONS.

PLATES.

LIST OF ERRATA.

NOTE.—The sign — placed before the number of a line indicates that it is to be counted from the bottom of the page.

Page 10, line 18. For adjustmenr read adjustment.
Page 48, line — 13. For 8.87 inches focus read 8.78 inches focus.
Page 55, line 5. For $p \quad = m \,.\, \frac{b+1}{m+b}$ read $p_m = m \,.\, \frac{b+1}{m+b}$
Page 84, line 6. For that of the moon to be 3963 miles read that of the moon to be 2153 miles.
Page 119, line — 1. For atitude read latitude.
Page 131, line — 18. For Mr. Rosenbusch read Mr. Edward Rosenbusch.

REPORT

OF

REAR-ADMIRAL B. F. SANDS, U. S. N.

REPORT OF REAR-ADMIRAL B. F. SANDS, U. S. N

UNITED STATES NAVAL OBSERVATORY,
Washington, July 15, 1871.

SIR: The officers of the Observatory, detailed by the Navy Department for observations of the late eclipse of the sun of the 22d December, 1870, having returned from that duty, I have the honor to forward herewith their reports.

After the successful results of the observations of the eclipse of August 7, 1869, by the officers of this Observatory, it was desirable that their experience should be taken advantage of for the further elucidation of the subjects involved in such phenomena; and the eclipse to occur in Europe on the 22d December, 1870, was discussed with a view to their taking part in the observations on that occasion, as one of the legitimate and appropriate duties of the Naval Observatory.

The Navy Department was addressed by me upon the subject, which resulted in the detail for that duty of Professors Simon Newcomb, Asaph Hall, William Harkness, and J. R. Eastman, of the United States Navy, attached to this Observatory, all of whom had contributed largely to science by their reports of the August eclipse.

It was, at first, intended to have the parties accompanied by a skilled photographer and other observers not attached to the Observatory; but having no special appropriation for the purpose, and our contingent fund being too limited to meet the expense that would be incurred, we had to restrict ourselves to the officers of this institution already experienced in such observations.

The last three of the officers mentioned above were directed to proceed to Sicily, to occupy some convenient points near Syracuse, each in his distinct and separate duties, with independent instructions for each—Professor Hall for observations upon the corona, Professor Harkness for spectral analysis, and Professor Eastman with polarizing apparatus and meteorological instruments; with directions to avail themselves of any assistance they might be able to obtain in the localities selected.

Professor Newcomb, having been previously detailed for other special duties in Europe, was instructed also to occupy some point near Gibraltar for general observation of the eclipse and physical constitution of the corona, and other observations to determine the path of the center of the shadow over the earth, with the object of obtaining data for the correction of the lunar tables, by comparing these results with those previously calculated from them.

While in England, *en route* for his station, Professor Newcomb, through the courtesy of the Astronomer Royal, Mr. Airy, and of Sir James Anderson, the president of the Anglo-Mediterranean Telegraph Company, made very elaborate arrangements to correct the stations of our observers by cable for difference of time with the Greenwich Observatory. This was accomplished between Sicily and Malta and Gibraltar, and failed with Greenwich only in consequence of a break in the cable between that place and Lisbon, which could not be repaired during Professor Newcomb's sojourn at Gibraltar.

By special invitation, Professor Newcomb accompanied the English party to Gibraltar on board H. B. M. Steamer Urgent, arriving in time to make the necessary preparations for telegraphic difference of time with Greenwich, Gibraltar, and Malta.

Professors Hall, Harkness, and Eastman arrived at Syracuse with their instruments in ample time to make every preparation, and selected their several positions near that city. Mr. Hall and Mr. Harkness, in the mean time, at Malta and Syracuse respectively, in connection with Mr. Newcomb at Gibraltar, determined by telegraphic cable the difference of time between those places. Cloudy weather with high winds made the Sicily observations less successful than we had hoped, but they tend to corroborate those of our parties in America on the 7th August, 1869, and form interesting addenda to those of that year on this continent.

In accordance with the course I had adopted in the administration of the duties of Superintendent, to give to each of the officers the full credit of his work, and that they may share the responsibility attendant upon their observations, I have the pleasure to forward to the Department their very interesting reports

entire, and over their several signatures. Constituting as they do very valuable contributions to the science of astronomy, evincing great ability and personal interest in the subject, most creditable to the observers and highly honorable to the institution of which they are prominent members, it would be unjust to the officers, and detract from the merits of the reports, to abridge or condense them.

The letter of Captain Tupman, R. M. A., who volunteered to assist Professor Harkness, containing his notes and other remarks, is also given entire at the end of Professor Harkness's report. The reports have been delayed to this date by the severe illness of Mr. Harkness in Europe, and the detention of Mr. Newcomb by other duties on which he was engaged, and which were protracted by the war in Europe.

It is most gratifying to record here the very great courtesy and kindness extended to our officers by the savants of Great Britain and the continent—setting aside national jealousies and forming one great brotherhood of science. To each of those learned and distinguished gentlemen I have had the pleasure to address a letter expressing my appreciation of the attentions thus shown. They are mentioned by name in the several reports of our officers.

Through the courtesy of the Secretary of State, Hon. Hamilton Fish, we secured the ready acquiescence of the foreign legations of England and Italy for the passage of the instruments used through the several custom-houses.

I have the honor to be, very respectfully, your obedient servant,

B. F. SANDS,
Rear-Admiral, Superintendent.

Hon. G. M. Robeson,
Secretary of the Navy, Washington City.

REPORT

OF

PROFESSOR SIMON NEWCOMB, U. S. N.

REPORT OF PROFESSOR NEWCOMB, U. S. N.

BERLIN, *March* 21, 1871.

COMMODORE: I have the honor to present the following report of my observations of the total solar eclipse of December 22, last, made in compliance with the orders of the Honorable Secretary of the Navy. As my proceedings were necessarily determined by the character of the observations to be made, I ask leave to begin by calling to your mind the plan of work marked out for me.

The great number of spectroscopic parties, who were expected to take part in the observations, made it desirable to choose some less occupied, though, it might be, less brilliant field. It was therefore determined that I should simply scrutinize the physical constitution of the corona, as it appeared through the telescope employed in the observations of partial phase. The question kept more particularly in mind was one respecting which the testimony of previous observers is very discordant, namely, whether there is any appearance of structure in the formation of the corona, or whether its different parts seem to run into each other by insensible gradations; in other words, whether the corona is composed of bright points, filaments, and rays, or whether its light is soft and milky. In the former case, it would be proved that the corona could not result solely from an elastic atmosphere surrounding the sun, while in the latter this question might still be an open one.

Another object was to determine, with as much accuracy as possible, the path of the center of the shadow over the surface of the earth, and the time of its passing a given point, in order to compare these results with those previously calculated from the lunar tables, and thus obtain data for the correction of the latter. The relative positions of the sun and moon can indeed be determined by observations of an eclipse at points far removed from the central line. But the observations for this purpose, as usually made, are subject to various unavoidable sources of error, which it is not necessary to enumerate. On the other hand, when the observer is on or near the line of central eclipse, observations for this purpose can be made with great precision, and my arrangements were planned with the view of putting in practice a very accurate method of observation, which, if not new, has fallen into almost complete desuetude. This method is founded on the geometrical theorem that the line joining the cusps of the partially eclipsed sun is at right angles to the line joining the centers of the sun and moon, so that the angle of position of the latter line can be immediately inferred from that of the former. The advantages of the method arise from the great extent to which the errors of the ordinary class of observations may thus be diminished. During the last century, observations of solar eclipses have been generally confined to determinations of the times of contact of the limb of the moon with that of the sun or with spots on its surface. The latter furnish no data for fixing the position of the moon, because the positions of the spots are never accurately known. The former generally consist of observations of external contact, or moments of the beginning and end of the eclipse. But if we consider the question with mathematical accuracy, we must admit that an actual external contact of the limb of the moon with that of the sun cannot be observed, because the former cannot be seen until it has impinged on the latter to an appreciable extent. If the magnitude of this extent were constant, it could be easily determined and allowed for. But, unfortunately, it is a very variable and uncertain element, depending on the observer, the telescope, and the nature of the moon's surface, smooth or rough, at the point of contact. Observations of last contact are indeed less in error from this cause than those of first contact, but they still exhibit very large discrepancies.

Observations of internal contact in annular and total eclipses are free from the source of error here considered. But they are still subject to the uncertainties arising from the inequalities of the moon's surface; and when made, as is usually the case, at points near the line of central eclipse, they afford no data whatever for determining the error of the moon's latitude, or the path of the line along the earth's surface. To be useful for this purpose, observations of contact must be made at points near the limits of annular or total phase. We have occasional observations so made at public or private observatories, which chanced to lie in the proper position relatively to the moon's shadow; but I know of only two total eclipses in which systematic arrangements were made to determine by observation the path of the moon's shadow along the sur-

face of the earth. These were the eclipses of 1715, in which the moon's shadow passed over England, and that of 1869, in which it passed over the United States. The method adopted in the latter was substantially identical with that employed by Halley in the former, and consisted in securing observations of the simple duration of total phase by intelligent inhabitants at various points near the limits of totality. Though this method is the best yet used, it is not always satisfactory or practicable. The limits of the shadow are themselves rendered uncertain by the irregularities of the moon's surface, besides which we require an accurate knowledge of the positions of all the observers before the observations can be utilized. Of course the observations can be made only in those rare cases when the shadow passes over a well-populated country. But knowing from observation the angle of position of the line joining the center of the sun and moon at any moment, we can thence infer the direction of the center of the shadow at that moment. By making a number of determinations of this angle, as seen from any point in or near the shadow while the latter is passing, the path of its center can thence be inferred with great accuracy. It is true that the error of any isolated measure arising from inequalities of the moon's surface will be of the same magnitude with that of an observed contact. But all the measures being made on different parts of the moon's contour, as the solar crescent seems to move around the moon, the errors arising from irregularity of contour will be almost entirely eliminated from the mean result. My trial of this method convinces me that the observations of the sharp cusps can be made with even greater precision than I had anticipated.

The direct determination of the line joining the cusps is, however, scarcely practicable, owing to the breadth of the solar disk, which prevents the observer from setting a wire simultaneously on the two cusps, unless the telescope be moved by clockwork and a low power be used. We have therefore to substitute differences of right ascension of the cusps, which may be obtained by observing transits of the two cusps over the wires of an equatorially mounted telescope. This was the mode of observation actually adopted, the telescope employed being the comet-seeker of the Observatory. The instrumental arrangements will be more fully described in connection with my observations, which I shall preface with an account of the preliminary operations made to secure the success of the proposed plan.

I sailed from New York, in compliance with my orders, and reached London on November 1st. My instructions left me at liberty to select that point along the line of totality the longitude of which could best be determined by the electric telegraph, an accurate longitude being required before my observations could be used. Immediately on my arrival in London I therefore sought an interview with the Astronomer Royal, to confer with him respecting the choice of a station, and to request his co-operation in the work of determining the longitude of such station as might be selected. It was soon found that Gibraltar was in this respect the most favorable point along the path of totality, as it was in direct telegraphic communication with England through the Falmouth, Gibraltar and Malta cable. The Astronomer Royal entered into my plans in the most obliging manner, agreeing to send time-signals from the Royal Observatory to my station whenever the two points could be put in telegraphic communication, and using his influence to secure such communication. To attain this end, he introduced and recommended me to the engineer-in-chief of the government telegraphs, R. S. Culley, Esq. Mr. Culley most cordially tendered us the use of any of the telegraph lines that might be under his control. It only remained to ask for the use of the cable, and this I did in conjunction with Mr. G. W. Dean of the Coast Survey, who had been instructed by Professor Peirce to co-operate with our parties whenever the interests of science could be so advanced, and whose experience in telegraphing longitude-signals through the ocean-cables made his counsel of great value. We arranged for an interview with Sir James Anderson, managing director of the cable, on the following Monday. At this interview, the distinguished director expressed the great pleasure it would give him to do everything in his power to insure the success of our observations, and offered to place the cable at our disposal at such times as we might require it for the transmission of signals. As the cable was least loaded with business on Sunday afternoons and Monday mornings, it was agreed to select these times for transmission if weather permitted of our correcting our chronometers by astronomical observations.

It only remained to frame a plan of operations for the transmission of signals, which I did, after consultation with the Astronomer Royal and Mr. Dean. The unfortunate failure of the scheme through a cause beyond human foresight and control deprives both my plan and my further proceedings under it of nearly all their interest. However, I inclose a copy of the plan as evidence of the care with which the operations were arranged. To guard as far as possible against all possibility of failure, Sir James Anderson advised me to visit the telegraph office at Porthcurno, the terminus of the cable, and assure myself that all the arrangements for transmitting signals were properly made and understood by the operators. I started on this journey

December 2d, and on the very same day I was advised that a fault had occurred in the cable between Lisbon and Gibraltar. As it was expected that the fault would be speedily found and repaired, I made no change in my plan of operations, and completed the proposed journey. The hope in question was, however, not realized, so that no time-signals could be transmitted at all. The failure of the cable at this moment was most unfortunate for us, because, had I not fully expected to obtain a telegraphic longitude, I should have tried to organize a chronometric expedition for the same purpose, and, I believe, would have succeeded. But it was now too late to do so; indeed, I did not return to London at all after my visit to Penzance.

During my stay in London a joint committee of the Royal and Royal Astronomical Societies was engaged in organizing an expedition for the observation of the eclipse. Having secured from their government the grant of a ship, they invited me to accompany them to Gibraltar. I accepted this flattering invitation, and therefore proceeded from Porthcurno direct to Portsmouth, the port of departure. We sailed on Tuesday, December 6th, in H. B. M. Ship Urgent, on which I was, during a week, the guest of the English expedition. We reached Gibraltar, after a rough passage, on the morning of December 14th.

I first called on the American consul, H. J. Sprague, Esq., and made known to him the object of my visit. He informed me that my instruments, which had been forwarded by the consul at Liverpool, had arrived in safety. I then called on Mr. De Sauty, superintendent of the Gibraltar office of the telegraph company, and learned that Professor Hall was awaiting me at Malta in order to exchange time-signals. I arranged for the exchange on the two following days.

The business next in order was to make the object of my visit known to the authorities. Accordingly, on Friday, Mr. Sprague presented me to His Excellency Sir W. F. Williams, of Kars, the governor of the fortress, who most obligingly tendered me every facility in his power for making my observations from any station I might select within his jurisdiction. The selection of a station was, however, no easy matter. None of the authorities I consulted advised a point within the town, for the reason that during an east wind the latter is always covered with fog, though the sky may be clear both to the north and the south. A station far enough north to avoid this evil would be on Spanish soil and would be subject to several inconveniences, one of which would be the impossibility of any communication with the telegraph office or the town at night. A station to the south was objectionable because farther removed from the line of central eclipse, which passed some twenty miles north of Gibraltar. As this seemed to be the least of the evils, I selected a point known as Buena Vista, about half-way between the town and Europa Point. Its position relatively to some other points in the fortress was as follows, the distances being given in round hundreds of feet, as measured on a large map:*

8,800 feet south and 1,400 feet east of telegraph office.
6,900 feet south and 800 feet east of American consul's house, Edward's Road.
5,600 feet south and 1,100 feet west of Signal Tower.
2,700 feet south and 2,000 feet east of base of new mole.

According to the Admiralty Chart of 1864, the position of the flag-staff near the latter point is latitude $36° 7' 10''$; longitude $0^h 21^m 25^s.1$ W.† This would make the position of my station

Latitude, $36° 6' 43''$ N.
Longitude, $0^h 21^m 23^s.4$ W.

The latitude derived from my sextant observations is

$$36° 6' 51'',$$

with a probable error of four or five seconds. The difference of eight seconds is quite unimportant in the case of the eclipse observations.

Having signified my choice of a station to the governor, his excellency immediately directed that I should be supplied with anything in the shape of military stores I might require. I thus received everything necessary for the protection of my instruments, including tents and a guard.

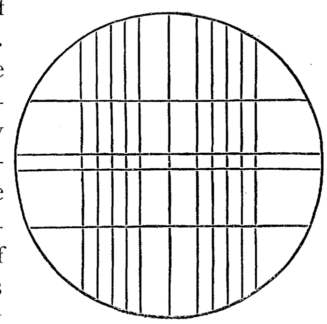
The instruments were conveyed to the station on Saturday, and the work of getting them into position was commenced on Monday. They consisted of the observatory comet-seeker, which was fitted up for the observation of the eclipse itself; a small portable transit, by Würdemann, of about two inches aperture,

*There is probably an error of about 5° in azimuth in these measures, the direction of the supposed meridian being really N. 5° W. and S. 5° E.

†The chart of July 27, 1869, gives a longitude 2^s less.

made for the Northwestern boundary survey, and loaned to the expedition by the Chief of Engineers of the Army. For the determination of latitude and time I had also a Gambey sextant with artificial horizon.

The comet-seeker is an equatorially mounted telescope, of thirty-two inches focus and four inches aperture. When turned on the sun the aperture has to be reduced to two inches or less, owing to the intensity of the heat concentrated at the eye-end when the full aperture is used. Its small size is partly compensated for by its fine definition. A power of forty was selected for the observation of the eclipse. The eye-piece was furnished with a diaphragm of eleven vertical and four horizontal wires, arranged as in the accompanying diagram, by Mr. Gardner, instrument-maker at the United States Naval Observatory. The intervals between the closer vertical wires are approximately each $2\frac{1}{2}'$ of arc, or 10^s of time, while the wider intervals on each side of the center wire are $5'$ of arc. The extreme distance between the outside wires is therefore $30'$, or a little less than the Sun's diameter. The eye-piece could be turned into any required position, so that the term vertical, as applied to the eleven wires, is only a relative one. A notch was cut into the eye-piece to indicate a fixed position of the latter in which the central wire coincided accurately with the meridian of the instrument. There was no other means of fixing or determining the angle of position of the wires. The direction of the polar axis of the instrument admitted of no adjustmenr for latitude; but Gibraltar being less than three degrees south of Washington, it was easy to elevate one side of the base of the instrument enough to secure the adjustment in question. Both axes of the instrument have divided circles, and each circle is read by two opposite verniers, which give single minutes in declination and spaces of four time-seconds in R. A.



The transit-instrument was mounted on a cast-iron stand. For the adjustment of level and azimuth one Y was movable horizontally and the other vertically. Both movements were effected by micrometer-screws with divided heads, a feature very convenient for the determination of the instrumental constants. The reticule consisted of seven vertical and two horizontal wires. The instrument was supplied with two spirit-levels for leveling the axis.

As it was not easy to get solid stone piers for the instrument, I adopted the plan of using the outside packing-cases, well packed with sand, for the supports. For the transit the box was packed slightly more than full, so that when the top was nailed down its upper surface was rendered slightly convex by the pressure of the sand below. The stability of the instrument, though ample to determine the local time for observation of the eclipse, would not have sufficed for any accurate astronomical determination.*

The comet-seeker was mounted under a tent in such a way that by slightly changing the position of the latter through its supporting cords the instrument could be either entirely covered in, or could be left far enough out to command the southern half of the heavens. On the day preceding the eclipse I got it adjusted to the diurnal motion of the earth as nearly as seemed practicable with the rough means at my disposal. The reticule was adjusted on a distant object, so that the middle right ascension wire was as nearly as possible in the plane of motion of the instrument in declination; after the adjustment was made, however, the top of the wire seemed to incline to the east by the smallest appreciable amount. In the day and evening observations were made to determine such of the instrumental errors as it was necessary to know. During this entire day the sky was cloudless, and everything gave promise of a fine day for the eclipse.

The morning of the 22d dawned with equal promise. At 8 o'clock only a few light and fleecy clouds were to be seen in the sky. A little before nine I observed the transit of β Ursæ Minoris with the transit-instrument. But before I could get another observation clouds began to cover the sky, and an hour before the time of commencement of the eclipse the southern heavens were covered with clouds, mist, and fog, which came in from the Atlantic. There was still much blue sky to be seen in the north, so that I thought I should have done better to observe from the town. In another half hour this had also disappeared, the instruments had to be covered to protect them from the rain, and the prospect seemed hopeless. But a short time before the commencement, fugitive glimpses of the sun began to be obtained through the clouds. I took my seat at the telescope and got a very good view of first contact at $22^h\ 52^m\ 35^s$, chronometer time.

* To each error of one second in the determination of time would correspond an error of $0''.4$ in the longitude of the moon deduced from the observation. The instrument was steady enough to give the local time certainly within a fourth of a second, so that the deduced longitude of the moon could not be $0''.1$ in error from this cause.

This was the moment at which I began to see the limb of the sun indented by the rough edge of the moon. The actual first contact must have occurred an appreciable time, probably two or three seconds, sooner. I then turned the eye-piece so that the R. A. wires of the eye-piece were at right angles to the chord of the eclipsed portion of the sun, and noted the moments at which the length of the chord was measured by certain wire intervals. These observations were rendered difficult and uncertain by the flying clouds, which would at one moment shut the sun off entirely and at another suddenly let him shine with full brilliancy. However, I give the observations *in extenso* in the accompanying papers.

Again the sun was completely hidden, and again the instruments had to be covered from the drizzling rain. Half an hour before the total phase, when I wanted to measure the cusps, the clouds again partially cleared away, so that I was able to obtain several sets of transits of the cusps over the R. A. wires of the comet-seeker between and through the rapidly driving clouds. For this purpose, the eye-piece was restored to its vertical position by the notch made for that purpose.

During the five minutes preceding the total phase the prospect of seeing the latter looked as dark as ever. Once more, however, the clouds broke up at the critical moment. A minute or two before the disappearance of sunlight, what little was left of the sun appeared through the clouds, and I again turned the eye-piece so as to measure with the R. A. wires the length of the vanishing crescent, having first removed the cap from the telescope so as to see with the full aperture of four inches. But in the hurry and confusion of the moment I did not get a measure. I noticed, however, that when the crescent was reduced to about 90°, the ends began to break off and disappear. This process went on with increasing rapidity until $0^h\ 18^m\ 35^s$ chronometer, when all that remained of the crescent was broken up throughout its entire length. The fragments thus formed disappeared one by one, and the last one vanished at $0^h\ 18^m\ 37^s$. I judge that the true time of second contact should be considered about the mean of these two moments, or $0^h\ 18^m\ 36^s$.

As soon as I had recorded the time of disappearance I put my eye again to the telescope. Instead of the gorgeous spectacle I witnessed in 1869, I saw only the most insignificant corona, although the full aperture of the telescope was used. Supposing that this was of course due to the clouds, I kept my eye at the telescope in hopes of their disappearance, still, however, scrutinizing the phenomena most carefully. I could not see the slightest trace of bright or dark points, rays, or filaments, the light everywhere seeming as soft and diffused as the zodiacal light. There were, indeed, as in former eclipses, great differences between the extent and brilliancy of the corona at different points, but all the parts seemed to shade into each other by insensible gradations. The protuberances on the eastern limb of the sun were numerous and brilliant, presenting the many fantastic forms which photography has rendered so familiar. But they presented no appearance of structure, as did the great protuberance in the eclipse of 1869. The light and color of all were sensibly uniform throughout their entire extent, and their outline was sharply defined. So far as I saw they were all of the red color so frequently described, a much brighter red than I saw at Des Moines. I cannot speak for minute differences of color or brilliancy, because I had not intended to make the protuberances a special object of scrutiny.

I waited in vain through the few moments of total eclipse for the corona to be seen more distinctly, and observed the reappearance of sunlight under the impression that the clouds had prevented me from seeing more than a very little of the corona. But, after finishing my observations, Mr. Sprague and Mrs. Newcomb, both of whom were outside of my tent, agreed in testifying that the sky in the direction of the sun seemed quite free from clouds during the entire total phase, and that two stars were distinctly visible in the neighborhood of the sun. It is a little singular that while the two parties agree in describing the positions of the stars, their descriptions are not reconcilable with the positions of Venus or Saturn, the only bright planets in the neighborhood of the sun. I bring this forward as tending to excite suspicion that the corona is subject to very great changes of brilliancy, a suspicion, however, which can be removed or confirmed only by the observations of others. My own testimony is simply this: the corona of 1869, through a haze which rendered all but the brightest stars invisible to the naked eye, seemed to me many times more brilliant than that of 1870, seen through an atmosphere which permitted at least the brighter planets to be seen.

The first ray of returning sunlight appeared at $0^h\ 20^m\ 27^s$, chronometer. It appeared at several points of the moon's limb in such rapid succession that I could not designate an exact moment in which the crescent seemed broken up as it did 2^s before the disappearance of sunlight. During the succeeding minute I succeeded in getting three measures of the length of the crescent, but they were by no means satisfactory.

I then set the eye-piece into position for observing transits, and during the half hour following observed nine sets of transits very satisfactorily indeed. Clouds as thick as ever then intervened, but cleared away

again in time to allow of a very satisfactory set of measures of chord during the few minutes preceding the last contact, and of the observation of last contact.

The failure of the longitude determination prevents me from giving a definitive reduction of my observations. I have no knowledge of the manner in which the Admiralty longitude already quoted was determined, or whether it is sufficiently accurate for astronomical purposes. Assuming, however, that this longitude is correct, the computed and observed times of the phases, and the resulting errors of the difference of tabular longitudes of the sun and moon, will be as follows:

Phase.	Greenwich times.			Local times.			Obs. times.	Δt	$\Delta \lambda$
	h.	m.	s.	h.	m.	s.	s.	s.	$''$
First contact . .	22	51	38.6	22	30	15.2	13.4	− 1.8	+ 0.7
Second contact .	0	17	40.8	23	56	17.4	14.4	− 3.0	+ 1.1
Third contact . .	0	19	29.8	23	58	6.4	5.4	− 1.0	+ 0.4
Fourth contact .	1	46	47.6	1	25	24.2	18.4	− 5.8	+ 2.2

This result would indicate a correction of $+1''.1$ to the longitude of the moon derived from Peirce's tables, supposing Hansen's tables of the sun to be correct. Comparing Hansen's lunar with Le Verrier's solar tables, the relative correction will be $-6''.4$, an amount which I can scarcely believe the error of Hansen's tables have reached.

In the accompanying papers I present the observations *in extenso*, with such preliminary reductions as I have been able to make. They are as follows:

A. The observed times of contact and the measures of chords near these times, which may serve to correct the latter.

B. The observed transits of the cusps over the wires of the comet-seeker, made to determine the difference of their right ascensions. To reduce these observations completely it is necessary to know the angle which the line of motion of the instrument at any point makes with the meridian. This requires a knowledge of four constants, the errors of collimation of the two axes of the instrument, and the hour angle and polar distance of the point in the heavens toward which the polar axis of the instrument is directed. The observations for this purpose are given in C.

D. The sextant observations for latitude of station, with a summary of the resulting values of the latitude. The error of eccentricity of the sextant being uncertain, a much greater weight has been given to the results of those dates when a north and south object were both observed.

E. Sextant observations for correction of chronometer, made before the mounting of the transit, completely reduced. The result of December 16th is discordant to a degree I cannot account for; it is difficult to suppose such a change to have actually taken place in the error of the chronometer.

F. Observations for index correction of sextant.

G. Transits observed with the transit-instrument, completely reduced.

H. The observations for determining the constants pertaining to the transit-instrument.

I. Exchange of signals with Professor Hall at Malta, through the Falmouth, Gibraltar and Malta cable.

A determination of the inclination of the separate wires of the comet-seeker is still wanting for the complete reduction of the transits of cusps, and the definitive determination of the path of the center of the shadow. This cannot be done till my return, when I hope to present you with the definitive results of my observations.

It has been my agreeable duty, both in this and in my preceding reports, to inform you of the numerous facilities and courtesies extended to me by the authorities of Great Britain. I have only to add, in general terms, that nothing could exceed the cordial and friendly spirit with which the objects of our expedition were everywhere received and promoted by all the authorities and people of that country with whom it was my good fortune to come into contact. It is also just that I should acknowledge the indebtedness of the expedition to Mr. Horatio J. Sprague, United States consul at Gibraltar, for his many exertions to secure its success.

Very respectfully, your obedient servant,

SIMON NEWCOMB,
Professor of Mathematics, U. S. N.

Commodore B. F. Sands, U. S. N.,
Superintendent U. S. Naval Observatory, Washington.

A.

Observed chronometer times of contact, and distances of cusps near the times of contact.

Chronometer times.			
h.	m.	s.	
22	52	35	First contact.
22	53	55.0	Chord reaches from wires IV½ to VI.
22	54	47½	" " " " IV to VI.
22	55	31.0	" " " " III½ to VI.
22	57	50:	" " " " IV½ to VII.
22	58	58:	" " " " IV to VII.
0	18	35	The small remaining crescent broken up by the rough edge of the moon throughout its entire length.
0	18	37	The last point of sunlight vanishes.
0	20	27	Light reappears.
0	20	55	Crescent extends from wires V to XI.
0	21	11	" " " " III to XI.
0	21	29	" " " " I½ to XI.
1	40	50	Chord reaches from wires V to VIII.
1	42	16	" " " " IV½ to VII.
1	43	25	" " " " V to VII.
1	44	35½	" " " " III½ to VI.
1	45	17	" " " " IV to VI.
1	46	8	" " " " IV½ to VI.
1	46	34½	" " " " V to VI.
1	47	6½	" " " " III½ to V.
1	47	27	" " " " IV to V.
1	47	40	Last contact.

NOTE.—The measures of chord following first contact were rendered difficult and uncertain by the continual passage of flying clouds.

B.

Transits of the sun's cusps over the R. A. wires of the comet-seeker to determine the difference of their right ascension, and thence their angle of position and the angle of position of the line joining the centers of the sun and moon.

(Telescope east of axis.)

Cusp.	I.			II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.
	h.	m.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
S.	23	50	59.3	. .	. .	. .	42.9	. .	28.5	. .	. .	2.5	. .
N.	23	51	20.6:	. .	. .	55.5	. .	. .	52.5	. .	14.5	26.0	36.5
S.	23	54	30.5	41.0	. .	2.5	. .	. .	. .	11.0	. .	32.5	. .
N.	23	54	52.3	. .	14.0	27.0	. .	. .	23.8	. .	45.3	56.3	7.5
S.	23	58	17.5	28.3	. .	50.0	. .	23.8	48.0	59.0	. .	21.0	. .
N.	23	58	40.5	. .	3.3	. .	. .	. .	12.6	. .	34.5	45.5	56.5
S.	0	1	31.0	41.7	. .	. .	14.5	38.0	0.5	11.3	. .	. .	44.5
N.	0	1	55.0	. .	. .	29.2	. .	. .	25.5	. .	. .	59.0	10.0
S.	0	4	36.5	47.5	. .	9.2	. .	43.7	6.5	17.5	. .	. .	51.0
N.	0	5	1.5	. .	23.8	. .	. .	. .	32.8	. .	. .	6.0	17.2
S.	0	7	43.5	54.4	5.0	. .	. .	50.3	13.3	24.0	. .	. .	. .
N.	0	8	. .	20.8	31.8	. .	. .	. .	41.3	. .	3.0	14.5	26.0
S.	0	10	46.8	57.5	8.5	. .	31.0	. .	17.5:	28.5	39.5	. .	2.3
N.	0	11	15.0	. .	38.0	50.0	0.8	. .	48.5	. .	11.5	23.0	35.0

The eye-piece, with the diaphragm, was now turned back 90°, to observe the length of the small remaining crescent of the sun during the minute preceding the total phase.

After the total phase, it was returned (as was supposed) accurately to its original position, and the transits of the cusps were again observed, as follows:

At

$$0^{h}\ 23^{m}\ 11^{s}$$

the line joining the cusps was parallel to the R. A. wires.

Cusp.	I.			II.	III.	IV.	V.	VI.	VII.	VIII.	IX.	X.	XI.
	h.	m.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
S.	0	25	49.0	. .	. .	22.0	. .	. .	20.2	. .	42.0	. .	4.5
N.	0	27	. .	. .	. .	. .	. .	. .	30.5	. .	52.7	. .	15.5
S.	0	28	49.7	. .	11.5	. .	33.8	55.7	19.5	. .	41.3	. .	4.0
N.	0	29	0.2	. .	22.8	. .	45.7	9.0	32.4	. .	54.2	. .	16.8
S.	0	31	42.1	. .	3.7	. .	26.0	49.4	11.8	. .	33.6	. .	56.0
N.	0	31	54.3	. .	16.6	. .	39.5	2.5	25.5	. .	47.3	. .	9.5
S.	0	34	31.4	. .	52.9	. .	15.3	38.3	1.0	. .	23.3	. .	45.6
N.	0	34	44.2	. .	6.5	. .	29.2	52.4	15.3	. .	36.8	. .	59.5
S.	0	37	24.7	. .	46.8	. .	8.6	31.5	54.5	. .	. .	27.6	. .
N.	0	37	37.7	. .	0.5	. .	23.0	46.3	9.2	. .	. .	41.9	. .
S.	0	40	8.7	. .	30.3	. .	52.5	15.3	38.1	. .	0.0	. .	22.0
N.	0	40	22.0	. .	44.0	. .	6.6	29.8	52.1	. .	14.0	. .	36.2
S.	0	42	50.5	. .	12.4	. .	34.5	57.5	20.2	. .	41.9	. .	4.5
N.	0	43	4.2	. .	26.4	. .	49.1	12.0	34.7	. .	56.4	. .	18.5
S.	0	45	51.5	. .	12.9	. .	34.9	57.8	20.9	. .	42.0	. .	5.0
N.	0	46	4.6	. .	27.2	. .	49.5	12.5	35.4	. .	57.0	. .	19.4
S.	0	48	41.2	. .	2.8	. .	25.0	47.5	10.5	. .	32.0	. .	54.5
N.	0	48	54.5	. .	16.8	. .	39.0	2.0	25.0	. .	46.2	. .	8.5

It was now found that after the total phase the eye-piece was not returned accurately to its original position. While, before the total phase, the middle R. A. wire was very nearly parallel to the line of motion of the telescope in N. P. D., it was now found, by observation on a distant terrestrial mark, that the top of the middle wire deviated to the east by an amount which throughout the breadth of the field (about 1°) amounted to $\frac{1}{9}$ the distance of the closer wires, or about 17″, making the change of inclination about 0° 16′. The probable error of this estimate is about ⅙ its amount.

C.

Readings of circles when telescope is pointed on terrestrial marks in reversed positions of the instrument, made to determine the collimation errors of the telescope and the declination axis, and the index error of the declination-circle.

Mark.	Readings of declination—Verniers.		Readings of R. A.—Verniers.		Mean Vernier.	
	I.	II.	I.	II.	Dec.	R. A.
	° ′	° ′	h. m. s.	h. m. s.	° ′	h. m. s.
First mark	314 58	135 47	9 47 22	21 48 12	315 22	9 47 47
Tel. reversed . . .	224 30	45 24	21 47 44	9 47 24	224 57	21 47 34
Second mark . . .	308 0	128 56	10 17 2	22 18 0	308 28	10 17 31
Tel. reversed . . .	231 18	52 16	22 17 46	10 18 18	231 47	22 18 2
Third mark	8 22	189 15	18 25 18	6 25 42	8 48	18 25 30
Tel. reversed . . .	171 0	351 52	6 26 26	18 27 22	171 26	6 26 54

These readings give, for the index error e of the declination-circle,

First mark, $2e = -19'$
Second mark, $2e = -15'$
Third mark, $2e = -14'$
Mean, $e = -8'$

The following readings of the declination-circle, when the telescope was pointed on the center of the sun, were made to determine the error in the direction of the polar axis of the instrument:

Date.	Chronometer times.	Sun's hour-angle.	Readings of Verniers.		Telescope.	Resulting distance of pole of instrument from sun.	Pole of instrument beyond pole of the earth.
			I.	II.			
	h. m.	h. m.	° ′	° ′		° ′	′
December 21	22 24	− 1 57	336 15	157 4	E.	113 28	+ 2
	23 16	− 1 4	336 5:	156 57	E.	113 37	+ 11
December 22	1 0	+ 0 39	335 52	156 44	E.	113 50	+ 24
	1 5	+ 0 44	203 30	24 23	W.	113 49	+ 23
	3 2	+ 2 41	335 47	156 41	E.	113 54	+ 28

From these five observations it is concluded that the pole of the instrument was directed to a point 18′ below and 25′ east from the pole of the heavens.

Rigorously the preceding observations suffice for the complete determination of the angle which the line of motion of the instrument in declination makes with the meridian at any point. But, to have a check on the correctness of the results, several transits of pairs of stars, near in R. A. but more distant in declination, were observed over the middle wire of the telescope, the pointing of the latter in R. A. remaining unchanged

between the transits of each pair. These observations were made on the night preceding the eclipse, and are as follows:

	Chronometer. h.	m.	s.
Transit of β Ceti over middle wire	7	41	31
Transit of ε Piscium, telescope being moved in declination only	8	0	19.5
Difference of mean times of transit		18	48.5
Difference of sidereal times of transit		18	51.5
Difference of right ascensions of stars		19	8.4
Amount by which the southern star passes too late			16.9
Transit of γ Geminorum	10	9	18.5
Transit of Sirius	10	19	6.0
Difference of right ascensions		9	12.4
Southern star too late			36.6
Transit of α Andromedæ	10	27	42.5
Transit of γ Pegasi	10	32	14.0
Difference of right ascensions		4	52.3
Southern star too early			20.0
Transit of α Andromedæ	10	35	17
Transit of γ Pegasi	10	39	47
Southern star too early			21.5

D.

Observations with Sextant for Latitude.

DECEMBER 15, 1870.—Double altitudes of the sun's limbs observed at the telegraph office. Index correction of sextant, + 20″. Temperature 65°. Chronometer time of apparent noon, $0^h\ 17^m\ 36^s$.

Chronometer. h. m. s.	Limb.	Reading of sextant for double alt. ° ′ ″	Resulting mer. alt. of center. ° ′ ″	Result.	° ′ ″
0 22 30	L.	60 37 0	30 33 56	Mean observed meridian altitude	30 34 4
0 24 30	L.	60 35 40	30 33 57	☉'s south declination	23 17 24
0 25 30	U.	61 40 25	30 34 8	Altitude of equator	53 51 35
0 26 30	U.	61 39 30	30 34 12	Latitude	36 8 25
0 27 30	U.	61 38 50	30 34 19	Reduction to station	— 1 28
0 28 30	L.	60 31 30	30 33 50	Latitude of station	36 6 57

Double altitudes of Polaris. Index correction, + 30″. Temperature, 57°.

Chronometer. h. m. s.	Limb.	Reading of sextant for double alt. ° ′ ″	Resulting mer. alt. of center. ° ′ ″	Result.	
					h. m. s.
10 10 30	. .	74 35 30	. . .	Sid. time of mean of observations	3 31 0
10 14 30	. .	74 35 0	. . .	Hour angle	2 19 2
					° ′ ″
10 16 40	. .	74 33 10	. . .	Latitude	36 8 25
10 17 50	. .	74 32 30	. . .	Latitude of station	36 6 57
10 19 20	. .	74 31 30	. . .		

DECEMBER 20.—Double altitudes of sun observed at Buena Vista, (eclipse station.) Index correction, + 18″. Chronometer time of apparent noon, $0^h\ 20^m\ 12^s$. Refraction, 1′ 41″ for upper, and 1′ 44″ for lower limb.

Chronometer.	Limb.	Reading of sextant for double alt.	Resulting mer. alt. of center.	Result.	
h. m. s.		° ′ ″	° ′ ″		° ′ ″
0 24 53	U.	61 27 10	30 26 22	Mean observed meridian altitude..	30 26 21
0 26 25	U.	61 26 20	30 26 25	⊙'s south declination.	23 26 47
0 27 40	U.	61 25 15	30 26 22	Altitude of equator.	53 53 16
0 28 45	L.	60 19 0	30 26 19	Latitude of station	36 6 44
0 29 37	L.	60 18 10	30 26 16		
0 30 37	L.	60 17 10	30 26 22		

DECEMBER 26.—Double altitudes of *α* Ceti and Polaris observed at the house of the American consul. Index correction, + 43″. Correction chronometer for local mean time, $-22^m\ 23^s$.

α Ceti.

Chronometer.	Reading of sextant for double alt.	Resulting latitude.		
h. m. s.	° ′ ″	° ′ ″		° ′ ″
7 5 20	69 40 35	36 7 52	Mean latitude	36 7 41
7 8 25	69 30 15	36 7 55	Reduction to station	— 1 8
7 10 28	69 23 15	36 7 37	Latitude of station	36 6 33
7 12 8	69 16 45	36 7 35		
7 13 35	69 11 10	36 7 27		
Polaris.				
7 18 50	75 2 15:	36 7 43		° ′ ″
7 27 5	75 2 45	36 8 15	Mean lat., giving half wt. to first obs.	36 8 12
7 29 5	75 2 50		Reduction to station	— 1 8
7 30 40	75 2 30		Latitude of station	36 7 4
7 33 0	75 3 10			
7 36 50	75 3 0			

Summary of Results for Latitude of Station.

INDIVIDUAL RESULTS.

		°	′	″
December 15.	Sun,	36	6	57
December 15.	Polaris,	36	6	57
December 20.	Sun,	36	6	44
December 26.	*α* Ceti,	36	6	33
December 26.	Polaris,	36	7	4

MEAN BY DATES.

	°	′	″	
December 15.	36	6	57	with weight 3
December 20.			44	with weight 1
December 26.			49	with weight 4
Mean,	36	6	51 ± 4	

E.—*Sextant Observations for Correction of Chronometer.*

Date and station.	Object.	Limb.	Chronometer time.	Sextant reading for double alt.	Geocentric altitude of center.	Correction of chronom.	Remarks.
			h. m. s.	° ′ ″	° ′ ″	m. s.	
Dec. 14.9,	Sun . .	U.	23 10 43	57 37 20	28 30 54	− 22 6	Observations very uncertain,
Telegraph		U.	23 14 25	58 2 45	28 43 37	13	owing to bad definition of the
Office.		L.	23 15 25	57 5 20	28 47 29	5	sun's limb in the haze.
		L.	23 17 30	57 18 30	28 54 4	10	Mean correction, $-22^m\,8^s.5$.
Dec. 15,	Sun . .	U.	3 56 9	23 19 0	11 19 10	− 22 16.3	Temperature, 68°; index, +40″.
Telegraph		U.	3 57 29.5	22 54 15	11 6 45	16.3	Mean correction, $-22^m\,16^s.3$.
Office.		U.	3 58 30.5	22 35 50	10 57 27	16.3	
		U.	3 59 38	22 15 10	10 47 1	17.3	
		U.	4 0 34	21 57 35	10 38 9	16.3	
		U.	4 5 13	20 31 20	9 54 45	18.8	
		L.	4 10 2	17 54 10	9 8 3	13.0	
	α Lyræ .	.	6 19 30	63 45 0	31 51 14	− 22 18.0	Temperature, 60°; index, +30″.
			6 24 10	62 3 20	31 0 22	14.8	Mean correction, $-22^m\,16^s.1$.
			6 26 24	61 15 55	30 36 36	16.1	
			6 29 15	60 14 50	30 6 2	15.6	
	Jupiter .	.	9 54 37	117 7 30	58 33 25	− 22 16.4	Temperature, 57°.
			9 58 54	118 46 45	59 23 4	16.1	Mean correction, $-22^m\,16^s.9$.
			10 0 25	119 21 15	59 40 18	19.4	
			10 1 45	119 53 10	59 56 16	15.6	
			10 2 56	120 19 45	60 9 35	16.8	
			10 4 4	120 46 15	60 22 48	17.0	
			10 5 12	121 12 10	60 35 50	17.2	
	α Androm.	.	10 29 54	85 34 50	42 46 38	− 22 16.0	Mean correction, $-22^m\,16^s.8$.
			10 31 51	84 48 30	42 28 28	17.6	
Dec. 16,	α Lyræ .	.	7 54 9.5	30 0 20	14 56 50	− 22 14.2	Temperature, 57°; index, +25″.
Telegraph			7 56 44	29 10 50	14 31 59	14.0	Mean correction, $-22^m\,14^s.6$.
Office.			7 59 50	28 11 35	14 2 14	14.4	
			8 1 39.5	27 37 0	13 44 52	14.8	
			8 4 36	26 41 25	13 16 57	15.7	
Dec. 20,	Sun . .	U.	3 50 59	25 28 10	12 23 56	− 22 19.8	Temperature, 59°; index, +18″.
Eclipse		U.	3 56 58	23 39 25	11 29 15	19.2	Mean correction, $-22^m\,19^s.1$.
Station.		U.	3 59 25.5	22 54 5	11 6 27	18.3	

F.—*Observations for Index Correction of Sextant.*

Each result is generally the mean of two observations.

Date.	Object.	Readings "Off" arc.	Readings "On" arc.	Correction.
d. h.		° ′ ″	° ′ ″	″
December 14, 23	Sun . .	359 27 0	0 32 50	+ 5
15, 1	Sun . .	359 26 5	0 33 15	+ 20
4	Tower*.	359 47 25	0 10 42	+ 40
11	Jupiter.	359 59 5	359 55 55	+ 30
20 0	Sun . .	359 27 12	0 32 12	+ 18
26 7	Moon .	359 27 58	0 30 37	+ 42

* Measures of the width of the signal tower, about 4,000 feet distant. Correction for parallax −16″.

G.—*Transits observed with the Transit Instrument at the Eclipse*

Number.	Date.	Object.	Position of clamp.	Seconds of transit over wires.							Resulting time of transit over middle wire.			Level employed.	Level indication.
				1.	2.	3.	4.	5.	6.	7.					
	1870.			s.	s.	s.	s.	s.	s.	s.	h.	m.	s.		d.
1	Dec. 20	Polaris	W.	. .	. .	. .	30.0	3.0	. .	. .	7	37	30.0	A	2.6 E.
2		*o* Piscium	W.	. .	. .	46.8	. .	29.5	50.7	11.3	8	4	7.6	A	3.0 E.
3		50 Cassiopeæ	W.	. .	. .	52.1	1.0	9.5	. .	. .	8	17	59.9	A	8.6 E.
4		ξ^1 Ceti	W.	. .	. .	. .	39.5	1.0	21.7	42.5	8	31	39.2	A	10.4 E.
5		ι Cassiopeæ	W.	. .	. .	2.3	55.5	50.5	44.0	36.5	8	43	55.6	A	6.0 E.
6		γ Ceti	E.	. .	. .	. .	. .	22.0	43.7	5.0	9	2	1.4	.	8.5 E.
7		α Ceti	E.	50.0	10.5	31.8	53.7	14.5	35.5	57.3	9	20	53.4	.	8.0 E.
8		α Persei	E.	46.0	9.0	51.3	24.5	56.3	28.5	2.0	9	40	24.4	.	3.0 W.
9	21	β Arietis	.	57.7	. .	. .	. .	27.5	. .	13.0	8	9	5.2	.	2.5 E.
10		α Arietis	.	. .	40.7	4.0	27.8	50.0	13.0	36.3	8	21	27.4	A	6.1 E.
11		ι Cassiopeæ	.	. .	18.5	11.3	7.0	59.7	53.7	47.7	8	40	6.8	.	2.9 E.
12		5 Ursæ Minoris, S. P.	.	. .	. .	. .	. .	26.0	55.3	21.0	8	48	55.0	.	4.7 W.
13		α Ceti	W.	50.5	. .	22.4	. .	. .	35.8	56.3	9	16	53.3	.	4.3 W.
14		ζ Arietis	W.	42.0	. .	28.3	. .	13.5	. .	57.5	9	28	50.2	.	4.2 W.
15		α Persei	W.	. .	. .	. .	. .	5.5	37.7	9.3	9	36	32.2	.	7.9 E.
16	22	α Persei	E.	. .	. .	. .	. .	. .	38.0	11.0	9	32	33.4	B	18.2 W.
17		η Tauri	E.	. .	. .	47.5	10.5	33.5	. .	20.3	9	57	10.8	A	6.4 W.
18		γ Eridani	E.	13.5	34.5	56.3	18.7	39.7	1.7	23.8	10	9	18.5	A	4.1 W.
19		γ Tauri	W.	. .	. .	. .	40.5	3.0	24.7	46.3	10	29	40.6	A	18.5 W.
20		α Tauri	W.	. .	58.3	21.0	42.8	5.2	27.0	48.6	10	45	42.6	A	4.2 W.
21		ι Aurigæ	W.	30.5	55.5	21.2	46.0	11.8	37.0	1.2	11	5	46.0	A	9.4 W.
22		ε Ursæ Minoris, S. P.	W.	. .	. .	. .	41.0	. .	. .	. .	11	15	41.0	A	2.5 W.
23	23	α Lyræ	W.	8.5	36.2	2.5	28.8	56.6	23.4	49.6	0	47	29.1	A	10.8 E.

NOTES.

1. The two wires are discordant by 30^s, and the observation is not used.

9. Before this observation the transit wires were found far from vertical, though they had been carefully adjusted on the 17th. They were readjusted, and, on examining the collimation by reversal on a distant object, the middle wire was found too near the clamp side of the instrument by an amount estimated at $0^s.10$ or $0^s.12$.

8, 19. Before each of these observations the azimuth was accidentally changed by moving the azimuth-screw.

Station to determine the error of the Chronometer on Local Time.

Number.	Correction for—		Minutes and seconds of transit over a vertical circle.	Computed mean time of transit over meridian.	Difference.	Coefficient of azimuth.	Adopted azimuth.	Correction of chronometer.
	Collimation.	Level.						
	s.	s.	m. s.	h. m. s.	m. s.		s.	m. s.
1	0.00	− 4.0	37 26.0	7 15 12.0	− 22 14.0	− 32.6	+ 0.50	− 22 30 :
2	0.00	− 0.1	4 7.5	7 41 46.9	20.6	+ 0.47	. .	20.4
3	0.00	− 1.5	17 58.4	7 55 38.7	19.7	− 1.8	. .	20.6
4	0.00	− 0.6	31 38.6	8 9 17.2	21.4	+ 0.47	. .	21.2
5	0.00	− 0.9	43 54.7	8 21 34.3	20.4	− 1.3	. .	21.0
6	0.00	− 0.5	2 0.9	8 39 39.6	21.3	+ 0.55	. .	21.0
7	0.00	− 0.5	20 52.9	8 58 31.8	21.1	+ 0.55	. .	20.8
8	0.00	+ 0.3	40 24.7	9 18 4.0	20.7	− 0.35	. .	20.9
9	− 0.32	− 0.17	9 4.7	7 46 45.5	19.2	+ 0.29	− 5.00	20.7
10	− 0.32	− 0.42	21 26.7	7 59 6.8	19.9	+ 0.25	. .	21.1
11	− 0.5	− 0.4	40 5.9	8 17 38.3	27.6	− 1.30	. .	21.1
12	+ 1.2	− 0.5	48 55.7	8 26 54.2	1.5	+ 3.90	. .	21.0
13	+ 0.30	+ 0.23	16 53.9	8 54 35.9	18.0	+ 0.55	− 6.30	21.5
14	+ 0.32	+ 0.28	28 50.8	9 6 31.1	19.7	+ 0.29	. .	21.5
15	+ 0.45	− 0.79	36 31.8	9 14 8.1	23.7	− 0.36	. .	21.4
16	− 0.45	+ 1.55	32 34.5	9 10 12.2	22.3	− 0.36	− 2.90	21.3
17	− 0.32	+ 0.45	57 11.0	9 34 49.7	21.3	+ 0.24	. .	22.0
18	− 0.31	+ 0.18	9 18.4	9 46 59.5	18.9	+ 0.79	. .	21.2
19	+ 0.32	+ 1.41	29 42.3	10 7 22.6	19.7	+ 0.36	− 6.30	22.0
20	+ 0.32	+ 0.30	45 43.2	10 23 24.0	19.2	+ 0.35	. .	21.4
21	+ 0.36	+ 0.75	5 47.1	10 43 25.2	21.9	+ 0.06	. .	22.3
22	− 2.2	− 0.6	15 38.2	10 53 56.5	− 21 41.7	+ 6.50	. .	22.6
23	+ 0.39	− 0.87	47 28.6	0 25 6.2	− 22 22.4	− 0.05	. .	22.7

NOTES.

22. On the following morning the collimation was examined by reversal, and the middle wire found too near the clamp end of the axis by $0^{r}.031$ of the azimuth-screw. The observation was made in sunshine. The results for chronometer error seem to show that this collimation is fictitious; but, as the error will be eliminated from the mean of observations made in both positions of the instrument, I have made no change in the result.

H.

Determination of Constants pertaining to the Transit-Instrument.

Calling wire I that nearest the clamp end of the axis, the eight transits observed over both wires, I and IV, were taken, and the observed intervals separately reduced to the equator by multiplying them by cos δ. The same thing was done with the ten transits observed over wires IV and VII. The results were:

$$\begin{aligned} & \qquad\quad \mathrm{s.} \\ \mathrm{VII}-\mathrm{IV} &= 63.28 \\ \mathrm{IV}-\mathrm{I} &= 63.34 \\ \mathrm{VII}-\mathrm{I} &= 126.62 \end{aligned}$$

The intermediate wires were determined by means ot the azimuth-screw of the instrument. The latter being pointed on a distant mark, the readings of the screw for coincidence of the several wires with the mark were as follows:

Wires.	Microm.	Intervals.	Intervals in time.	Reduction of each wire to IV.
	r.	r.	s.	s.
I.	20.806	1.620	21.56	+ 63.54
II.	19.186	1.590	21.17	+ 41.98
III.	17.596	1.563	20.81	+ 20.81
IV.	16.033	1.627	21.67	0.00
V.	14.406	1.584	21.09	− 21.67
VI.	12.822	1.528	20.34	− 42.76
VII.	11.294			− 63.10

From the first and last of these readings is concluded:

$$\begin{aligned} \mathrm{VII}-\mathrm{I} &= 9^{\mathrm{r}}.512 = 126^{\mathrm{s}}.62 \\ 1^{\mathrm{r}} &= 13^{\mathrm{s}}.312 \end{aligned}$$

and the intervals and reductions to middle wire are thence deduced.

To find the value of one revolution of the level-screw, the instrument was fastened in its Y's by an elastic cord, and the stand was then tipped over so that the level-screw was horizontal. The following three intervals were then determined in the same way with that employed in investigating the azimuth screw:

$$\begin{aligned} \mathrm{II}-\mathrm{I} &= 1^{\mathrm{r}}.590;\ \text{difference from azimuth screw} = -0^{\mathrm{r}}.030 \\ \mathrm{III}-\mathrm{II} &= 1^{\mathrm{r}}.569;\ \text{difference from azimuth screw} = -0^{\mathrm{r}}.021 \\ \mathrm{IV}-\mathrm{III} &= 1^{\mathrm{r}}.521;\ \text{difference from azimuth screw} = -0^{\mathrm{r}}.042 \end{aligned}$$

From this is concluded,

$$\begin{aligned} 4^{\mathrm{r}}.680 &= 63^{\mathrm{s}}.54 \\ 1^{\mathrm{r}} &= 13^{\mathrm{s}}.58 \end{aligned}$$

The Spirit-Levels.

These were put upon the axis of the instrument in succession, and their bubbles were read in different positions of the level-screw, as follows:

Level screw.	Level B.		Level screw.	Level A.	
	W.	E.		W.	E.
r.	*d.*	*d.*	*r.*	*d.*	*d.*
.109	28.0	77.0	.235	55.5	82.0
.210	45.5	58.5	.350	79.0	57.8
.300	60.0	43.0	.250	56.0	80.0
.100	20.0	83.5	.370	81.5	55.0
.300	57.0	45.5	.240	51.5	84.0
.400	74.0	28.0	.400	85.5	49.5
.100	15.0	88.0			

Having regard to the value just found for one revolution of the level-screw, it is concluded that

One division of level A $= 0^s.065$
One division of level B $= 0^s.072$

I.

Exchange of Signals with Professor Hall at Malta, through the Falmouth, Gibraltar and Malta Cable.

DECEMBER 15.

A signal was sent every fifteen seconds from $4^h\ 45^m\ 0^s$ to $4^h\ 50^m\ 0^s$, chronometer time, but the signal which should have been sent at $4^h\ 49^m\ 45^s$ was half a second late.

Signals from Malta were received at the following times:

h.	m.	s.	h.	m.	s.
4	52	47.1	4	55	2.2
	53	2.4			17.3
		17.4			32.4
		32.4			47.3
		47.3		56	2.5
	54	2.5			17.3
		17.3			32.2
		32.3			47.4
		47.3		57	2.4
					17.4

Next morning, December 16, civil time, signals were sent to Malta every fifteen seconds from $23^h\ 32^m\ 0^s$ to $23^h\ 37^m\ 0^s$.

Signals from Malta were received as follows:

h.	m.	s.	h.	m.	s.
23	39	18.7:	23	42	3.2
		32.7:			18.0
		48.0:			33.0
	40	3.0			48.1
		17.9:		43	3.2
		33.0			18.3
		48.1			33.2
	41	3.2			48.1
		18.2		44	3.0
		33.2			18.3
		48.1			

NOTE.—The signals were sent by pressing a key simultaneously with the proper beat of the chronometer. They were received by having an operator strike a key as soon as he saw the motion of the image reflected from the mirror of the galvanometer. The time of this stroke was noted by the observer at the chronometer.

REPORT

OF

PROFESSOR ASAPH HALL, U. S. N.

REPORT OF PROFESSOR HALL, U. S. N.

UNITED STATES NAVAL OBSERVATORY, *Washington, February* 27, 1871.

SIR: I have the honor to submit the following report of my observations of the solar eclipse of December 22, 1870.

I left New York November 2, on the Cunard steamship China, and, arriving at Liverpool November 13, proceeded thence by the way of London to Southampton, and from that port by the steamship Poonah, of the Peninsular and Oriental Line, to Malta, and from Malta by the Florio steamer to Syracuse; arriving at Syracuse December 8. I returned to Malta December 12, and remained there four days for the purpose of exchanging telegraphic signals for longitude with Professor Newcomb at Gibraltar, and with Professor Harkness at Syracuse.

We left Syracuse the day after the eclipse, and, passing through Italy and Central Europe, I returned to England by the way of Ostend and Dover. Leaving Liverpool January 21, I arrived at Washington February 3, 1871.

I wish to express my sincere thanks to Signor Nunzio Stella, the American consular agent, and to the civil and military authorities of Syracuse, for their kind attentions to our party, and for the facilities afforded us. I am indebted also to Signor Bisani, the English consular agent, for his assistance.

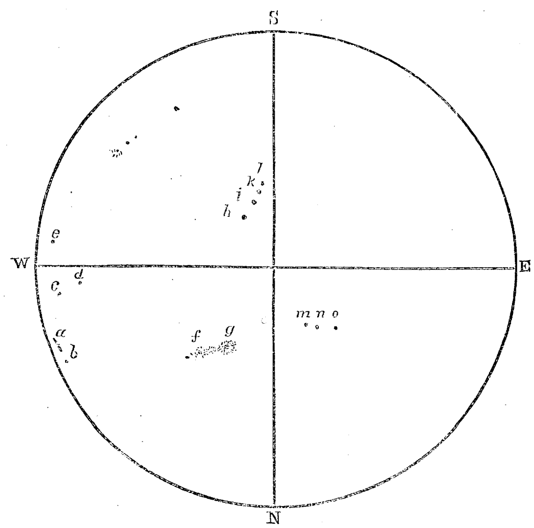
At Malta I was under great obligations to Mr. Lyell T. Adams, our consul, and to Mr. B. Smith and Mr. Edward Rosenbusch, superintendents of the telegraph offices in Malta. It was only through the energy and skill of Mr. Rosenbusch that we were able to make the telegraphic connections between Malta and Syracuse. I have to offer my thanks to Messrs. Pisani, Portelli, Fauqueir, and other gentlemen connected with the telegraph offices, for the assistance rendered me in exchanging the signals. To Mr. Pisani I am also indebted for assistance in my time observations. I am under special obligations to Captain G. L. Tupman, of the Royal Marine Artillery, who assisted me in many of my sextant observations, and who furnished me with much local information. M. Berthet, optician at Valetta, very kindly allowed me the use of his fine transit-instrument. The whole party is much indebted to the Messrs. Negus, of New York, who furnished us with excellent chronometers.

THE ECLIPSE.

My observing station in Syracuse was on the "Bastione San Filippo," a little north of the gate "Prima Porta Terra." My telescope was a comet-seeker by Ploessl, with a 3¾-inch object-glass and a magnifying power of about fifty. The following are my observations of the times of contact and the bisections of solar spots. The times observed are those of the chronometer Negus 1228, and were observed with a dark glass at the eye-piece except those of the second and third contacts, or the beginning and end of total eclipse, which were observed without the shade:

Object.	Ch. Negus 1228.	Chron. corr.	Local M. T.	Notes.
	h. m. s.	h. m. s.	h. m. s.	
First contact . . .	11 37 35.0	+ 1 0 38.0	0 38 13.0	Fair.
Spot *d*	11 43 16.0	1 0 38.0	0 43 54.0	Fair.
Spot *f*	0 0 51.0	1 0 38.0	1 1 29.0	Fair.
Spot *h*	0 12 6.0	1 0 38.0	1 12 44.0	Good.
Spot *m*	0 33 27.0	1 0 38.0	1 34 5.0	Good.
Spot *n*	0 34 46.0	1 0 38.0	1 35 24.0	Good.
Spot o_1	0 37 37.0	1 0 38.0	1 38 15.0	Fair.
Spot o_2	0 38 5.0	1 0 38.0	1 38 43.0	Fair.
Second contact . .	1 2 17.5	1 0 38.0	2 2 55.5	Good.
Third contact . . .	1 4 0.0	1 0 38.0	2 4 38.0	Poor.
Fourth contact . .	2 21 20.5	+ 1 0 38.0	3 21 58.5	Fair.

The annexed diagram of the solar spots was made about an hour before the beginning of the eclipse, and will serve to identify the spots observed. The observed times of contact agree very closely with those computed from the data of the American Ephemeris, the longitude of Syracuse being assumed as $-6^h\ 9^m\ 25^s.6$; but as our attempt to determine the longitude of Syracuse from Greenwich was unsuccessful, on account of a break in the submarine cable between Gibraltar and England, no accurate comparison with the tables can be made. Assuming, however, that the longitude of Gibraltar is tolerably well known, our telegraphic connection with that point enables us to determine the longitude of our observing station at Syracuse. In this way Professor Harkness finds for the longitude east of Washington



$$6^h\ 9^m\ 27^s.8$$

By combining the results of all the sextant observations, Professor Harkness has deduced as the most probable value of the latitude of our station

$$\varphi = +\ 37°\ 3'\ 52''.6 \pm 2''.98$$

I have adopted therefore.

$$\varphi = +\ 37°\ 3'\ 53''$$
$$\lambda = -\ 6^h\ 9^m\ 27^s.8$$

and a computation from the data of the American Ephemeris gives the following times of contact:

Phase.	Computed times.			Observed times.			$\Delta t.$
	h.	m.	s.	h.	m.	s.	s.
First contact . . .	0	38	19.2	0	38	13.0	+ 6.2
Second contact . .	2	3	5.1	2	2	55.5	+ 9.6
Third contact . . .	2	4	46.1	2	4	38.0	+ 8.1
Fourth contact . .	3	22	8.0	3	21	58.5	+ 9.5

The following differential equations will serve for computing changes in the times of contact produced by small changes in the position of the observing station:

$$dt = -\ 0.014\ d\varphi - 1.525\ d\lambda,\ \text{first contact,}$$
$$dt = -\ 0.014\ d\varphi - 1.509\ d\lambda,\ \text{second contact,}$$
$$dt = -\ 0.014\ d\varphi - 1.423\ d\lambda,\ \text{third contact,}$$
$$dt = -\ 0.014\ d\varphi - 1.300\ d\lambda,\ \text{fourth contact,}$$

$d\varphi$ being expressed in seconds of arc, and $d\lambda$ in seconds of time. The value of φ is supposed to increase positively toward the north and that of λ toward the west.

The times of contact computed by Signor Agnello, of the Palermo Obervatory, are on an average 25 seconds earlier than those which I have computed, except the time of first contact, which is 88 seconds later, evidently a misprint or the result of some error of computation. Signor Agnello's data is that of the English Nautical Almanac.

My chief purpose during the total eclipse was to observe the structure of the corona, with special reference to the curved and radiating lines seen in previous eclipses, but the condition of the sky was such that this observation was unsatisfactory. During the last quarter of an hour of the first partial phase it appeared hopeless that the total eclipse would be visible, the sun being covered by a thick cloud. This cloud, however, had a slow motion upward and toward the east, and a few minutes before totality the nar-

row crescent of the sun appeared through the clouds. On account of these clouds I was able to take off my colored glass shade and watch the disappearance of the sun without any protection or inconvenience to the eye. The apparent diameters of the sun and moon being nearly equal, the bright crescent became extremely long and narrow, and broke up into bits and fragments, but I noticed no color nor anything remarkable before the disappearance of the last long, thin remnant. After recording my observed time of the beginning of total eclipse I pointed the telescope to the east limb of the moon and swept around toward the south back to the starting point. I should not estimate the extent of the corona to be more than five or ten minutes from the limb of the moon, but the clouds make this estimate quite uncertain; and with regard to the form or outline of the corona it could not, I think, be observed with accuracy. The appearance of the corona in the telescope was that of a soft, white, diffused light. There was very little appearance of the radiating lines shown in many pictures, and I saw no curved streamers. Near the southwestern point of the moon there was apparently a deep opening in the corona, reaching nearly to the limb of the moon, but on account of the clouds this opening was very indistinct.

After sweeping around the moon I pointed the telescope on one of the large protuberances near the eastern limb of the moon, but could see nothing of the spotted or cellular appearance seen by Professor William A. Rogers in the eclipse of August 7, 1869. The protuberances, which were very numerous, were uniformly of a dull pink color. Then having some fifteen or twenty seconds to spare, I looked at the eclipse with the naked eye. The moon was still covered with the light and shifting clouds, but as they were rising and passing toward the east the lower and southwestern part of the moon was much the clearer. At this point the corona was quite bright, and here several delicate streamers shot down to the distance of eight or ten degrees. There was no color, and to the naked eye the corona appeared, as in the telescope, of a soft, white light. Putting my eye back to the telescope I observed the first reappearance of the sun through a deep notch in the moon's limb. This a little disturbed me and made my observation of the end of totality somewhat uncertain.

The darkness during total eclipse was much less than during the eclipse of August, 1869. As the totality approached it became quite cold, and a strong wind arose, but as my telescope had a solid, firm mounting, the wind gave me no trouble. I did not see the planet Saturn, which was a little north of the moon, but my attention was not specially directed to the discovery of the planet.

The general appearance of the total eclipse was something as follows: The black moon in the center surrounded with a narrow rim of bright light a quarter or half a minute in thickness. Above this rim rose the dull pink-colored protuberances, and beyond these extended the white corona, the whole making a very beautiful sight. I refrain from attempting to make any picture of the eclipse. On account of the suddenness, the beauty and grandeur of the phenomena displayed, it is very difficult to make a correct picture by hand-sketching; and so much must the memory be relied on, and so great is the opportunity for the play of the imagination, that I can have but little faith in such pictures. Photography appears to furnish the only means of making a truthful picture. At Syracuse we were fortunate in having the companionship of three English observers, Messrs. Brothers and Fryer, of Manchester, and Mr. Griffith, of Harrow. Messrs. Brothers and Fryer obtained several photographs of the total eclipse, and one which was understood to be very satisfactory.

At the instant of the beginning of total eclipse I noticed in the telescope an appearance that it may be worth while to describe. The protuberances darted quickly into view, and there was a flashing back of the sunlight, and an apparent mingling of red and white light that was very striking. The appearance was somewhat like that given by Mr. Gilman in his picture of the eclipse of 1869, but it was, I think, an optical illusion, for after recording my time and putting my eye again to the telescope the appearance was entirely gone.

With regard to the long streamers seen near the end of totality, I had the impression when seeing them that they were not of the corona proper, but were produced in the earth's atmosphere. This impression was caused, perhaps, by the proximity of the clouds, and by the resemblance of the streamers to the phenomenon commonly spoken of as the "sun's drawing water," only the streamers were much more delicate and more like what we see sometimes in our atmosphere on a hazy day.

SEXTANT OBSERVATIONS.

I give below the observations for time and latitude made at Malta and Syracuse with the Pistor & Martins patent sextant No. 107. The altitudes were observed by myself, and the times at Malta by Captain Tupman and Mr. Pisani; at Syracuse by Professor Eastman, Captain Tupman, and myself. In the column of dates I have placed the initials of the observers. It should be stated that the observations at Malta, until December 15, were made with the low power, as the colored shade had become so firmly fixed to this telescope during the transportation of the instruments that I did not succeed in removing it until the evening of December 14.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
				MALTA.
1870.	h. m. s.	° ′ ″	h. m. s.	
Dec. 12.9	7 58 40.5	34 29 0	+ 0 57 30.0	
H. T.	7 59 37.7	34 44 30	29.5	$dt = +0.1250\ dh + 0.0941\ d\varphi$
	8 0 25.6	34 57 40	30.1	h. m. s. s.
	8 1 45.2	36 23 10	26.3	$\Delta c = +0\ 57\ 29.0 \pm 0.28$
	8 3 47.5	36 56 40	28.6	Red. = + 0.6
	8 5 8.1	37 18 30	29.3	
	8 6 29.2	37 39 30	27.5	
	8 7 44.4	38 0 50	31.0	
	8 8 22.2	38 10 10	30.5	
	8 9 35.2	37 23 50	28.7	
	8 12 46.1	38 13 40	29.0	
	8 13 37.7	38 26 20	26.9	
			° ′ ″	° ′ ″ ″
Dec. 13.0	10 58 43	61 21 30	+35 52 90	$\varphi = +35\ 52\ 55 \pm 3.0$
H. T.	10 59 15.5	61 22 50	46	
	10 59 49	61 22 10	62	
	11 0 32	61 21 20	78	
	11 1 14.5	62 27 40	31	
	11 1 49.5	62 27 0	41	
	11 2 27.2	62 26 40	41	
	11 3 12	62 25 30	60	
	11 3 51.5	62 25 10	56	
	11 4 24.2	62 24 40	56	
	11 5 0	62 24 20	51	
	11 5 34.5	62 23 30	59	
	11 6 8.5	61 17 40	66	
	11 8 10	61 15 50	49	
	11 8 41.2	61 15 10	50	
	11 9 7.2	61 14 30	50	
			h. m. s.	
Dec. 13.9	7 42 48.5	30 52 0	+ 0 57 29.8	$dt = +0.1165\ dh + 0.0825\ d\varphi$
H. T.	7 43 21.7	31 1 50	31.0	h. m. s. s.
	7 43 50.6	31 9 40	29.2	$\Delta c = +0\ 57\ 28.4 \pm 0.39$
	7 44 36.2	30 17 10	27.0	
	7 45 15.3	30 28 10	26.4	
	7 45 46.5	30 37 0	26.0	
	7 46 39.0	30 52 10	26.7	
	7 47 25.6	31 5 20	26.3	
	7 48 10.5	31 18 40	28.5	
	7 48 47.8	32 34 0	27.8	
	7 49 22.2	32 44 50	31.8	
	7 49 49.2	32 52 10	30.7	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	° ′ ″	MALTA.
Dec. 14.0	5 53 52	61 9 20	+35 53 66	Times by Frodsham watch 1915:
H. P.	5 55 12	61 8 0	67	h. m. s.
	5 55 46	61 8 10	40	Chr. 1228, 11 27 0
	5 56 29	62 12 10	54	Fr. 1915, 6 15 28.4
	5 57 1	62 11 40	49	° ′ ″ ″
	5 57 30	62 11 20	41	$\phi = +35$ 54 0 ± 2.3
	5 58 23	62 8 50	77	
	5 58 45	62 8 50	64	
	5 59 18	62 8 20	55	
	5 59 57	61 1 40	70	
	6 0 29	61 1 0	65	
	6 0 56	61 0 0	72	
			h. m. s.	
Dec. 14.1	1 43 30	37 34 10	+0 57 26.1	$dt = -0.1222\, dh - 0.0903\, d\phi$
H. P.	1 44 13	37 22 0	30.9	h. m. s. s.
	1 46 14	37 50 40	29.4	$\Delta c = +0$ 57 28.6 ± 0.34
	1 46 53	37 45 50	27.8	
	1 47 50	37 31 0	26.9	
	1 48 18	37 23 0	29.2	
	1 49 37	37 2 10	28.5	
	1 51 49	36 43 30	26.4	
	1 53 8	36 5 20	29.0	
	1 53 43	35 55 40	29.7	
	1 55 56	34 23 30	26.8	
	1 56 44	34 0 40	32.3	
	1 57 6	33 55 20	29.7	
H. T.	2 7 52.7	30 54 30	31.0	
	2 8 30.3	30 44 40	28.0	
	2 10 28.1	31 17 0	24.3	
	2 11 20.0	31 0 10	30.9	
Dec. 14.9	7 35 38.0	27 26 30	+0 57 24.8	$dt = +0.1155\, dh + 0.0811\, d\phi$
H. T.	7 36 20.5	27 39 40	27.0	h. m. s. s.
	7 36 54.2	27 48 30	23.3	$\Delta c = +0$ 57 28.0 ± 0.47
	7 37 54.5	28 7 40	28.4	
	7 41 20.0	30 13 30	32.0	
	7 42 7.2	30 27 20	32.6	
	7 43 25.1	30 47 50	25.9	
	7 44 35.5	31 10 0	32.4	
	7 45 44.1	31 28 30	28.6	
	7 46 15.2	31 37 20	28.4	
	7 46 42.0	31 45 20	29.7	
	7 47 19.8	31 56 10	29.9	
	7 48 20.5	31 7 40	27.2	
	7 49 2.5	31 18 50	24.6	
	7 49 40.2	31 30 0	26.4	
	7 50 28.3	31 43 40	26.9	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	° ′ ″	MALTA.
Dec. 15.0	5 27 10	60 45 50	+35 54 1	h. m. s.
H. P.	5 27 51	60 47 10	14	Chr. 1228, 11 47 0
	5 28 44	60 48 40	23	Fr. 1915, 6 35 24.0
	5 40 21	61 4 0	27	° ′ ″ ″
	6 3 6	61 55 10	27	$\phi = +35\ 54\ 23 \pm 2.7$
	6 23 41	60 52 30	25	
	6 24 9	60 50 10	35	
	6 24 45	60 47 40	34	
			h. m. s.	
Dec. 15.1	1 35 30.5	40 43 40	+0 57 28.1	$dt = -0.1297\, dh\ -0.1002\, d\phi$
H. P.	1 36 1.5	40 35 0	31.3	h. m. s. s.
	1 36 34.5	40 27 10	29.6	$\Delta c = +0\ 57\ 29.2 \pm 0.34$
	1 37 7.0	40 20 0	25.3	
	1 38 30.0	38 52 40	30.5	
	1 38 53.0	38 47 0	29.4	
	1 39 15.5	38 42 10	26.2	
	1 39 50.5	38 32 30	28.9	
	1 40 32.5	38 21 20	30.7	
	1 41 23.0	38 7 50	32.6	
	1 41 58.0	37 59 20	30.6	
	1 42 58.0	37 43 50	30.6	
	1 43 44.5	38 36 40	29.8	
	1 44 25.0	38 26 30	28.3	
	1 45 40.0	38 6 30	30.1	
	1 46 10.5	37 59 30	26.0	
Dec. 15.9	7 45 48.2	31 16 50	+0 57 28.1	$dt = +0.1177\, dh\ +0.0841\, d\phi$
H. T.	7 46 47.1	31 34 20	30.4	h. m. s. s.
	7 47 20.2	31 43 10	28.4	$\Delta c = +0\ 57\ 28.7 \pm 0.18$
	7 47 43.2	31 49 50	28.8	
	7 48 28.0	30 58 0	30.3	
	7 49 0.0	31 7 0	30.1	
	7 49 25.6	31 13 50	28.6	
	7 49 48.5	31 20 30	29.3	
	7 50 36.7	31 33 40	27.7	
	7 51 8.2	31 42 50	28.9	
	7 51 35.8	31 50 50	29.7	
	7 52 6.3	31 59 0	28.3	
	7 53 20.3	33 24 10	26.5	
	7 53 44.5	33 31 10	27.5	
	7 54 15.5	33 40 0	28.3	
	7 54 40.5	33 46 50	27.7	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	h. m. s.	MALTA.
Dec. 16.1	1 37 40.0	40 14 0	+ 0 57 28.1	
H. P.	1 38 17.0	40 4 20	29.3	$dt = -0.1289\, dh \ -0.0992\, d\phi$
	1 38 43.5	39 57 10	31.2	h. m. s. s. $\Delta c = +0 \ 57 \ 29.7 \pm 0.18$
	1 39 14.5	39 49 20	30.8	
	1 40 36.0	38 23 40	30.3	
	1 41 8.0	38 16 0	28.3	
	1 41 41.0	38 7 0	30.3	
	1 42 12.0	37 59 0	30.5	
	1 43 16.0	37 43 0	28.5	
	1 43 39.0	37 36 30	30.5	
	1 44 0.5	37 31 30	29.9	
	1 44 24.0	37 25 0	29.8	
	1 45 38.5	38 10 50	29.0	
	1 46 11.5	38 2 0	29.9	
	1 46 36.0	37 56 10	27.5	
	1 47 2.0	37 48 30	30.8	
Dec. 16.9	7 31 14.0	25 6 10	+ 1 0 38.2	SYRACUSE.
H. H.	7 32 40.5	25 30 50	36.8	$dt = +0.1177\, dh \ +0.0830\, d\phi$
	7 34 6.0	25 55 40	37.3	h. m. s. s.
	7 35 32.5	26 21 10	39.3	$\Delta c = +1 \ 0 \ 37.4 \pm 0.22$
	7 37 44.0	28 3 30	38.5	$\Delta t = + \ 1.5$
	7 38 47.5	28 21 30	38.2	
	7 39 53.5	28 40 20	38.6	
	7 41 23.5	29 5 50	38.7	
	7 42 52.5	29 30 10	36.3	
	7 43 53.0	29 47 50	38.9	
	7 45 14.5	30 10 0	36.6	
	7 46 9.5	30 25 20	36.9	
	7 47 25.5	29 40 50	35.5	
	7 48 27.5	29 58 40	37.1	
	7 49 47.5	30 20 20	35.9	
	7 50 20.5	30 29 10	35.2	
			° ′ ″	° ′ ″ ″
Dec. 17.0	10 51 31	59 40 40	+37 3 54	$\phi = +37 \ 3 \ 57 \pm 1.5$
H. H.	10 52 39	59 41 10	53	
	10 53 32	59 41 20	52	
	10 54 38	58 36 50	42	
	10 55 28	58 36 40	49	
	10 56 16	58 36 25	56	
	10 57 20	58 36 0	65	
	10 58 4	58 35 55	61	
	10 58 57	58 35 50	57	
	11 0 16	58 40 15	61	
	11 1 20	58 39 40	60	
	11 2 16	58 38 40	72	

Sextant Observations—Continued.

Date.	Chronom 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	h. m. s.	SYRACUSE.
Dec. 17.1	1 53 0.0	33 43 0	+ 1 0 41.4	$dt=-0.1220\,dh-0.0889\,d\phi$
H. E.	1 54 48.5	33 13 40	42.4	h. m. s. s.
	1 55 50.0	32 57 30	41.4	$\Delta c=+1$ 0 40.9 ± 0.19
	1 56 22.0	32 48 50	41.6	$\Delta t=-$ 1.6
	1 57 25.5	31 27 10	40.1	
	1 58 0.5	31 17 20	41.3	
	1 58 34.5	31 8 10	41.1	
	1 59 2.0	31 0 20	42.4	
	1 59 56.0	30 45 50	41.6	
	2 0 24.0	30 39 0	38.7	
	2 1 5.5	30 27 0	41.5	
	2 1 34.0	30 19 10	41.1	
	2 2 15.5	31 15 50	39.7	
	2 2 40.0	31 6 10	40.4	
	2 3 10.5	30 58 10	38.9	
	2 3 48.0	30 47 30	40.0	
Dec. 17.9	7 39 1.0	28 13 20	+ 1 0 36.4	$dt=+0.1230\,dh+0.0902\,d\phi$
H. H.	7 40 25.5	28 37 50	38.2	h. m. s. s.
	7 41 59.0	29 4 10	38.0	$\Delta c=+1$ 0 36.5 ± 0.30
	7 43 21.5	29 27 20	37.8	$\Delta t=+$ 1.6
	7 44 43.0	28 45 10	37.6	
	7 46 2.5	29 7 20	37.7	
	7 47 30.0	29 31 40	37.7	
	7 48 30.5	29 48 0	36.7	
	7 59 6.0	33 44 40	35.9	
	8 2 7.5	34 33 10	36.5	
	8 3 24.5	34 54 0	39.1	
	8 4 41.0	35 12 50	34.8	
	8 6 42.0	34 39 30	36.0	
	8 7 57.5	34 58 10	33.1	
	8 9 9.0	35 17 0	34.9	
	8 10 13.5	35 33 0	33.2	
Dec. 18.1	1 42 5.5	36 38 0	+ 1 0 42.0	$dt=-0.1290\,dh-0.0983\,d\phi$
H. E.	1 42 37.0	36 29 10	45.2	h. m. s. s.
	1 43 7.5	36 22 20	41.5	$\Delta c=+1$ 0 41.8 ± 0.22
	1 43 46.0	35 7 20	41.9	$\Delta t=-$ 1.8
	1 44 17.5	34 59 20	41.6	
	1 44 44.0	34 52 40	41.1	
	1 45 2.0	34 48 0	41.2	
	1 45 51.5	34 35 0	42.1	
	1 46 15.0	34 29 10	41.2	
	1 46 53.5	34 19 0	40.7	
	1 47 32.5	35 14 0	41.5	
	1 47 58.5	35 7 20	41.0	
	1 48 28.0	34 59 10	42.9	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	h. m. s.	SYRACUSE.
Dec. 18.9	7 23 49.0	22 33 20	+ 1 0 38.2	
H. E.	7 27 0.0	23 29 40	38.8	$dt=+0.1145\ dh+0.0783\ d\phi$
	7 28 14.0	23 51 10	37.8	h. m. s. s.
	7 29 22.5	24 11 0	37.0	$\Delta c=+1\ 0\ 37.3\pm0.14$
	7 32 47.0	26 15 20	36.5	$\Delta t=+\ 1.3$
	7 33 17.0	26 24 10	37.0	
	7 33 46.5	26 33 0	37.8	
	7 34 14.5	26 41 10	38.3	
	7 34 52.0	26 51 20	35.8	
	7 35 16.5	26 58 40	37.0	
	7 35 40.0	27 5 20	36.4	
	7 36 9.0	27 13 20	37.8	
	7 36 57.0	26 22 40	36.8	
	7 37 21.5	26 29 50	37.4	
	7 37 44.5	26 36 20	37.2	
	7 38 7.5	26 42 40	36.5	° ′ ″ ″
Dec. 19.0	10 47 37	59 30 20	+37° 3′ 68″	$\phi=+37\ 3\ 61\pm1.8$
H. H.	10 48 38	59 31 50	51	
	10 49 52	59 32 40	57	
	10 51 13	59 34 0	50	
	10 52 28	58 29 30	72	
	10 53 41	58 29 50	52	
	10 54 37	58 30 0	51	
	10 55 33	58 30 30	42	
	10 57 3	58 30 0	59	
	10 58 2	58 29 50	64	
	10 59 3	58 29 40	54	
	11 0 2	58 29 0	70	
	11 1 40	59 33 50	57	
	11 2 42	59 32 30	78	
	11 3 44	59 31 50	75	
	11 5 0	59 30 45	75	
Dec. 19.1	1 48 21.0	34 1 55	+ 1 0 41.7	$dt=-0.1234\ dh-0.0908\ d\phi$
H. H.	1 49 30.0	33 44 0	41.2	h. m. s. s.
	1 50 21.5	33 30 30	41.5	$\Delta c=+1\ 0\ 39.5\pm0.25$
	1 51 22.5	33 15 0	39.3	$\Delta t=-\ 1.7$
	1 52 58.5	33 54 30	39.9	
	1 54 5.0	33 36 20	41.8	
	1 55 41.5	33 11 0	40.2	
	1 56 31.0	32 57 50	39.9	
	1 58 11.0	32 31 20	37.8	
	1 59 9.5	32 15 20	38.9	
	2 0 11.5	31 58 30	39.0	
	2 2 1.0	31 29 10	37.1	
	2 2 59.5	30 7 10	37.6	
	2 4 7.5	29 48 50	39.3	
	2 4 58.5	29 35 0	38.3	
	2 5 46.0	29 21 40	39.2	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	° ′ ″	SYRACUSE.
Dec. 19.3	5 54 57.0	76 51 40	+37 3 17	
H. H.	5 56 53.0	76 53 40	73	° ′ ″ ″
	5 58 6.5	76 52 40	40	$\phi=+37$ 3 39 ± 2.6 *Polaris.*
	6 0 15.5	76 52 50	41	
	6 1 47.0	76 52 50	39	
	6 3 21.5	76 52 40	30	
	6 4 37.0	76 53 0	40	
	6 5 32.5	76 52 40	28	
	6 9 2.5	76 53 10	40	
	6 10 13.0	76 53 0	34	
	6 11 8.0	76 52 30	55	
	6 11 56.5	76 53 10	37	° ′ ″ ″
Dec. 20.3	6 32 27.0	76 52 10	+37 3 19	
H. H.	6 35 22.5	76 52 20	29	$\phi=+37$ 3 31 ± 2.3 *Polaris.*
	6 36 56.0	76 52 30	38	
	6 38 28.5	76 52 40	46	
	6 40 33.5	76 52 0	31	
	6 42 50.0	76 51 50	32	
	6 44 16.0	76 51 55	38	
	6 45 31.0	76 51 10	18	
			h. m. s.	
Dec. 20.9	7 23 37.5	23 13 30	+ 1 0 37.5	$dt=+0.1145\,dh+0.0783\,d\phi$
H. H.	7 24 53.0	23 36 0	39.0	h. m. s. s.
	7 26 9.5	24 1 40	37.6	$\Delta c=+$ 1 0 38.1 ± 0.26
	7 27 21.0	24 19 50	37.6	$\Delta t=+$ 1.3
	7 29 43.5	23 56 50	37.2	
	7 30 54.5	24 17 30	36.7	
	7 32 36.5	24 47 0	35.9	
	7 33 46.0	25 7 30	37.0	
	7 35 38.0	25 40 10	38.0	
	7 36 49.0	26 0 20	37.0	
	7 37 59.0	26 20 50	38.4	
	7 39 11.0	26 41 50	39.8	
	7 41 2.0	28 18 20	39.8	
	7 42 10.0	28 36 50	37.2	
	7 43 1.5	28 52 20	40.6	
	7 44 30.0	29 17 20	40.8	
			° ′ ″	° ′ ″ ″
Dec. 21.0	10 45 14.0	59 22 50	+ 37 3 79	$\phi=+37$ 3 61 ± 1.4
H. H.	10 46 47.0	59 25 0	74	
	10 47 12.5	59 25 40	67	
	10 47 39.5	59 26 0	73	
	10 48 6.0	58 21 50	59	
	10 48 35.5	58 22 30	53	
	10 49 27.0	58 23 10	58	
	10 50 53.0	58 24 20	58	
	10 51 50.0	58 25 10	54	
	10 52 44.0	58 25 20	64	

Sextant Observations—Continued.

Date.	Chronom. 1228.	Sextant R.	Corr. chronom. and latitude.	Results.
1870.	h. m. s.	° ′ ″	° ′ ″	SYRACUSE.
Dec. 21.0	10 53 35.0	58 26 10	+37 3 51	
H. H.	10 54 35.0	58 26 20	59	
	11 1 9.0	59 31 10	63	
	11 3 10.0	59 30 10	63	
	11 3 42.0	59 30 10	53	
	11 4 29.0	59 29 30	56	
			h. m. s.	
Dec. 21.1	1 57 9.8	31 56 20	+ 1 0 39.0	$dt=-0.1222\,dh-0.0892\,d\phi$
H. T.	1 57 31.1	31 50 40	38.9	h. m. s. s.
	1 57 51.0	31 45 30	38.2	$\Delta c=+$ 1 0 39.1±0.11
	1 58 45.1	31 31 0	38.0	$\Delta t=-$ 1.6
	1 59 28.1	32 24 0	39.4	
	1 59 50.6	32 17 50	39.7	
	2 0 22.0	32 9 30	39.0	
	2 0 42.5	32 4 10	38.2	
	2 1 36.1	31 49 30	38.5	
	2 2 4.7	31 41 20	39.9	
	2 2 43.0	31 31 10	39.2	
	2 3 12.6	31 22 40	40.4	
	2 3 42.0	30 10 0	39.1	
	2 4 10.4	30 2 0	39.9	
	2 4 31.5	29 56 30	38.7	
	2 4 57.5	29 49 10	39.4	
			h. m. s.	
Dec. 21.9	7 30 43.0	24 5 30	+ 1 0 37.7	$dt=+0.1145\,dh+0.0782\,d\phi$
H. T.	7 31 15.7	24 14 50	36.9	h. m. s. s.
	7 31 37.8	24 21 30	37.4	$\Delta c=+$ 1 0 35.9±0.25
	7 31 57.5	24 27 30	38.3	$\Delta t=+$ 1.3
	7 32 55.2	25 48 40	36.8	
	7 33 20.7	25 55 50	35.9	
	7 33 49.5	26 4 30	36.8	
	7 34 11.5	26 10 50	36.7	
	7 34 57.5	26 23 20	33.8	
	7 35 20.2	26 30 10	34.7	
	7 35 44.9	26 37 20	34.8	
	7 36 10.6	26 44 50	35.1	
	7 36 42.7	25 50 20	39.0	
	7 37 6.9	25 56 10	35.1	
	7 37 28.7	26 2 10	34.1	
	7 37 54.8	26 10 0	35.2	
	7 38 23.0	26 18 0	35.0	

The following are the observations for index correction, to which are added the observed values of the sun's diameter compared with the computed values :

Date.	Sextant readings.		Index correction.	Sun's diameter. Observed.	Sun's diameter. Computed.	Difference.	
	° ′ ″	° ′ ″	′ ″	′ ″	′ ″	″	
Dec. 12.9	0 31 17.5	359 25 50.0	+ 1 26	32 44	32 31	+ 13	Low power.
13.0	31 25.0	359 25 41.7	+ 1 27	32 52	32 33	+ 19	
13.9	31 6.0	359 25 40.0	+ 1 37	32 43	32 28	+ 15	
14.0	31 21.7	359 25 46.7	+ 1 26	32 47	32 32	+ 15	
14.1	31 40.6	359 25 21.7	+ 1 29	33 9	32 30	+ 39	
14.9	31 23.3	359 25 31.7	+ 1 32	32 56	32 29	+ 27	
15.0	31 17.2	359 26 12.2	+ 1 15	32 32	32 32	0	
15.1	31 16.7	359 26 16.7	+ 1 13	32 30	32 31	— 1	
15.9	31 15.0	359 26 0.0	+ 1 22	32 37	32 29	+ 8	
16.1	31 15.0	359 26 20.0	+ 1 12	32 28	32 31	— 3	
16.9	31 5.0	359 26 15.0	+ 1 20	32 25	32 27	— 2	
17.0	31 12.5	359 26 8.3	+ 1 20	32 32	32 33	— 1	
17.1	31 6.3	359 26 6.3	+ 1 24	32 30	32 27	+ 3	
17.9	31 16.7	359 26 10.0	+ 1 17	32 33	32 29	+ 4	
18.1	31 3.3	359 26 16.7	+ 1 20	32 26	32 31	— 5	
18.9	31 12.5	359 26 13.3	+ 1 17	32 30	32 26	+ 4	
19.0	31 15.8	359 26 19.2	+ 1 13	32 28	32 33	— 5	
19.1	31 13.3	359 26 16.7	+ 1 15	32 28	32 29	— 1	
19.3	. . .	359 58 31.7	+ 1 28	Polaris.			
20.3	. . .	359 58 36.7	+ 1 23	Polaris.			
20.9	31 5.8	359 26 10.0	+ 1 22	32 28	32 25	+ 3	
21.0	31 17.5	359 26 9.1	+ 1 17	32 34	32 33	+ 1	
21.1	31 15.0	359 26 16.7	+ 1 14	32 29	32 29	0	
21.9	31 8.3	359 26 11.7	+ 1 20	32 28	32 25	+ 3	

If we consider the spherical triangle formed by the star, the zenith of the observer, and the pole of the heavens, and designate by h, δ, t, the altitude, the declination, and hour angle of the star, we shall have the equation,

$$\sin h = \sin \varphi \sin \delta + \cos \varphi \cos \delta \cos t$$

Since sextant observations for time should be made as near the prime-vertical as practicable, the hour angle will be accurately determined by means of its cosine, and the above simple formula is, I think, more convenient for computation, and more exact than the transformed expressions that are usually employed. For the reduction of the latitude observations I have used the following formula derived from the preceding one by an easy transformation:

$$\cos (\varphi - \delta) = \sin h + 2 \cos \varphi \cos \delta \sin \tfrac{1}{2} t^2$$

If we differentiate the first equation, considering δ constant and denoting by A the azimuth, we shall have,

$$dt = -\frac{dh}{\cos \varphi \sin A} - \frac{d\varphi}{\cos \varphi \tan A}$$

This differential equation shows the importance of making the observations for time symmetrical with respect to the meridian. It has been computed for the mean hour angle in each set of observations, dt being expressed in seconds of time, and dh and $d\varphi$ in seconds of arc.

At Malta my observing station was at the telegraph office except on the first day, December 13, when the observations were made at Spencer's Monument. According to the map of the Ordnance Survey of Malta, Spencer's Monument is 253 yards west and 2,013 yards south of the telegraph office. In reducing the observations made at Syracuse the latitude was assumed to be $+37° 3'.5$, and a reduction, Δt, to the latitude finally adopted, is given in the column of results.

The following are the values of the latitudes obtained from the sextant observations:

		°	′	″	
Malta, Spencer's monument,	$\varphi = +$	35	52	55;	16 altitudes of the sun.
Malta, telegraph office,	$\varphi = +$	35	54	11;	20 altitudes of the sun.
Syracuse, Bastione San Filippo,	$\varphi = +$	37	3	57;	12 altitudes of the sun.
Syracuse, Bastione San Filippo,			3	61;	16 altitudes of the sun.
Syracuse, Bastione San Filippo,			3	61;	16 altitudes of the sun.
Syracuse, Bastione San Filippo,			3	39;	12 altitudes of Polaris.
Syracuse, Bastione San Filippo,			3	31;	8 altitudes of Polaris.
Mean latitude,	$\varphi = +$	37	3	48	

Corrections of Chronometer Negus 1228 *on Local Mean Time.*

Place.	Date.	A. M.				P. M.				Mean.			
	1870.		h.	m.	s.		h.	m.	s.		h.	m.	s.
Malta . .	Dec. 13	+	0	57	29.6								
	14	+	0	57	28.4	+	0	57	28.6	+	0	57	28.5
	15	+	0	57	28.0	+	0	57	29.2	+	0	57	28.6
	16	+	0	57	28.7	+	0	57	29.7	+	0	57	29.2
Syracuse .	Dec. 17	+	1	0	38.9	+	1	0	39.3	+	1	0	39.1
	18	+	1	0	38.1	+	1	0	40.0	+	1	0	39.0
	19	+	1	0	38.6	+	1	0	37.8	+	1	0	38.2
	21	+	1	0	39.4	+	1	0	37.5	+	1	0	38.4
	22	+	1	0	37.2								

When at Malta I was permitted by M. Berthet to use his transit-instrument. This instrument, made by Secretan, of Paris, in 1862, has an objective of three inches, and is very well mounted in an observatory on St. James Cavalier, the meridian of which differs but little from that of the telegraph office. As the value of the level divisions had not been determined, the level, and also the collimation error, were made zero by M. Berthet a short time before the observations. The wires of the instrument were too thick to admit of very accurate observations of transits, but the following may serve as a check on the determinations of time with the sextant:

Date.	Star.	Wires.	Chron. 1228.			App. α.			Corr. chron.			
1870.			h.	m.	s.	h.	m.	s.		h.	m.	s.
December 14	γ Ceti	5	8	5	59.44	2	36	36.84	+	0	57	28.48
	α Ceti	5	8	24	51.74	2	55	32.10			57	28.33
	δ Arietis . .	5	8	33	33.38	3	4	15.16			57	28.32
	α Persei . . .	5	8	44	23.74	3	15	7.54			57	28.55
December 15	12 Ceti	5	5	49	14.76	0	23	26.40	+	0	57	29.59
	β Ceti	5	6	2	52.30	0	37	5.82			57	29.46
	γ Cassiopeæ .	5	6	14	38.66	0	48	56.20			57	29.69
	ε Piscium . .	5	6	21	56.88	0	56	14.30			57	28.74
	Polaris . .	3	6	37	2.	1	11	58.			57	29.
	ν Piscium . .	5	7	0	19.40	1	34	42.59			57	29.31
	β Arietis . .	5	7	13	5.20	1	47	30.51			57	29.09

TELEGRAPHIC SIGNALS FOR LONGITUDE.

Through the kindness of Mr. Rosenbusch the telegraph offices at Malta and Syracuse were furnished with small portable and very convenient instruments for sending and receiving the signals. Each instrument was provided with two keys, worked by the observers, and the signals were given by the observer striking his key in coincidence with the beat of his chronometer. The signals were recorded on a fillet of paper similar to that used with the Morse register. For example, the observer at Syracuse gave signals every fifth second of his chronometer for three minutes, the observer at Malta during the same time giving signals at every second of his chronometer, and, both sets of signals being recorded on the fillet of the Malta instrument, a very accurate comparison of the chronometers was obtained. The operation was then reversed, the observer at Malta sending signals every fifth second to Syracuse, and the chronometers were compared on the fillet of the Syracuse instrument. The following are the results of the readings of the fillets. At Syracuse the signals were made by Professor Harkness, who used the chronometer Negus 1115. At Malta I used the chronometer Negus 1228.

Date.	Malta fillet. Ch. 1228—Ch. 1115	Syracuse fillet. Ch. 1228—Ch. 1115
1870. h.	m. s.	m. s.
Dec. 13, 0.4	+ 2 4.22	+ 2 4.23
14, 3.3	+ 2 4.44	+ 2 4.47
15, 3.5	+ 2 4.79	+ 2 4.80
16, 1.1	+ 2 5.25	+ 2 5.23

If we denote by c and c' the chronometer times when the signal was sent and received, and by Δc and $\Delta c'$ the corrections of the chronometers, the difference of longitude will be,

$$c - c' + \Delta c - \Delta c' + \varepsilon$$

where ε is the time required for the signal to pass from one station to the other. The present observations do not furnish data for the determination of ε, and its further consideration is omitted. The preceding table gives the values of $c-c'$, and Professor Harkness has furnished the corrections of the chronometer Negus 1115. Collecting the necessary quantities, we have the following results for the difference of longitude between the telegraph office in Malta and our station in Syracuse:

Date.	Corr. ch. 1228.	Corr. ch. 1115.	$c-c'$	$\Delta\lambda$
1870.	h. m. s.	h. m. s.	m. s.	m. s.
December 13	+ 0 57 28.3	+ 1 2 43.2	+ 2 4.2	— 3 10.7
14	+ 0 57 28.5	+ 1 2 44.0	+ 2 4.4	— 3 11.1
15	+ 0 57 28.7	+ 1 2 44.4	+ 2 4.8	— 3 10.9
16	+ 0 57 29.2	+ 1 2 44.7	+ 2 5.2	— 3 10.3

Taking the mean of these results, we have Syracuse east of Malta

$$3^{m}\ 10^{s}.7 \pm 0^{s}.33$$

Omitting all consideration of personal equation in sending the signals, the comparison of the chronometers by means of the telegraph may be considered as exact, since from 164 comparisons it results that the probable error of a single comparison is only $\pm 0^{s}.034$. From the 240 altitudes observed, I find that the prob-

able error of one of my time determinations from the mean of 12 altitudes is $\pm 0^s.27$. On the other hand, the sun was observed at azimuths of about forty degrees only east and west of the meridian, and the differential equations show that an error of $10''$ in the altitude will produce an error of more than one second in the time. From these considerations I estimate the probable error in the difference of longitude to be one-third of a second.

The following is the record of the signals exchanged with Professor Newcomb, who was at Gibraltar. In sending the signals, the observer struck the telegraph key in coincidence with the beat of his chronometer. The signals were received in the following manner: A telegraph-operator watched the bright image of the mirror, and at the instant he observed a motion of the image he struck a key that gave a sharp click, and the time of this click was observed on the chronometer at Gibraltar by Professor Newcomb, and at Malta by myself.

Record of Signals.

MALTA RECORD.				GIBRALTAR RECORD.			
Date.	Chron. 1228.	Chron. 1265.	Difference.	Date.	Chron. 1265.	Chron. 1228.	Difference.
1870.	h. m. s.	h. m. s.	m. s.	1870.	h. m. s.	h. m. s.	m. s.
Dec. 15	4 45 0.6:	4 45 15.0	0 14.4:	Dec. 15	4 52 17.7?	4 52 0	0 17.7?
	45 15.6:	45 30.0	14.4:		52 32.0?	52 15	17.0?
	45 29.5	45 45.0	15.5		52 47.1	52 30	17.1
	45 43.5	46 0.0	16.5		53 2.4	52 45	17.4
	45 58.5	46 15.0	16.5		53 17.4	53 0	17.4
	46 13.5	46 30.0	16.5		53 32.4	53 15	17.4
	46 28.6	46 45.0	16.4		53 47.3	53 30	17.3
	46 43.5	47 0.0	16.5		54 2.5	53 45	17.5
	46 58.6	47 15.0	16.4		54 17.3	54 0	17.3
	47 14.5	47 30.0	15.5		54 32.3	54 15	17.3
	47 28.7	47 45.0	16.3		54 47.3	54 30	17.3
	47 43.5	48 0.0	16.5		55 2.2	54 45	17.2
	47 58.6	48 15.0	16.4		55 17.3	55 0	17.3
	48 13.5	48 30.0	16.5		55 32.4	55 15	17.4
	48 28.6	48 45.0	16.4		55 (47.3)?	55 30	17.3?
	48 43.5	49 0.0	16.5		56 2.5	55 45	17.5
	48 58.5	49 15.0	16.5		56 17.3	56 0	17.3
	49 13.6	49 30.0	16.4		56 32.2	56 15	17.2
	49 29.0	49 45.0	16.0		56 47.4	56 30	17.4
	49 43.5	50 0.0	16.5		57 2.4	56 45	17.4
					57 17.4	57 0	17.4

Mean, (18,) $0^m\ 16^s.32 \pm 0^s.016$ Mean, (18,) $0^m\ 17^s.34 \pm 0^s.006$

Record of Signals—Continued.

MALTA RECORD.				GIBRALTAR RECORD.			
Date.	Chron. 1228.	Chron. 1265.	Difference.	Date.	Chron. 1265.	Chron. 1228.	Difference.
1870.	h. m. s.	h. m. s.	m. s.	1870.	h. m. s.	h. m. s.	m. s.
Dec. 16	11 31 43.2	23 32 0.0	0 16.8	Dec. 16	23 39 (18.7):	11 39 0	0 18.7:
	31 58.0	32 15.0	17.0		39 32.7:	39 15	17.7:
	32 13.0	32 30.0	17.0		39 48.0:	39 30	18.0:
	32 28.0	32 45.0	17.0		40 3.0	39 45	18.0
	32 43.0	33 0.0	17.0		40 17.9:	40 0	17.9:
	32 58.0	33 15.0	17.0		40 33.0	40 15	18.0
	33 13.0	33 30.0	17.0		40 48.1	40 30	18.1
	33 28.1	33 45.0	16.9		41 3.2	40 45	18.2
	33 43.0	34 0.0	17.0		41 18.2	41 0	18.2
	33 57.9	34 15.0	17.1		41 33.2	41 15	18.2
	34 13.0	34 30.0	17.0		41 48.1	41 30	18.1
	34 28.0	34 45.0	17.0		42 3.2	41 45	18.2
	34 43.0	35 0.0	17.0		42 18.0	42 0	18.0
	34 58.2	35 15.0	16.8		42 33.0	42 15	18.0
	35 13.0	35 30.0	17.0		42 48.1	42 30	18.1
	35 28.2	35 45.0	16.8		43 3.2	42 45	18.2
	35 43.1	36 0.0	16.9		43 18.3	43 0	18.3
	35 58.0	36 15.0	17.0		43 33.2	43 15	18.2
	36 13.0	36 30.0	17.0		43 48.1	43 30	18.1
	36 28.2	36 45.0	16.8		44 3.0	43 45	18.0
	36 43.1	37 0.0	16.9		44 18.3	44 0	18.3

Mean, (21,) $0^m\ 16^s.95 \pm 0^s.004$ Mean, (17,) $0^m\ 18^s.13 \pm 0^s.005$

Hence collecting the quantities and using the corrections of chronometer 1265 found by Professor Newcomb, we have the following results:

Date.	Corr. chron. 1228.	Corr. chron. 1265.	$c-c'$	$\Delta\lambda$
1870.	h. m. s.	h. m. s.	m. s.	h. m. s.
Dec. 15	+ 0 57 28.7	— 0 22 16.5	— 0 16.8	- 19 28.4
16	+ 0 57 29.2	— 0 22 15.3	— 0 17.5	1 19 27.0

The determination of time at Gibraltar, on December 16, is from an observation of α Lyræ, while the determination of the 15th is from four observations east and west of the meridian, and is therefore much more trustworthy. I adopt, as the difference of longitude,

$$1^h\ 19^m\ 28^s.4 \pm 0^s.5$$

If we reject the time determination of December 16 at Gibraltar, and assume a constant rate of the chronometer from the 15th to the 19th, the resulting longitude for the 16th will be $1^h\ 19^m\ 28^s.5$; but this process does not, I think, add any weight to the adopted value.

As indicated by the date, the principal part of the preceding report was written immediately after my return home and before I had seen any reports or discussions of the observations in Sicily. A small part of the numerical reductions could not be completed until I had received from Professors Newcomb and Harkness their determinations of local time.

Very respectfully, your obedient servant,

ASAPH HALL,
Professor of Mathematics, U. S. N.

Commodore B. F. SANDS, U. S. N.,
Superintendent U. S. Naval Observatory, Washington, D. C.

REPORT

OF

PROFESSOR WM. HARKNESS, U. S. N.

REPORT OF PROFESSOR WM. HARKNESS, U. S. N.

UNITED STATES NAVAL OBSERVATORY,
Washington, July 13, 1871.

SIR: In accordance with orders from the Navy Department, dated September 16, 1870, I have the honor to submit to you the following report in relation to the astronomical and other observations made by me in connection with the expedition sent to Sicily, by this Observatory, for the purpose of observing the total solar eclipse of the 22d of December last.

I.—INTRODUCTORY.

I left Washington at 9 p. m., October 28, arriving in New York early the following morning. The next three days were spent in arranging details regarding the transportation of the officers and instruments of the party, and at 2 p. m., November 2, Professors Hall, Eastman, and I, sailed from Jersey City in the Cunard steamer China. After an unusually rough and disagreeable passage we arrived safely in Liverpool at 12.30 p. m., November 13. We had with us no less than ten cases of instruments, all of which were most courteously passed through the custom-house without being opened, and without a moment's delay, the authorities saying that they had received orders from the government at London to do so. At 4.45 p. m., November 15, Mr. Alvan Clark, jr., and I, left Liverpool by rail for York, where we spent the night. The next morning we visited the works of Messrs. T. Cooke & Sons, and in the afternoon, by appointment, we met Professor Newcomb at the railway station, and went on with him to Newcastle, and thence to Gateshead, for the purpose of seeing Mr. Newall's gigantic refracting telescope.

While on the train, Professor Newcomb told me that he had selected Gibraltar as the most suitable station from which to make his observations on the eclipse, and that he had made all necessary arrangements with the Astronomer Royal, and with the various telegraph companies whose wires would be required, to exchange longitude signals between Greenwich and that place. He also added that he had informed the managing directors of the submarine cables that it was probable I would be desirous of determining the difference of longitude between Gibraltar and my station at Syracuse, and that they had expressed their entire willingness to grant me the free use of their wires for that purpose if I would make known my wishes to them. Accordingly, when I subsequently passed through London, on my way to Southampton, I called on W. T. Ansell, esq., secretary of the Falmouth, Gibraltar, and Malta Telegraph Company, and he introduced me to Sir James Anderson, managing director of that company, and also of the Anglo-Mediterranean Telegraph Company. These gentlemen treated me with the greatest kindness, evincing a deep interest in our scientific operations, and showing a very strong desire to do all in their power to insure our success. They at once granted me the free use of their cables for the exchange of longitude signals, and furnished me with a letter of introduction to Benjamin Smith, esq., their superintendent at Malta, requesting him to afford me every possible facility. In addition, Sir James Anderson wrote a note to Edward Tombs, esq., secretary of the Mediterranean Extension Telegraph Company, who own the submarine cable between Malta and Sicily, requesting him to grant me the free use of their line, and to furnish me with a letter of introduction to Edward Rosenbusch, esq., their engineer and general superintendent at Malta. This was at once done, and I here desire to offer my thanks to all the above-named gentlemen for their liberality in the cause of science.

At 3 p. m., November 26, our party sailed from Southampton on the Peninsular and Oriental Company's steamer Poonah. During the voyage we touched at Lisbon and Gibraltar, and, after a tolerably pleasant passage, we landed at Malta about 12.30 a. m., December 6. A day or two before arriving at the last mentioned place I became slightly acquainted with one of my fellow passengers, who manifested some interest in our expedition, and who, upon learning that we contemplated using the telegraph cables for longitude purposes, said that he was a director in the company, and that when we got to Malta he would go

on shore and request their superintendent to afford me all possible assistance. He fulfilled his promise at the expense of no little personal inconvenience, for the Poonah reached Malta about half an hour after midnight and departed about daylight the following morning. While on board ship I was ignorant of the gentleman's name, but the superintendent at Malta subsequently told me that it was Mr. Elliot, of the well-known firm of Glass, Elliot & Co., and I here desire to offer him my thanks for his kind interest in the welfare of our expedition.

For the better understanding of what follows, it may be well to give some details as to the ownership and management of the telegraph lines which we proposed to use in determining differences of longitude. The land lines from the Greenwich Observatory to Porthcurno are owned and controlled by the English government, R. S. Culley, esq., being the engineer-in-chief. The submarine cables from Porthcurno to Lisbon, from Lisbon to Gibraltar, and from Gibraltar to Malta, are owned and controlled by the Falmouth, Gibraltar, and Malta Telegraph Company, Sir James Anderson, managing director, Benjamin Smith, esq., superintendent at Malta. The submarine cable from Malta to Modica, in Sicily, is owned and controlled by the Mediterranean Extension Telegraph Company, Edward Tombs, esq., secretary, Edward Rosenbusch, esq., engineer and general superintendent, residing at Malta. The land lines from Modica to Florence are owned by the Italian government, but one of the wires is leased to and controlled and worked by the Anglo-Mediterranean Telegraph Company, Sir James Anderson, managing director, Edward Rosenbusch, esq., engineer and general superintendent. Syracuse is on the line from Modica to Florence. It will thus be seen that in working from Malta to Syracuse we would be using the wires of two different companies, but, as Mr. Rosenbusch is engineer and general superintendent of both, the whole line is under the control of one man.

On the morning of December 6 I made inquiries as to where the offices of the various telegraph companies were to be found in Malta, and was told that they were all in the same building. I also learned that Mr. Smith, local superintendent of the Falmouth, Gibraltar, and Malta line, boarded at Dunsford's Hotel, where I was then staying. Accordingly, I called on him in his room, and presented my letter of introduction. He received me very kindly, and took me to the telegraph office, where, after showing me everything, he placed a clerk and a complete set of the company's apparatus at my disposal, in order that I might become quite familiar with it, as it was very different from the apparatus employed in the American telegraph offices. He assured me that there would not be the least difficulty in exchanging signals between Malta and Gibraltar, and that the only thing necessary was for me to designate what apparatus I wished used and how I would have it handled during the longitude work. This I did, and I have to thank him, and the gentlemen attached to his staff, for their very efficient assistance in carrying out our operations.

I next called on Mr. Rosenbusch, engineer and general superintendent of the Mediterranean Extension Telegraph Company, and of the Anglo-Mediterranean Telegraph Company—a gentleman whom I subsequently learned to know as one of the kindest and best friends that it was my good fortune to meet during my absence abroad. He told me that, so far as the Malta end of the line was concerned, there would not be any difficulty, for he was ready to do anything that I might deem necessary; but that at Syracuse the case was different, because the wire controlled by his company is a through one, and their contract with the Italian government only permits them to have offices at Modica and Florence. Hence, as all telegraph offices in Italy are controlled by the government, it would be necessary to secure its assent before it would be possible for us to use the company's wire between Modica and Syracuse. In order to procure this assent, Mr. Rosenbusch at once telegraphed to Florence to Commendatore Ernest d'Amico, director general of the Royal Italian telegraph lines, and in twenty-four hours I had the satisfaction of learning that Signor Emmanuele Astor, sub-inspector of the Royal Italian telegraphs, had been ordered to proceed to the telegraph office at Syracuse, and there to give us every possible facility for exchanging longitude signals with Malta. Moreover, as Signor Astor and the other telegraph officials whom I would meet at Syracuse spoke only Italian, a language of which I know very little, Mr. Rosenbusch kindly volunteered to accompany me to overcome all difficulties that might arise on that score, and to give me the benefit of his influence with various government officers at Syracuse, all of whom were his personal friends.

I was now ready to proceed to Syracuse, but, as the steamer was not advertised to sail until Friday evening, I amused myself during the interval of waiting by visiting the various objects of interest in and around Malta. And here I must not omit to mention that my pleasure in so doing was greatly enhanced by numerous kind attentions shown me by our consul, Lyell T. Adams, esq., and our vice-consul, William John Stevens, esq.

The Malta channel is often very rough, and at such times the small steamers of the Florio line, which carry the mails between Malta and Sicily, do not venture to cross. Unfortunately for us, Wednesday, Thursday, and Friday were quite stormy, and when we went to bed on Saturday night the steamer had not yet arrived.* At 6 o'clock on Sunday morning, December 11, I was awakened by the joyful tidings that the mail-steamer had just come in, and that she would depart for Syracuse as soon as her freight could be got on shore. I dressed rapidly, but there was much delay in getting breakfast, and I was afraid the steamer would be off without us. The fear was groundless. I, in company with Professor Eastman and Mr. Rosenbusch, was on board at 9 o'clock, and she did not sail till a quarter before 11. She was the Corriére Siciliano—a nice little boat—and after a very pleasant passage of about eight hours, she landed us in Syracuse at 7 o'clock in the evening. Professor Hall, in company with Dr. C. H. F. Peters, of the United States Coast Survey Eclipse Expedition, had gone over to Sicily on December 6, and had secured on our behalf the kind offices of our consular agent, N. Stella, esq., and of the English consul, Nicolo Bisani, esq. These gentlemen met us at the custom-house, and, thanks to them and to Mr. Rosenbusch, our personal baggage was passed without being opened, and we went at once to the Albergo della Vittoria, where we were furnished with pleasant quarters, and made very comfortable during our stay in Syracuse.

About 8 o'clock the same evening Mr. Rosenbusch and I visited the telegraph office in Syracuse, where we met Signor Emmanuele Astor, sub-inspector of Royal Italian telegraphs, Signor Raffaele Spagna, superintendent of the Syracuse office, and Signor Mario Lanza, assistant in the Syracuse office. We found these gentlemen willing to do everything in their power for us, and after a little consultation all the details relative to the exchange of longitude signals were satisfactorily arranged.

At 12.30 p. m., December 12, Professor Eastman, Mr. Rosenbusch, and I, made an official visit to Chevalier Achille Basile, royal prefect of the province of Syracuse, who received us most kindly, and said that it would afford him the greatest pleasure to be of service to us while we remained in Syracuse. That same afternoon he had the boxes containing our instruments passed through the custom-house without being opened, and delivered to us at our hotel.

II.—SITE OF OBSERVING-STATION.

After making a thorough reconnaissance of the whole city of Syracuse, the place which seemed to me best adapted for our observing-station was the bastion situated on the north side of the Prima Porta Terra. The surface of the ground there was 52 feet above the sea-level, and, with the exception of an arc of 55°, included between the true bearings S. 5° W. and S. 50° E., the horizon was perfectly unobstructed. The obstructions in the arc in question consisted of the buildings in the more elevated part of the city, but they nowhere rose so high as to interfere with astronomical observations.

I accordingly wrote a note to the Prefect, requesting to be permitted to occupy the bastion as our observing-station, and asking for the loan of two tents to shelter our instruments. He replied that the bastion was at our service, and, if we wished, he would also give us the use of a large empty store-house in it. As our instruments were all so portable that it was not necessary to leave them in position during the night, the store-house was much better adapted to our wants than tents would have been, and I gladly accepted it. At 9 a. m., December 13, the Prefect sent an officer of his staff to take us to the bastion, to put us in possession of the store-house, and to inform us that he would have a military guard detailed, whose duty it would be to see that no injury came to our property. That same morning we had our boxes sent from the hotel to the store-house, got our instruments unpacked, and began observing. During the forenoon the guard arrived, and from that time till we left Syracuse there was always a sentinel at the door of the store-house.

On the evening of December 16, Messrs. A. Brothers and Alfred Fryer, of the English Eclipse Expedition, arrived in Syracuse; and on the morning of December 21, Mr. George Griffith, also of the English expedition, arrived. By our invitation, and with the consent of the Prefect, these gentlemen occupied the bastion and store-house in common with us as an observing-station.

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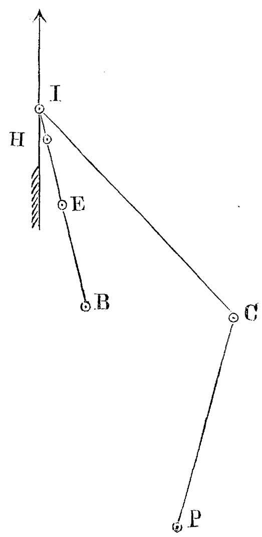
* There are often very great delays, occasioned by rough weather, in getting from Malta to Sicily, and as there was every appearance that we were to be the victims of one of them, at a time when it was very important that we should get speedily to Syracuse, in order to determine our longitude, on Friday Vice-Admiral Sir Hastings Reginald Yelverton, K. C. B., commander-in-chief of H. B. M. Mediterranean squadron, sent a message to us through our consul, saying that if the mail-steamer did not arrive by Monday, he would on that day send us to Syracuse in his own dispatch-vessel, the Psyche. Such generosity should not be passed over in silence, and it gives me pleasure to offer the thanks of the party to Vice-Admiral Yelverton.

Figure 1, drawn on a scale of 1 to 2500, shows the exact positions occupied by the instruments of the different observers in the bastion. The point P is directly over the key-stone in the east, or city, face of the arch over the Prima Porta Terra. 1 is a stone gun-platform, which was situated near the northern end of the western face of the bastion. On it were made the observations for time and latitude, and on the day of the eclipse Professor Hall's telescope stood upon it. H and E indicate, respectively, the position of my telescope and of that of Professor Eastman. B is the position of Mr. Brothers's photographic telescope. Mr. Griffith's telescope stood between E and B. The following are the measured distances, corrected for error in length of tape-line:

Fig. 1.



1 to C = 316.2 feet = 96.38 meters.
C to P = 236.4 feet = 72.05 meters.

1 to H = 34 feet = 10.4 meters.
1 to E = 110 feet = 33.5 meters.
1 to B = 226 feet = 68.9 meters.

The angles at 1 were

B and Belvedere Tower = 125° C and Belvedere Tower = 154° 35′

Angle 1 C P = 121° 30′

Hence I find

Distance from 1 to P = 483.8 feet = 147.5 meters.

Angle C 1 P = 24° 37′ 35″ Angle C P 1 = 33° 52′ 25″

The true bearing from 1 to the Belvedere Tower was N. 68° 23′ 28″ W. Combining this with the angles given above, I find for the true bearing from 1 to P, S. 18° 20′ 53″ E.

The instruments were used in the open air, and were carried back into the store-house whenever the observers were done with them for the time being. No shelter whatever was built for them.

III.—DESCRIPTION OF INSTRUMENTS.

With the exception of the chronometers, the instruments employed were all my own private property. As they were mostly the same ones that I used at Des Moines, in observing the eclipse of August 7, 1869, all of which are fully described in my report on that eclipse, Appendix II to the Washington Observations for 1867, pp. 26–32, it will only be necessary to give a list of them here, and to mention such changes as were made in them for the present eclipse.

An Achromatic Telescope of 43.58 inches focal length, and 3.01 inches clear aperture, made by Alvan Clark & Sons, of Cambridgeport, Massachusetts. This instrument is provided with a large battery of eye-pieces, ranging in power from 27.2 to 400 diameters. It is equatorially mounted on a very firm, portable tripod stand, which can be adjusted to any latitude, except very low ones, and has a slow motion by which it may be moved through a few degrees in azimuth. The polar and declination axes are both provided with clamp screws; but there are neither divided circles nor tangent screws.

The finder which was originally furnished with this telescope, and which was used at Des Moines, had a clear aperture of only 0.68 of an inch. This seemed to me too small; so I discarded it, and substituted another having an achromatic object-glass of 8.87 inches focus and 1.20 inches clear aperture. It is provided with a direct eye-piece magnifying 10.0 diameters, and a diagonal one magnifying 6.3 diameters. Each of them has a field of view 3° 15′ in diameter. The pointing apparatus is the adjustable needle-point which was used at Des Moines.

A Single-Prism Spectroscope, having the following optical constants:

Small telescope:

Focal distance of object-glass	6.55 inches.
Clear aperture of object-glass	0.86 inch.
Diameter of field of view	5° 33′
Magnifying power	5.71 diameters.

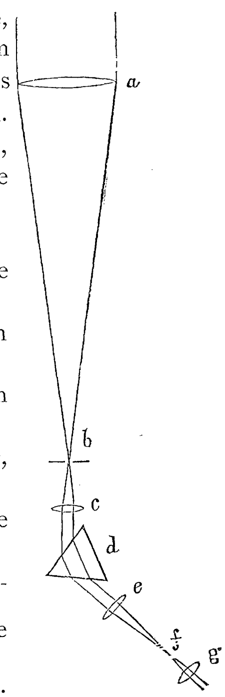
Collimating lens for slit:

Focal distance	6.52 inches.
Clear aperture	0.82 inch.

Collimating lens for scale:	
Focal distance	4.17 inches.
Clear aperture	0.82 inch.
Prism:	
Refracting angle	60° 8′
Minimum deviation of line D	47° 44′
Refractive index	1.613
Density	3.532

It is often desirable to have a formula which will enable us to calculate how much an object is magnified when seen in the field of view of a spectroscope attached to a telscope. In order to obtain such a formula, let us consider a beam of perfectly homogeneous light —that is, light of but a single wave length—falling upon the object-glass of a telescope, *a*, Figure 2. It will be brought to a focus at *b*, and will there form an image between the jaws of the slit situated at that point. Then, passing through the collimating lens *c*, whose principal focus is at *b*, the rays composing the beam will be rendered parallel. Next, falling upon the prism *d*, the beam will be refracted and thrown upon the lens *e*, which will bring it to a focus at *f*, where a second image will be formed. This image will be viewed through the eye-lens *g*.

Fig. 2.



Now let

m = number of diameters which the image seen in the field of view of the spectroscope-telescope is magnified.

F = focal length of object-glass of main telescope—that is, of the lens a in Fig. 2.

c = focal length of the collimator of the spectroscope—that is, of the lens c in Fig. 2.

F' = focal length of the object-glass of the spectroscope-telescope—that is, of the lens e in Fig. 2.

f = focal length of the eye-piece of the spectroscope-telescope—that is, of the lens g in Fig. 2.

If the image formed at f were of exactly the same size as that formed at b, the magnifying power would evidently be equal to $\frac{F}{f}$; and the actual magnifying power will be greater or less than $\frac{F}{f}$, according as the image at f is larger or smaller than that at b. As the beam of light is supposed to contain rays of only a single wave length, the prism d can produce no effect upon it except that of bending it out of a straight path, and the size of the image at b must be to the size of the image at f as the focal length of the lens c is to the focal length of the lens e. The required formula will therefore be

$$m = \frac{F}{f} \times \frac{F'}{c}$$

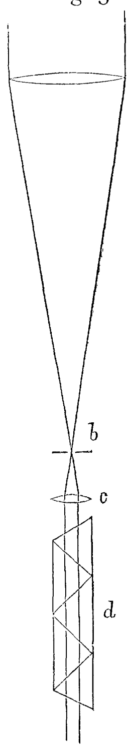
As it is desirable to avoid using the measured focal lengths of lenses whenever possible, this formula may be written

$$m = \frac{F}{c} \times \frac{F'}{f}$$

where $\frac{F'}{f}$ is the magnifying power of the spectroscope-telescope—a quantity which can be at once determined by means of a Ramsden's dynameter. Applying this formula to the case of the spectroscope, whose optical constants are given above, used in connection with the telescope of 43.58 inches focus, we find

$$m = \frac{43.58}{6.52} \times 5.71 = 38$$

Fig. 3.



If, instead of an ordinary spectroscope, one of Mr. Browning's small direct-vision instruments is employed, the formula given above will require to be somewhat modified. The optical arrangement will then be that shown in Fig. 3. The light falling on the object-glass *a* will be brought to a focus at *b*, and will there form an image between the jaws of the slit situated at that point. Then, passing through the lens *c*, whose principal focus is at *b*, the rays composing the beam will be rendered parallel, and after traversing the direct-vision prism *d* they will be viewed by the eye of the observer. Adopting the same notation as before, in this case we shall evidently have

$$m = \frac{F}{c}$$

An Arago Polariscope of double rotation, consisting of a brass tube 1.07 inches in diameter and 9.4 inches long, one end of which contains two plates of quartz, each cut perpendicularly to the axis, of the same thickness, and standing side by side, but one of them possessing right-handed rotation, the other left-handed rotation. The other end of the tube contains a double-image prism, and a convex lens of 9.0 inches focal length, which produces distinct vision of the compound plate of quartz to an eye placed at the double-image prism. This instrument gives images of complementary colors when polarized light is present.

An Arago Polariscope, consisting of a plate of selenite, and a double-image prism, giving images of complementary colors when polarized light is present. This instrument is fitted to one of the eye pieces of the 43-inch telescope.

A Savart Polariscope, consisting of a plate of quartz cut obliquely to the axis, and a plate of tourmaline, giving Savart's bands when polarized light is present. This instrument is also fitted to one of the eye pieces of the 43-inch telescope.

A Sextant, made by Stackpole & Brother, of New York, from my own designs, marked No. 937, of six inches radius, divided on platinum, and reading to ten seconds, having a telescope of 5.32 inches focus and 0.89 inch clear aperture, provided with eye-pieces magnifying respectively 2.75, 5.66, and 8.88 diameters. Attached to the index bar is a finding level, which saves much time and trouble in picking up the reflected image of an object.

Owing to my severe and protracted illness in Scotland, I have not had time to make any investigation of the error of eccentricity of this sextant since my return. In reducing the observations, I have therefore employed the errors determined in 1869, which are given in the following table; ω is the reading on the arc and E the corresponding correction for eccentricity.

ω	E	ω	E	ω	E
°	″	°	″	°	″
0	0.0	50	+ 8.1	100	+19.9
10	+ 1.2	60	10.2	110	22.6
20	2.6	70	12.5	120	25.3
30	4.3	80	14.9	130	28.0
40	+ 6.1	90	+17.4	140	+30.8

A Mercurial Artificial Horizon, marked Ha. 1, having a folding roof, and an iron trough three inches wide by five inches long. A very careful investigation of the errors of this horizon, made by reflecting the pole star from it, and observing the reflected image with the mural circle, showed that the maximum error which can be produced in the mean of a set of observed double altitudes by omitting to reverse the roof, is only 0″.24.

A Pocket Sextant, made by Stackpole & Brother, of New York, marked No. 346, having an arc of two and a quarter inches radius, and reading to single minutes.

A Black Glass Artificial Horizon, four inches long by three inches wide, provided with a very sensitive level and an inclined plane, with black glass surfaces, which can be set on the horizon for the purpose of measuring zenith distances ranging between seventy and one hundred and thirty degrees.

A Prismatic Compass, having colored glasses for the purpose of observing the sun, and a needle three inches long, carrying a metal circle three inches in diameter, divided to single degrees.

A Small Reflecting Level.

Two Pocket-Compasses.

A fifty-foot Chesterman's Metallic Tape-Measure, which had been carefully tested by a standard, and was found to be too long in the proportion of 100.134 to 100.000.

A Binocular Field-Glass, magnifying 5.50 diameters, and having a field of view of 2° 50′.

A Pocket Achromatic Telescope, having an object-glass made by Alvan Clark & Sons, of 9.99 inches focal length and 1.09 inches clear aperture, with a terrestrial eye-piece magnifying 19.2 diameters and a field of view of 1° 48′; provided with a screw clip for holding it steadily while observing.

A set of three Colored Glasses, mounted in a german-silver frame, for the pocket.

A Pocket Aneroid Barometer, 1.9 inches in diameter, made by L. Casella, of London, and marked No. 1128. It has a scale extending from 23 to 31 inches, graduated to 0.05 of an inch, and is compensated for temperature.

Two Pocket Thermometers.

A Rain Gauge, having a receiving surface 2.788 inches in diameter, and a glass measure for the same, holding fifty cubic centimeters and graduated to half a cubic centimeter—each half cubic centimeter being equal to 0.005 of an inch of rain.

A set of Drawing Instruments.

We had with us, for the use of the party, four excellent mean time box chronometers, made by T. S. & J. D. Negus, of New York. They were marked numbers 1115, 1228, 1256, and 1340.

I had also a number of books and other articles, a full list of which is given in Addendum C to this report.

IV.—PROBABLE ERROR OF OBSERVATIONS MADE WITH A SEXTANT.

As the sextant is a very portable and convenient instrument, and is much used for scientific purposes, it seems worth while to determine carefully what degree of accuracy may be expected in observations made with it. For that purpose I have collected in the following table nearly all the data which can be derived from the work of the officers of this Observatory in connection with the total solar eclipses of August, 1869, and December, 1870. It is to be understood that each set of altitudes consists of six readings, the object being observed in a mercurial artificial horizon, with a sextant whose telescope magnifies about nine diameters, and whose vernier reads to ten seconds; and further, that with each set of six altitudes, the index correction has been determined by six readings made for that purpose.

TABLE I.

Observer.	Station.	Object of Observations.	Object Observed.	No. of sets of Altitudes.	Probable Error of Time.	Probable Error of Altitude.
					s.	″
Harkness . .	Des Moines. . .	Latitude .	Sun . .	16		±3.89
Hall	Siberia	Latitude .	Sun . .	13		3.16
Rogers . . .	Siberia	Latitude .	Sun . .	6		2.47
Harkness . .	Syracuse. . . .	Latitude .	Sun . .	11		2.98
Hall	Syracuse and Malta	Latitude .	Sun . .	11		3.12
Harkness . .	Des Moines. . .	Time . .	Sun . .	20	±0.145	1.63
Harkness . .	Syracuse. . . .	Time . .	Sun . .	38	.321	2.59
Hall	Syracuse and Malta	Time . .	Sun . .	40	.381	3.05
Harkness . .	Des Moines. . .	Latitude .	Polaris .	3		6.85
Harkness . .	Syracuse. . . .	Latitude .	Polaris .	6		8.29
Hall	Syracuse. . . .	Latitude .	Polaris .	3		3.45

In the case of the time observations given in the above table, the average azimuths were as follows, namely: at Des Moines, 90°; at Syracuse, 42° 27′; at Syracuse and Malta, 42°.

The observations of the sun give the following results: 57 sets of altitudes, observed to determine latitude, give for the probable error of the mean of a single set $\pm$ 3″.25; and 98 sets of altitudes, observed to determine local time, give for the probable error of the mean of a single set $\pm$ 2″.58. The arithmetical mean of these two values is $\pm$ 2″.92. I therefore adopt as the probable error of the mean of a set of six altitudes of the sun $\pm$ 3″.00 — a result which rests on no less than 930 observed altitudes.

The number of observations on stars, contained in Table I, is not sufficiently great to render it possible to determine a reliable probable error from them, but it is evident that the probable error of an observation of a star is greater than that of an observation of the sun.

To an officer in the field desirous of determining local time, it is a matter of importance to know precisely at what hour angle it will be most advantageous to observe. I have therefore constructed the following table, which will enable a person in any latitude, and with the sun at any declination, to ascertain almost at a glance the altitude, azimuth, and hour angle when the sun is in the most favorable position for time observations. The numerical computations for the table have been made by Mr. Ormond Stone, and in constructing it I have assumed that the altitudes must be confined between sixteen and seventy degrees, these being about the limits of convenient observation with a sextant. δ is the sun's declination.

TABLE II.

Latitude and Declination of the same name.

Latitude.	δ = 23°.5 Altitude.	δ = 23°.5 Azimuth.	δ = 23°.5 Hour Angle.	δ = 20°.0 Altitude.	δ = 20°.0 Azimuth.	δ = 20°.0 Hour Angle.	δ = 15°.0 Altitude.	δ = 15°.0 Azimuth.	δ = 15°.0 Hour Angle.
°	°	°	h.m.	°	°	h.m.	°	°	h.m.
0	16.0	115.5	4 50	16.0	110.8	4 52	16.0	105.6	4 54
5	16.0	113.0	4 58	16.0	109.4	4 59	19.7	104.2	4 44
10	25.8	111.4	4 24	30.5	107.4	4 4	42.1	101.3	3 16
15	40.5	108.3	3 28	49.2	103.3	3 10	70.0	92.7	1 23
20	59.1	102.6	2 13	70.0	93.7	1 25	49.2	90.0	2 50
25	70.7	90.0	1 24	54.0	90.0	2 35	37.8	90.0	3 40
30	52.8	90.0	2 44	43.2	90.0	3 24	31.2	90.0	4 9
35	44.0	90.0	3 26	36.7	90.0	3 55	26.8	90.0	4 30
40	38.4	90.0	3 55	32.2	90.0	4 17	23.7	90.0	4 46
45	34.3	90.0	4 9	29.0	90.0	4 35	21.5	90.0	4 58
50	31.3	90.0	4 34	26.5	90.0	4 49	19.7	90.0	5 8
55	29.1	90.0	4 49	24.7	90.0	5 1	18.6	90.0	5 17
60	27.4	90.0	5 2	23.3	90.0	5 12	17.6	90.0	5 24
65	26.1	90.0	5 13	22.7	90.0	5 21	16.6	90.0	5 31
70	25.1	90.0	5 24	21.3	90.0	5 30	16.0	90.0	5 38
75	24.4	90.0	5 33	20.7	90.0	5 38	16.0	88.3	5 36
80	23.9	90.0	5 42	20.3	90.0	5 45	16.0	85.7	5 32
85	23.6	90.0	5 51	20.1	90.0	5 53	16.0	79.2	5 11

Latitude.	δ = 10°.0 Altitude.	δ = 10°.0 Azimuth.	δ = 10°.0 Hour Angle.	δ = 5°.0 Altitude.	δ = 5°.0 Azimuth.	δ = 5°.0 Hour Angle.	Declination, 0°.0 Altitude.	Declination, 0°.0 Azimuth.	Declination, 0°.0 Hour Angle.
°	°	°	h.m.	°	°	h.m.	°	°	h.m.
0	16.0	100.4	4 55	16.0	95.2	4 56	70.0	90.0	1 20
5	30.1	98.6	4 1	70.0	90.8	1 20	16.0	88.6	4 56
10	70.0	91.8	1 22	30.1	90.0	4 1	16.0	87.1	4 55
15	42.1	90.0	3 16	19.7	90.0	4 44	16.0	85.6	4 54
20	30.5	90.0	4 4	16.0	89.6	4 59	16.0	84.1	4 52
25	24.3	90.0	4 31	16.0	88.1	4 59	16.0	82.3	4 49
30	20.3	90.0	4 49	16.0	86.5	4 57	16.0	80.5	4 46
35	17.6	90.0	5 2	16.0	84.8	4 56	16.0	78.6	4 41
40	16.0	89.7	5 10	16.0	82.9	4 53	16.0	76.2	4 36
45	16.0	88.4	5 9	16.0	80.9	4 49	16.0	73.3	4 28
50	16.0	86.6	5 8	16.0	78.5	4 44	16.0	70.1	4 18
55	16.0	84.6	5 5	16.0	75.5	4 36	16.0	65.8	4 5
60	16.0	82.2	5 1	16.0	71.6	4 25	16.0	60.2	3 46
65	16.0	79.3	4 54	16.0	66.4	4 9	16.0	52.1	3 17
70	16.0	74.9	4 42	16.0	58.5	3 41	16.0	38.0	2 25
75	16.0	68.1	4 20	16.0	44.0	2 48			
80	16.0	54.2	3 29						
85									

Latitude and Declination of different name.

δ = 5°.0 Altitude.	δ = 5°.0 Azimuth.	δ = 5°.0 Hour Angle.	δ = 10°.0 Altitude.	δ = 10°.0 Azimuth.	δ = 10°.0 Hour Angle.	δ = 15°.0 Altitude.	δ = 15°.0 Azimuth.	δ = 15°.0 Hour Angle.	δ = 20°.0 Altitude.	δ = 20°.0 Azimuth.	δ = 20°.0 Hour Angle.	δ = 23°.5 Altitude.	δ = 23°.5 Azimuth.	δ = 23°.5 Hour Angle.	Latitude.
°	°	h.m.	°	°	h.m.	°	°	h.m.	°	°	h.m.	°	°	h.m.	°
16.0	84.8	4 56	16.0	79.6	4 55	16.0	74.4	4 54	16.0	69.2	4 52	16.0	64.5	4 50	0
16.0	83.4	4 54	16.0	78.2	4 51	16.0	72.8	4 48	16.0	67.6	4 44	16.0	63.8	4 40	5
16.0	81.9	4 51	16.0	76.6	4 46	16.0	71.1	4 41	16.0	65.7	4 35	16.0	61.9	4 30	10
16.0	80.2	4 48	16.0	74.7	4 41	16.0	69.2	4 34	16.0	63.6	4 26	16.0	59.6	4 19	15
16.0	78.4	4 44	16.0	72.8	4 35	16.0	67.0	4 26	16.0	61.1	4 14	16.0	56.9	4 6	20
16.0	76.5	4 39	16.0	70.6	4 28	16.0	64.5	4 16	16.0	58.3	4 2	16.0	53.8	3 51	25
16.0	74.3	4 33	16.0	68.1	4 20	16.0	61.5	4 4	16.0	54.8	3 47	16.0	49.9	3 33	30
16.0	71.8	4 26	16.0	65.1	4 9	16.0	58.0	3 50	16.0	50.6	3 29	16.0	45.0	3 11	35
16.0	69.0	4 17	16.0	61.6	3 56	16.0	53.7	3 33	16.0	45.2	3 6	16.0	38.6	2 43	40
16.0	65.5	4 6	16.0	57.2	3 40	16.0	48.1	3 11	16.0	37.8	2 35	16.0	29.2	2 3	45
16.0	61.1	3 51	16.0	51.5	3 19	16.0	40.5	2 41	16.0	22.5	1 32	16.0	9.2	0 39	50
16.0	55.4	3 30	16.0	43.6	2 49	16.0	28.5	1 53							55
16.0	47.3	3 1	16.0	31.0	2 0										60
16.0	33.9	2 16													65
															70
															75
															80
															85

If we let

$d\zeta$ = probable error of an observed zenith distance, expressed in seconds of arc,
dt = probable error of the corresponding hour angle, expressed in seconds of time,
φ = latitude of the place of observation,
A = azimuth of the sun at the time of observation,

then we shall have

$$dt = \frac{d\zeta}{15 \cos \varphi \, . \, \sin A}$$

by means of which formula I have computed Table III. The azimuths have been taken from Table II, and $d\zeta$ has been assumed equal to $\pm$ 3″.00.

TABLE III.—*Probable Error of a Chronometer Correction determined from the mean of Six Double Altitudes of the Sun, observed, when in the most favorable position, by means of a Sextant.*

Latitude.	Latitude and Declination of the same name.					Declination, 0°	Latitude and Declination of different name.					Latitude.
	$\delta = 23^\circ.5$	$\delta = 20^\circ$	$\delta = 15^\circ$	$\delta = 10^\circ$	$\delta = 5^\circ$		$\delta = 5^\circ$	$\delta = 10^\circ$	$\delta \;\; 15^\circ$	$\delta = 20^\circ$	$\delta = 23^\circ.5$	
°	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	°
0	±0.22	±0.21	±0.21	±0.20	±0.20	±0.20	±0.20	±0.20	±0.21	±0.21	±0.22	0
5	.22	.21	.21	.20	.20	.20	.20	.21	.21	.22	.22	5
10	.22	.21	.21	.20	.20	.20	.21	.21	.21	.22	.23	10
15	.22	.21	.21	.21	.21	.21	.21	.21	.22	.23	.24	15
20	.22	.21	.21	.21	.21	.21	.22	.22	.23	.24	.25	20
25	.22	.22	.22	.22	.22	.22	.23	.23	.24	.26	.27	25
30	.23	.23	.23	.23	.23	.23	.24	.25	.26	.28	.30	30
35	.24	.24	.24	.24	.24	.25	.26	.27	.29	.32	.35	35
40	.26	.26	.26	.26	.26	.27	.28	.30	.32	.37	.42	40
45	.28	.28	.28	.28	.29	.30	.31	.34	.38	.46	0.58	45
50	.31	.31	.31	.31	.32	.33	.36	.40	.48	0.81	1.94	50
55	.35	.35	.35	.35	.36	.38	.42	.51	0.73			55
60	.40	.40	.40	.40	.42	.46	.54	0.78				60
65	.47	.47	.47	.48	.52	.60	0.85					65
70	.58	.58	.58	.61	0.69	0.95						70
75	0.77	0.77	0.77	0.83	1.11							75
80	1.15	1.15	1.15	1.42								80
85	2.30	2.30	2.34									85

Putting

r = probable error of a single set of observations,
r_0 = probable error of arithmetical mean of m sets of observations,
c = constant error affecting each set of observations,
p_m = weight of the arithmetical mean of m sets of observations,

we have

$$r_0 = \frac{r}{p_m}$$

It is usual to assume p_m proportional to $\sqrt{m}$; but, inasmuch as experience shows that in the case of every instrument there is a limit beyond which increasing the number of observations adds almost nothing to the accuracy of the final result, I have preferred to follow the principles laid down by Dr. B. A. Gould

in his discussion of the weights and mean errors of the observations of Mars and Venus made during the years 1849–'52, and employed to determine the solar parallax.* In accordance with these principles, putting

$$c = ar \qquad\qquad b = \frac{1}{a^2} = \frac{r^2}{c^2}$$

we find

$$p = m \cdot \frac{b + 1}{m + b}$$

b depends solely upon the quality of the observations employed, and increases in the ratio of their accuracy, so that b^2 sets of observations are worth b times as much as one set, but no finite number of sets can ever be worth $b + 1$ times as much as one set. The numerical value of b is arbitrary. For sextant work the observations which I have been able to examine seem to indicate as the most probable value, $b = 3$. That I have adopted, and by substituting it in the formula for p_m, given above, I have computed Table IV.

TABLE IV.—*Weights as Functions of the Number of Observations.*

No.	Weight.	No.	Weight.	No.	Weight.	No.	Weight.	No.	Weight.
1	1.00	6	2.67	12	3.20	25	3.57	50	3.77
2	1.60	7	2.80	14	3.29	30	3.64	60	3.81
3	2.00	8	2.91	16	3.37	35	3.68	75	3.85
4	2.29	9	3.00	18	3.43	40	3.72	100	3.88
5	2.50	10	3.08	20	3.48	45	3.75	1000	3.99

By means of the weights contained in Table IV, I have computed Table V, which, with the argument "Probable error of a single set of observations" gives the probable error of the arithmetical mean of any number of sets of observations not greater than 100. The figures placed at the head of each column indicate the number of sets of observations to the mean of which the probable errors contained in that column apply. The table is used by entering the column headed "1" with the known probable error of a single set of observations; then, on the same line with this known probable error, in the column headed "2" will be found the probable error of the arithmetical mean of two sets of observations; in the column headed "3," the probable error of the arithmetical mean of three sets of observations; and so on for each of the other columns.

* United States Naval Astronomical Expedition to the Southern Hemisphere, Vol. III, page cclii.

TABLE V.—*Probable Error of the Mean of several sets of Sextant Observations, expressed as a Function of the number of sets, there being Six Observed Altitudes in each set.*

1	2	3	4	5	6	7	8	9	10	20	50	100
″	″	″	″	″	″	″	″	″	″	″	″	″
±3.00	±1.87	±1.50	±1.31	±1.20	±1.12	±1.07	±1.03	±1.00	±0.97	±0.86	±0.80	±0.77
s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
0.20	0.12	0.10	0.09	0.08	0.08	0.07	0.07	0.07	0.06	0.06	0.05	0.05
.22	.14	.11	.10	.09	.08	.08	.08	.07	.07	.06	.06	.06
.24	.15	.12	.10	.10	.09	.09	.08	.08	.08	.07	.06	.06
.26	.16	.13	.11	.10	.10	.09	.09	.09	.08	.07	.07	.07
.28	.18	.14	.12	.11	.10	.10	.10	.09	.09	.08	.07	.07
.30	.19	.15	.13	.12	.11	.11	.10	.10	.10	.09	.08	.08
.32	.20	.16	.14	.13	.12	.11	.11	.11	.10	.09	.08	.08
.34	.21	.17	.15	.14	.13	.12	.12	.11	.11	.10	.09	.09
.36	.22	.18	.16	.14	.13	.13	.12	.12	.12	.10	.10	.09
.38	.24	.19	.17	.15	.14	.14	.13	.13	.12	.11	.10	.10
.40	.25	.20	.17	.16	.15	.14	.14	.13	.13	.12	.11	.10
.45	.28	.22	.20	.18	.17	.16	.15	.15	.15	.13	.12	.12
.50	.31	.25	.22	.20	.19	.18	.17	.17	.16	.14	.13	.13
.60	.38	.30	.26	.24	.22	.21	.21	.20	.19	.17	.16	.15
0.80	.50	.40	.35	.32	.30	.29	.27	.27	.26	.23	.21	.21
1.00	.62	.50	.44	.40	.37	.36	.34	.33	.32	.29	.27	.26
1.50	0.94	0.75	.66	.60	.56	.54	.52	.50	.49	.43	.40	.39
2.00	1.25	1.00	0.87	0.80	.75	.71	.69	.67	.65	.57	.53	.52
2.50	1.56	1.25	1.09	1.00	0.94	0.89	0.86	0.83	0.81	0.72	0.66	0.64

In order to meet cases where more or less than six altitudes have been observed in each set, I have made use of the weights contained in Table IV to compute Table VI, which, with the argument "Probable error of the mean of six altitudes" gives the probable error of the mean of various numbers of altitudes, ranging between 1 and 20. The arrangement of this table is similar to that of Table V.

TABLE VI.—*Probable Error of the Mean of a set of Sextant Observations, expressed as a Function of the number of Observed Altitudes.*

6	1	2	3	4	5	8	10	12	14	16	18	20
″	″	″	″	″	″	″	′	″	″	″	″	″
± 3.00	± 8.01	± 5.01	± 3.99	± 3.48	± 3.21	± 2.75	± 2.60	± 2.50	± 2.43	± 2.37	± 2.33	± 2.30
s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.	s.
0.20	0.53	0.33	0.27	0.23	0.21	0.18	0.17	0.17	0.16	0.16	0.16	0.15
.22	.59	.37	.29	.26	.24	.20	.19	.18	.18	.17	.17	.17
.24	.64	.40	.32	.28	.26	.22	.21	.20	.19	.19	.19	.18
.26	.69	.43	.35	.30	.28	.24	.23	.22	.21	.21	.20	.20
.28	.75	.47	.37	.32	.30	.26	.24	.23	.23	.22	.22	.21
.30	.80	.50	.40	.35	.32	.27	.26	.25	.24	.24	.23	.23
.32	.85	.53	.43	.37	.34	.29	.28	.27	.26	.25	.25	.25
.34	.91	.57	.45	.39	.36	.31	.29	.28	.28	.27	.26	.26
.36	0.96	.60	.48	.42	.39	.33	.31	.30	.29	.28	.28	.28
.38	1.01	.63	.51	.44	.41	.35	.33	.32	.31	.30	.30	.29
.40	.07	.67	.53	.46	.43	.37	.35	.33	.32	.32	.31	.31
.45	.20	.75	.60	.52	.48	.41	.39	.38	.36	.36	.35	.34
.50	.33	0.84	.66	.58	.54	.46	.43	.42	.41	.40	.39	.38
.60	1.60	1.00	0.80	.70	.64	.55	.52	.50	.49	.47	.47	.46
0.80	2.14	.34	1.06	0.93	0.86	.73	.69	.67	.65	.63	.62	.61
1.00	2.67	1.67	1.33	1.16	1.07	0.92	0.87	0.83	0.81	0.79	0.78	0.77
1.50	4.00	2.50	2.00	1.74	1.60	1.37	1.30	1.25	1.22	1.19	1.17	1.15
2.00	5.34	3.34	2.66	2.32	2.14	1.83	1.73	1.67	1.62	.58	.56	.53
2.50	6.68	4.18	3.32	2.90	2.68	2.29	2.16	2.08	2.03	1.98	1.94	1.92

Of course these tables apply only to the probable accidental errors, and afford no clew whatever to the constant errors. In order to get rid of the latter a special investigation must be made for the instrument employed, or else care must be taken to make all the observations in pairs, upon objects at about equal altitudes on each side of the zenith. Table VI shows that almost nothing is gained by observing more than six altitudes in each set, and Table V shows that there is very little use in making more than ten sets of observations for any one object. That is, supposing the constant errors to be entirely eliminated, a latitude depending upon the mean of ten good sets of meridian altitudes is as trustworthy as any that can be found from observations with a sextant; and a chronometer correction depending upon the mean of three sets of altitudes observed to the east, and an equal number observed to the west, of the meridian, the sun being at about the same altitude in each case, is as reliable as any that can be obtained by means of a sextant.

V.—GENERAL REMARKS ON THE OBSERVATIONS FOR TIME AND LATITUDE.

The observations for time and latitude were all made by me, assisted usually by Professor Eastman, who noted the time at a given signal, and then recorded the observation. On two or three occasions I was assisted by Professor Hall, and again by Captain G. L. Tupman. In the first observation that I made at Syracuse I attempted to take up the beat of the chronometer and note the times myself, but I soon abandoned that plan because, owing to noise and other disturbing influences, it did not seem either so accurate or so convenient as to have the times noted by an assistant. The instruments employed were the sextant Stackpole and Brother, No. 937, with a magnifying power of 8.88 diameters on its telescope; the mercurial artificial horizon Ha. 1; and the mean time box chronometer T. S. and J. D. Negus, No. 1115. When observing the sun, half the altitudes were always measured on one limb, with the roof of the artificial horizon in one position, and the other half of the altitudes were measured on the other limb, with the roof of the horizon reversed. When observing stars half the altitudes were measured with the roof in one position, and the other half with it reversed. In the day-time the index correction of the sextant was determined by measuring the diameter of the sun both on and off the arc; at night it was determined by observing the contact of the direct and reflected image of a star.

Throughout this report civil dates are employed. The refractions have been computed by means of Bessel's formula, using the tables given in the Appendix to the Washington Observations for 1845. For latitude observations the tabular part of the reductions to the meridian has been taken from Loomis's Practical Astronomy. All astronomical data required in the reductions have been taken from the American Ephemeris and Nautical Almanac. For further details as to the mode of observing, the formulæ employed in the reductions, &c., reference may be made to my Report on the Total Solar Eclipse of August 7, 1869.*

VI.—OBSERVATIONS FOR TIME.

The observations for time are given in detail in Addendum A to this report, but for convenience of reference the following abstract of them is inserted here. The first column of the table contains the dates; the second column contains the corrections to the chronometer derived from the individual sets of observations made in the forenoon; the third column contains the corrections derived from the sets of observations made in the afternoon; the fourth column contains for each day the mean of the corrections given by the forenoon observations; the fifth column contains for each day the mean of the corrections given by the afternoon observations; the sixth column contains for each day the mean of the numbers given in the fourth and fifth columns, which is taken to be the correction to the chronometer at noon; the seventh column contains the resulting daily rates. The observations on the morning of December 13 were made at the Prima Porta Terra, $0^{s}.13$ east of the Stone Gun-Platform, but in computing the correction to the chronometer at noon of that day the necessary allowance has been made to reduce them to the Stone Gun-Platform.

* Appendix II to the Washington Observations for 1867, pp. 33–40.

Chronometer T. S. & J. D. Negus No. 1115 *slow of Mean Time at the Stone Gun-Platform, Syracuse, by observation.*

Date.	A. M.	P. M.	Means. A. M.	Means. P. M.	Correction at Noon.	Daily Rate.
1870.	h. m. s.	s.	s.	s.	h. m. s.	s.
December 13	+ 1 2 42.9	42.9				
	43.8	43.1	43.47*	43.00	+ 1 2 43.17	
	43.7					
						+ 0.70
14	42.8	44.2				
	43.9	44.3	43.77	43.97	43.87	
	44.6	43.4				
						0.49
15	43.8	44.7				
	45.1	43.8	44.50	44.23	44.36	
	44.6	44.2				
						0.32
16	43.8	44.2				
	45.3	44.3	44.80	44.57	44.68	
	45.3	45.2				
						0.21
19	46.1	44.4				
	45.8	44.5	46.07	44.53	45.30	
	46.3	44.7				
						+ 0.12
21	45.4	44.9				
	46.7	44.5	46.37	44.70	45.54	
	47.0	44.7				
22	45.6					
	45.3		45.13		+ 1 2 45.14	
	+ 1 2 44.5					

* $0^s.13$ to the east of Stone Gun-Platform.

At the time of the eclipse, on December 22, I have taken this chronometer to be $1^h\ 2^m\ 45^s.7$ slow of mean time at the Stone Gun-Platform.

The following table contains all the chronometer comparisons made while we were at Syracuse, and I desire to call particular attention to the remarkably good running of the chronometers No. 1115 and No. 1256. Such a result shows the great degree of perfection to which the manufacture of these instruments has been carried.

The chronometer French No. 21778 belonged to Mr. Brothers, ot the English Expedition, and was used by him in timing the exposures of his photographic plates. It had a losing rate of about six seconds per day.

Chronometer Comparisons made at Syracuse.

Date.	Negus 1115.	Negus 1228.	Negus 1340.	Negus 1256.
1870.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
December 13	3 16 0		3 19 22.0	3 17 39.4
14	9 21 0		9 24 23.2	9 22 39.5
14	2 50 0		2 53 24.2	2 51 39.7
15	8 31 0		8 34 25.7	8 32 39.7
15	2 23 0		2 26 26.0	2 24 39.7
16	8 8 0		8 11 28.2	8 9 39.7
16	2 28 0		2 31 28.2	2 29 39.7
17	11 18 0	11 20 5.7	11 21 30.0	11 19 39.8
19	11 15 0	11 17 6.3	11 18 33.2	11 16 40.0
21	11 28 0	11 30 6.5	11 31 37.5	11 29 40.1
22	9 2 0	9 4 7.2	9 5 39.2	9 3 40.2
22	2 30 0	2 32 7.2	2 33 39.8	2 31 40.4
		French 21778.		
		h. m. s.		
22	8 57 0	8 54 47.1		
22	2 53 0	2 50 45.5		

VII.—OBSERVATIONS FOR LATITUDE.

The observations for latitude are given in detail in Addendum B to this report; but for convenience of reference the following abstract of them is inserted here.

Abstract of Results of Observations for Latitude of the Stone Gun-Platform at Syracuse.

Date.	Object.	Latitude.
1870.		° ′ ″
December 13	Sun	+37 3 63
14	Polaris	66
14	Polaris	47
16	Sun	56
16	Sun	58
16	Polaris	37
16	Polaris	43
17	Sun	63
17	Sun	53
18	Sun	62
18	Sun	63
19	Sun	52
19	Sun	57
19	Polaris	54
19	Polaris	67
21	Sun	63
21	Sun	64

Taking separately the mean of the latitudes resulting from observations on the sun, and the mean of the latitudes resulting from observations on Polaris, I find

	°	′	″	″
From the Sun	+ 37	3	59.4	± 0.90
From Polaris			52.3	± 3.38
Mean	+ 37	3	55.9	

As the value from the sun, and that from Polaris, differ from each other by more than the square root of the sum of the squares of their probable errors, I infer that they are affected by a small constant error, and I therefore take their mean as the value of the latitude to be derived from my observations.

Professor Hall's observations at Syracuse, reduced by himself, give for the value of the latitude

	°	′	″
From the Sun	+ 37	3	59.7
From Polaris			35.0
Mean	+ 37	3	47.3

My result for latitude depends on one hundred and two observed altitudes; Professor Hall's on sixty-four observed altitudes. Giving each determination weight in proportion to the number of altitudes on which it depends, I get finally for the latitude of the Stone Gun-Platform

$$+ 37^\circ\ 3'\ 52''.6 \pm 2''.98$$

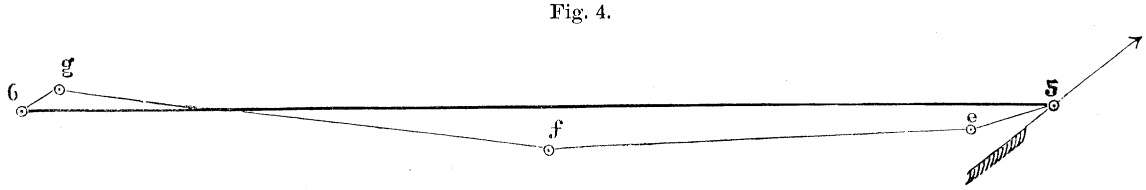
and that value I adopt.

VIII.—TRIANGULATION AT SYRACUSE.

In order to connect our observing station at the Stone Gun-Platform with the various conspicuous land-marks in the city of Syracuse, it was necessary to make a small triangulation.

On passing out of the city toward the main-land, about one-eighth of a mile (200 meters) beyond the fortifications, we come to an open circular space perhaps three hundred feet (98 meters) in diameter. From

Fig. 4.



this circular space four roads radiate. That directed N. 82° W. (true) leads to Avola and Noto. Traveling along it for a little more than half a mile (860 meters) we come to a small stream, crossed by a substantial stone bridge of three arches. Continuing in the same direction about seven-eighths of a mile (1,390 meters) further we come to another fine stone bridge, which, in this case, consists of a single arch spanning the Anapus River. The land between these two bridges is low and marshy, and the road is an artificial causeway protected throughout nearly its whole length by a stone wall on its eastern side. This wall rises about three feet above the surface of the road, and its top is covered with heavy coping-stones. On these coping-stones Professor Hall and I measured the base-line which is shown on a scale of 1 to 10,000 in Figure 4. The causeway was not quite straight, which obliged us to measure the base in four sections; the northern terminus, 5, Fig. 4, being directly above the key-stone in the east face of the central arch of the three-arched bridge; and the southern terminus, 6, Fig. 4, being directly above the key-stone in the east face of the arch over the Anapus River. The measurements were made on December 20, with my Chesterman's metallic tape-line, which is too long in the proportion of 100.134 to 100.000. This explains

the origin of the column, "Corrected distances," in the following table giving the details of the measurement of the base-line:

Stations.	Measured Distances in Feet.	Corrected Distances in Feet.	Corrected Distances in Meters.
From 5 to *e* . .	372.58	372.08	113.41
From *e* to *f* . .	1850.00	1847.52	563.15
From *f* to *g* . .	2150.00	2147.12	654.47
From *g* to 6 . .	187.75	187.50	57.15
	Observed Angles.		
	° ′		
5 *e f*	166 5		
e f g	170 30		
f g 6	144 56		

The following table gives the results of the successive steps in reducing this base to a straight line:

Stations.	Angles.	Distances in Feet.	Distances in Meters.
	° ′ ″		
5 *e f*	166 5 0		
From 5 to *f* . . .		2210.51	673.79
5 *f g*	168 10 47		
From 5 to *g* . . .		4334.28	1321.14
5 *g* 6	150 55 48		
From 5 to 6 . . .		4499.09	1371.38

On December 20 and 21, Professor Hall and I executed, upon this base, the triangulation shown in Fig. 5, which is drawn on a scale of 1 to 15,000. The different stations are designated in the figure by numerals, as follows:

1 is the Stone Gun-Platform, the position of which is described on page 48.

2 is the Light-House on Maniace Castle.

3 is the highest point in the center of the *façade* of the cathedral, which in ancient times was the Temple of Minerva.

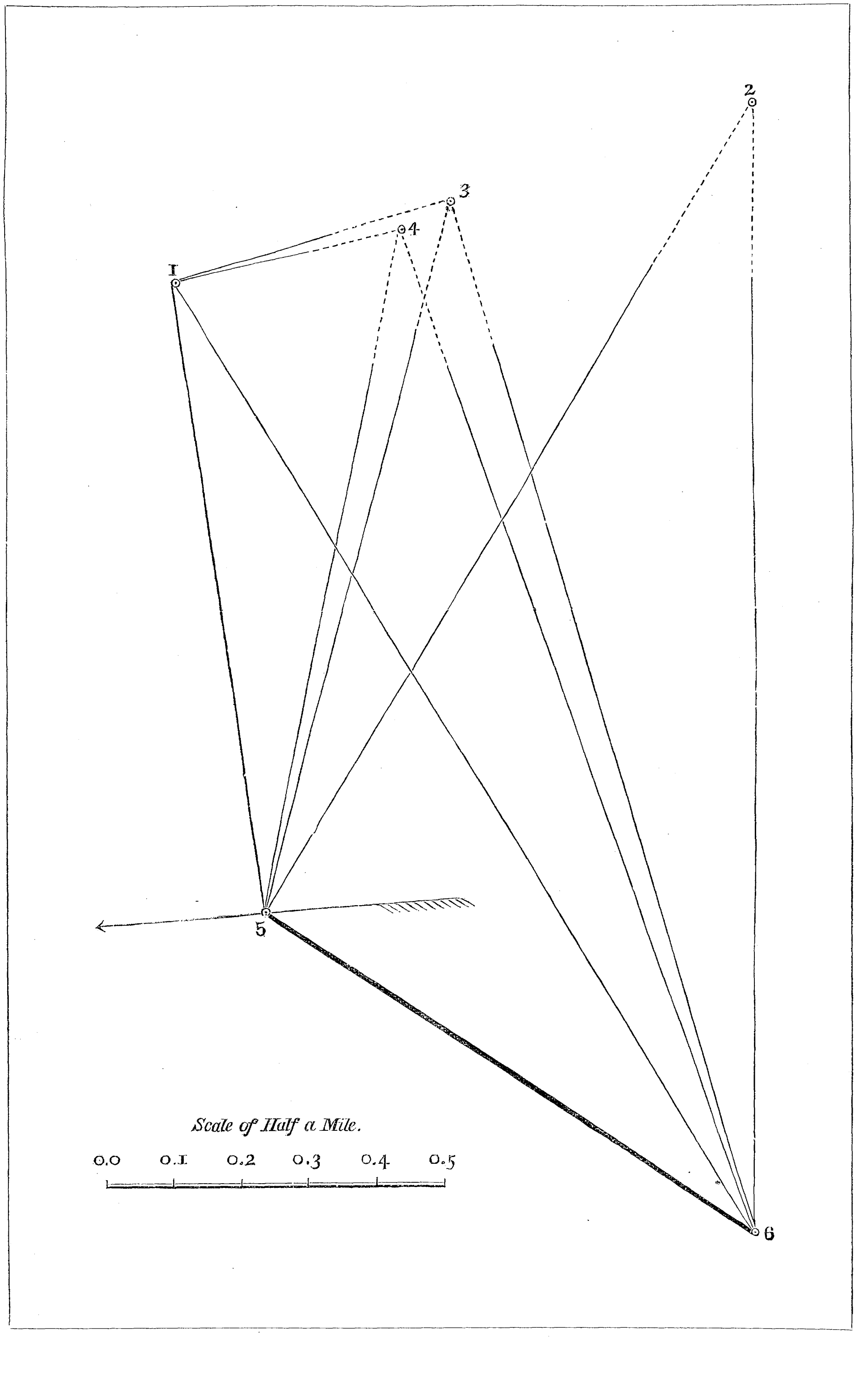
4 is the cupola of the Chiesa del Collegio.

5 is the north end of the base, which is directly above the key-stone in the east face of the central arch of the three-arched bridge.

6 is the south end of the base, which is directly above the key-stone in the east face of the arch of the bridge over the Anapus River.

7 is the Belvedere Tower, which is not shown in the figure.

Fig. 5.



By means of my pocket sextant, Stackpole & Brother, No. 346, the following angles were measured:

Angles at 1.			Angles at 5.			Angles at 6.		
	°	'		°	'		°	'
6 1 5 =	23	9	1 5 2 =	39	11	1 6 2 =	31	14
3 1 5 =	98	24	1 5 3 =	22	45	1 6 3 =	15	2
4 1 5 =	95	13	1 5 4 =	19	25	1 6 4 =	12	0
5 1 7 =	25	24	3 5 2 =	16	16	3 6 2 =	16	12
6 1 7 =	48	32	4 5 2 =	19	40	4 6 2 =	19	12
			4 5 3 =	3	24	4 6 3 =	3	2
			2 5 6 =	92	20	5 6 2 =	56	40
						5 6 1 =	25	27
						5 6 3 =	40	29

By correcting these angles in accordance with the method of least squares, and then converting them into directions, the corrected directions given in the third column of the subjoined table were obtained.

Table of Corrected and Adjusted Directions.

Station.	Object.	Corrected Direction.		Correction by Adjustment.	Adjusted Direction.		
		°	'	'	°	'	"
North Base	Stone Gun-Platform . . .	0	0.0	+0.48	0	0	29
	Cupola of Chiesa del Collegio	19	25.5	− .25	19	25	15
	Cathedral	22	48.5	+ .10	22	48	36
	Light-House	39	7.0		39	7	0
	South Base	131	27.0	− .33	131	26	40
South Base	North Base	0	0.0	+ .38	0	0	22
	Stone Gun-Platform . . .	25	26.9	− .61	25	26	17
	Cupola of Chiesa del Collegio	37	27.4	+ .36	37	27	46
	Cathedral	40	28.9	− .12	40	28	47
	Light-House	56	40.3		56	40	18
Stone Gun-Platform .	Cathedral	0	0.0	− .02	359	59	59
	Cupola of Chiesa del Collegio	3	11.0	+ .04	3	11	2
	South Base	75	15.5	+ .29	75	15	47
	North Base	98	24.0	−0.31	98	23	41
	Belvedere Tower	123	47.8		123	47	48

In order to facilitate the adjustment of this triangulation by the method of least squares, I have adopted the following notation: Retaining the numerical designation of the stations already given, two numbers written one above the other indicate the direction from the station corresponding to the lower number to that corresponding to the upper number; thus, $\frac{1}{5}$ would indicate the direction from 5 to 1, and $\frac{6}{5}$ would indicate the direction from 5 to 6. As the difference of two directions is an angle, $-\frac{1}{5}+\frac{6}{5}$ would indicate the angle 1 5 6. If the numbers are inclosed between brackets they indicate a correction; thus, $[\frac{1}{5}]$ would indicate the correction to the direction $\frac{1}{5}$; $[\frac{6}{5}]$ would indicate the correction to the direction $\frac{6}{5}$, and $[-\frac{1}{5}+\frac{6}{5}]$ would indicate the correction to the angle 1 5 6.

Proceeding in the usual manner,* the quadrilateral 1 4 6 5 furnishes the angle equation

$$180^\circ = 5\,1\,6 + 1\,6\,5 + 6\,5\,1$$

and the side equation

$$\sin 1\,5\,4 \,.\, \sin 5\,6\,4 \,.\, \sin 4\,1\,6 = \sin 4\,1\,5 \,.\, \sin 4\,5\,6 \,.\, \sin 1\,6\,4$$

from which we derive the equations of condition

$$0 = +2.4 - \left[{6 \atop 1}\right] + \left[{5 \atop 1}\right] - \left[{5 \atop 6}\right] + \left[{1 \atop 6}\right] - \left[{1 \atop 5}\right] + \left[{6 \atop 5}\right] \qquad \text{I.}$$

$$\begin{aligned} 0 = +83.3 &- 35.8\left[{1 \atop 5}\right] + 30.7\left[{4 \atop 5}\right] - 16.5\left[{5 \atop 6}\right] - 42.8\left[{4 \atop 6}\right] - 5.2\left[{4 \atop 1}\right] + 4.1\left[{6 \atop 1}\right] \\ &+ 1.1\left[{5 \atop 1}\right] + 5.1\left[{6 \atop 5}\right] + 59.3\left[{1 \atop 6}\right] \end{aligned} \qquad \text{II.}$$

The quadrilateral 1 3 6 5 furnishes the side equation

$$\sin 1\,5\,3 \,.\, \sin 5\,6\,3 \,.\, \sin 3\,1\,6 = \sin 3\,1\,5 \,.\, \sin 3\,5\,6 \,.\, \sin 1\,6\,3$$

from which we derive the equation of condition

$$\begin{aligned} 0 = +43.5 &- 30.0\left[{1 \atop 5}\right] + 25.7\left[{3 \atop 5}\right] - 14.8\left[{5 \atop 6}\right] - 32.2\left[{3 \atop 6}\right] - 5.2\left[{3 \atop 1}\right] + 3.3\left[{6 \atop 1}\right] \\ &+ 1.9\left[{5 \atop 1}\right] + 4.3\left[{6 \atop 5}\right] + 47.0\left[{1 \atop 6}\right] \end{aligned} \qquad \text{III.}$$

These three equations of condition give rise to the following:

Equations of Correlatives.

v	aK_1	bK_2	cK_3
${3 \atop 1}$			− 5.2
${4 \atop 1}$		− 5.2	
${5 \atop 1}$	+ 1	+ 1.1	+ 1.9
${6 \atop 1}$	− 1	+ 4.1	+ 3.3
${1 \atop 5}$	− 1	− 35.8	− 30.0
${3 \atop 5}$			+ 25.7
${4 \atop 5}$		+ 30.7	
${6 \atop 5}$	+ 1	+ 5.1	+ 4.3
${1 \atop 6}$	+ 1	+ 59.3	+ 47.0
${3 \atop 6}$			− 32.2
${4 \atop 6}$		− 42.8	
${5 \atop 6}$	− 1	− 16.5	− 14.8

The resulting normal equations are,

$$\begin{aligned} 0 &= +2.4 + 6.0\,K_1 + 113.7\,K_2 + 94.7\,K_3 \\ 0 &= +83.3 + 113.7 \quad + 7915.8 \quad + 4142.8 \\ 0 &= +43.5 + 94.7 \quad + 4142.8 \quad + 5085.4 \end{aligned}$$

The solution gives

$$\begin{aligned} K_1 &= -\,0.306 \\ K_2 &= -\,0.00808 \\ K_3 &= +\,0.00372 \end{aligned}$$

Substituting these values in the equations of correlatives, we obtain the "Corrections by adjustment" given in the fourth column of the table of corrected and adjusted directions. Applying the corrections by adjustment to the corrected directions, we obtain the adjusted directions given in the fifth column of the same table; and by means of these adjusted directions the whole triangulation has been computed, as follows—the lengths of the sides being given in meters:

* See a paper by Charles A. Schott, esq., in the United States Coast Survey report for 1854, page 80* *et seq.*

No.	Denomination.	Observed Angles.	Corr. by Adjustment.	Plane Angles and Distances.	Logarithms.
		° ′	″		
	North Base—South Base			1371.4	3.13716
	Stone Gun-Platform	23 8.5	— 36	23 7 54	0.40578
I.	North Base	131 27.0	— 49	131 26 11	9.87488
	South Base	25 26.9	— 59	25 25 55	9.63290
	Stone Gun-Platform—South Base			2617.1	3.41782
	Stone Gun-Platform—North Base			1499.1	3.17584
	North Base—South Base			1371.4	3.13716
	Cathedral			30 53 31	0.28952
II.	North Base	108 38.5	— 26	108 38 4	9.97662
	South Base	40 28.9	— 29	40 28 25	9.81231
	Cathedral—South Base			2531.1	3.40330
	Cathedral—North Base			1733.8	3.23899
	Stone Gun-Platform—North Base			1499.1	3.17584
	Cathedral			58 48 11	0.06784
III.	Stone Gun-Platform	98 24.0	— 18	98 23 42	9.99532
	North Base	22 48.5	— 23	22 48 7	9.58833
	Cathedral—North Base			1733.8	3.23900
	Cathedral—Stone Gun-Platform			679.2	2.83201
	North Base—South Base			1371.4	3.13716
	Chiesa del Collegio			30 31 11	0.29428
IV.	North Base	112 1.5	— 5	112 1 25	9.96709
	South Base	37 27.4	0	37 27 24	9.78402
	Chiesa del Collegio—South Base			2503.4	3.39853
	Chiesa del Collegio—North Base			1642.3	3.21546
	Stone Gun-Platform—South Base			2617.1	3.41782
	Chiesa del Collegio			95 53 46	0.00230
V.	Stone Gun-Platform	72 4.5	+ 15	72 4 45	9.97840
	South Base	12 0.5	+ 59	12 1 29	9.31876
	Chiesa del Collegio—South Base			2503.3	3.39852
	Chiesa del Collegio—Stone Gun-Pl.			548.1	2.73888
	North Base—South Base			1371.4	3.13716
	Light-House			31 0 24	0.28808
VI.	North Base	92 20.0	— 20	92 19 40	9.99964
	South Base	56 40.3	— 22	56 39 56	9.92193
	Light-House—South Base			2660.0	3.42488
	Light-House—North Base			2224.2	3.34717

For the determination of the azimuths of the sides of the triangles, we have the following angles, measured at the Stone Gun-Platform, late in the afternoon, between the Belvedere Tower and the sun. The instruments employed were my six-inch sextant, Stackpole & Brother No. 937, and the mean time chronometer T. S. & J. D. Negus, No. 1115.

Date.	Time by Negus 1115.			Angle between Sun and Tower.			Limb observed.
1870.	h.	m.	s.	°	′	″	
December 13	2	45	4.5	59	45	20	L.
		45	58.5	59	4	30	R.
		46	35.5	58	57	30	R.
		47	20.0	59	22	10	L.
December 15	2	8	54.0	66	41	0	L.
		10	18.0	65	52	40	R.
		11	33.0		39	30	R.
		12	36.0		58	10	L.
December 16	2	15	35.5	65	31	50	L.
		16	9.0	64	54	20	R.
		16	42.5	64	48	20	R.
		17	12.0	65	13	20	L.

In order to obtain the zenith distance of the Tower, I measured with my pocket-sextant Stackpole & Brother No. 346, the angle included between the Tower and its image reflected from the inclined plane of my black-glass artificial horizon. For the reduction of these observations I have employed the formula

$$\Delta = (90^\circ + a) - \frac{m}{2}$$

in which

Δ=zenith distance of object observed,

m=angular distance between the object and its reflected image,

a=angle included between the inclined reflecting plane and a truly level surface.

In my apparatus there are two inclined black-glass reflectors, designated respectively as A and B. For A, $a=34^\circ\ 58'.8$; and for B, $a=44^\circ\ 59'.1$. When using them care was taken to place them truly at right angles to the vertical plane passing through the eye of the observer and the object to be observed. The following are the observations, together with their reduction:

Date	December 20		December 20	
Inclined plane . .	A		B	
	°	′	°	′
Observed values of m	72	24	92	19
		24		20
		24		21
Mean	72	24.0	92	20.0
Index Correction .		0.0		0.0
Eccentricity . . .	—	0.9	—	0.8
m	72	23.1	92	19.2
$\frac{m}{2}$	36	11.6	46	9.6
$(90^\circ+a)$	124	58.8	134	59.1
Δ	88	47.2	88	49.5

The mean of the two values of $\varDelta$ is 88° 48′.4, which I have adopted.

For the determination of the sun's azimuth we have the formula

$$\tan M = \frac{\tan \delta}{\cos t} \qquad \tan A = \frac{\tan t.\cos M}{\sin(\varphi - M)}$$

where A is to be taken greater or less than 180°, according as t is greater or less than 180°.

A=azimuth of object, counted from the south around by the west.

δ=declination of object.

t=hour angle of object.

φ=latitude of place of observation.

The principal steps in the computation of the azimuth of the Tower will therefore be as follows

	December 13.				December 15.				December 16.			
		h.	m.	s.		h.	m.	s.		h.	m.	s.
Mean of Observed Times		2	46	14.6		2	10	52.5		2	16	24.8
Chronometer slow		1	2	43.3		1	2	44.4		1	2	44.7
Local Mean Time		3	48	57.9		3	13	36.9		3	19	9.5
Equation of Time	+		5	32.8	+		4	35.9	+		4	6.6
t		3	54	30.7		3	18	12.8		3	23	16.1
		°	′	″		°	′	″		°	′	″
δ	—	23	10	46	—	23	17	38	—	23	20	25
φ	+	37	3	53	+	37	3	53	+	37	3	53
M	—	39	26	12	—	33	34	13	—	34	19	55
(φ—M)	+	76	30	5	+	70	38	6	+	71	23	48
Sun's Azimuth		52	29	16		46	0	48		46	54	33
Mean of Observed ∠s, Sun and Tower		59	17	22		66	2	50		65	6	58
Index Correction	—			19	—			36	—			13
Corrected ∠, Sun and Tower . . .		59	17	3		66	2	14		65	6	45
Zenith Distance of Tower		88	48	24		88	48	24		88	48	24
Zenith Distance of Sun		81	34	54		76	13	10		76	59	0
Horizontal ∠, Sun and Tower . . .		59	6	40		65	35	47		64	42	31
Azimuth of Tower		111	35	56		111	36	35		111	37	4

Taking the mean of the three observed values, we have

	°	′	″
Azimuth from Stone Gun-Platform to Belvedere Tower	111	36	32
∠ North Base and Belvedere Tower	25	24	7
Azimuth from Stone Gun-Platform to North Base	86	12	25

The azimuths of such other of the sides as were required, together with the differences of latitude longitude, have been computed by means of the formulæ and tables of the United States Coast Surv The results are appended. The columns headed "Azimuth" and "Distance" contain respectively azimuths and distances from the stations named in the first column to those named in the sixth column. column headed "Back Azimuth" contains the azimuths from the stations named in the sixth colum those named in the first column.

*The formulæ and tables are given in the United States Coast Survey Report for 1860, pp. 361–391. The formulæ are given in my Report on the Total Solar Eclipse of August 7, 1869, Appendix II to the Washington Observations for p. 57.

Table of Geographical Positions in and around Syracuse, Sicily.

Name of station.	Latitude.	Longitude.	Azimuth.	Back Azimuth.	To Station.	Distance, in Meters.	Distance, in Miles.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″			
Stone Gun-Platform	37 3 52.60	0 0 0.00	86 12 25	266 11 49	North Base	1499.1	0.93
			63 4 31	243 3 34	South Base	2617.1	1.63
North Base	37 3 49.38	+ 0 1 0.56	37 38 0	217 37 40	South Base	1371.4	0.85
			305 18 20	125 19 4	Light-House	2224.2	1.38
South Base	37 3 14.14	+ 0 1 34.45	258 6 4	78 7 5	Cathedral	2531.1	1.57
			274 17 35	94 18 40	Light-House	2660.0	1.65
Cathedral	37 3 31.06	— 0 0 5.80	109 0 36	288 59 56	North Base	1733.8	1.08
			167 48 46	347 48 43	Stone Gun-Platform	679.2	0.42
Chiesa del Collegio	37 3 35.04	— 0 0 3.47	105 37 14	285 36 35	North Base	1642.3	1.02
			170 59 48	350 59 46	Stone Gun-Platform	548.1	0.34
South Base	37 3 14.14	+ 0 1 34.45	255 5 4	75 6 3	Chiesa del Collegio	2503.4	1.55
			258 6 4	78 7 5	Cathedral	2531.1	1.57
Light-House	37 3 7.67	— 0 0 12.91	125 19 4	305 18 20	North Base	2224.2	1.38
			94 18 40	274 17 35	South Base	2660.0	1.65
Prima Porta Terra	37 3 48.06	— 0 0 1.88	161 39	341 39	Stone Gun-Platform	147.5	0.09
Mr. Brothers' Telescope	37 3 50.43	— 0 0 0.64	166 37	346 37	Stone Gun-Platform	68.9	0.04
Prof. Eastman's Telescope	37 3 51.54	— 0 0 0.31	166 37	346 37	Stone Gun-Platform	33.5	0.02
Prof. Harkness' Telescope	37 3 52.27	— 0 0 0.10	166 37	346 37	Stone Gun-Platform	10.4	0.01

IX.—TELEGRAPHIC DETERMINATION OF DIFFERENCES OF LONGITUDE.

If we let

$\Delta\lambda =$ difference of longitude between two stations; west longitudes being taken as positive;
$T_e =$ time by face of eastern clock when it sends a signal, and
$T_w =$ time by face of western clock when that signal is received at the western station;
$T'_w =$ time by face of western clock when it sends a signal, and
$T'_e =$ time by face of eastern clock when that signal is received at the eastern station;
$t =$ time occupied in the passage of a signal from one station to the other;
$\Delta T_e, \Delta T'_e, \Delta T_w$, and $\Delta T'_w =$ respectively the corrections necessary to reduce the time indicated by the faces of the eastern and western clocks to true local time at the instants T_e, T'_e, T_w, T'_w;

then, neglecting personal equation, when the eastern clock sends and the signals are received at the western station, we shall have

$$\Delta\lambda - t = (T_e - T_w) + (\Delta T_e - \Delta T_w)$$

and when the western clock sends, and the signals are received at the eastern station, we shall have

$$\Delta\lambda + t = (T'_e - T'_w) + (\Delta T'_e - \Delta T'_w)$$

from which we get

$$\Delta\lambda = \frac{(T_e - T_w) + (T'_e - T'_w)}{2} + \frac{(\Delta T_e - \Delta T_w) + (\Delta T'_e - \Delta T'_w)}{2}$$

$$t = \frac{(T'_e - T'_w) - (T_e - T_w)}{2} + \frac{(\Delta T'_e - \Delta T'_w) - (\Delta T_e - \Delta T_w)}{2}.$$

If the rates of the clocks are small, the second term in the expression for the value of t may usually be neglected.

Difference of Longitude between Syracuse and Malta.

The observations at Syracuse were made by me, at the Stone Gun-Platform, and have already been given in detail on page 59. The observations at Malta were made by Professor Hall, with the Pistor and Martins patent sextant No. 107, of six inches radius, a mercurial artificial horizon, and the mean time chronometer T. S. & J. D. Negus No. 1228. On December 13, he observed at Spencer's Monument; on December 14, 15, and 16, he observed on the flat roof of the Telegraph Office, which, according to the Ordnance survey map on a scale of 1 to 2500, is 6040 feet north, and 760 feet east, of Spencer's Monument. The reduction from the Telegraph Office to Spencer's Monument will therefore be, in latitude $-59''.73$, and in longitude $+ 9''.23 = + 0^s.615$.

Professor Hall obtains from his observations the following results:*

Observations for Latitude.

Date.	Station.	Object.	No. of Altitudes.	Observed Latitude of Station.	Resulting Latitude of Spencer's Monument.
1870.				° ′ ″	° ′ ″
Dec. 13	Spencer's Monument . .	Sun . .	16	+ 35 52 55	+ 35 52 55.
14	Telegraph Office . . .	Sun . .	12	54 0	60.3
15	Telegraph Office . . .	Sun . .	8	54 23	83.3

The mean of the three results is $35° 53' 6'' \pm 5''.8$; but as a comparison of the adopted latitude of Syracuse with that obtained from Professor Hall's sextant observations shows the latter to be $7''$ too large, I subtract that amount from the mean given above, and obtain finally

Latitude of Spencer's Monument $= + 35° 52' 59'' \pm 5''.8$

*For the observations in detail see pages 30 to 38.

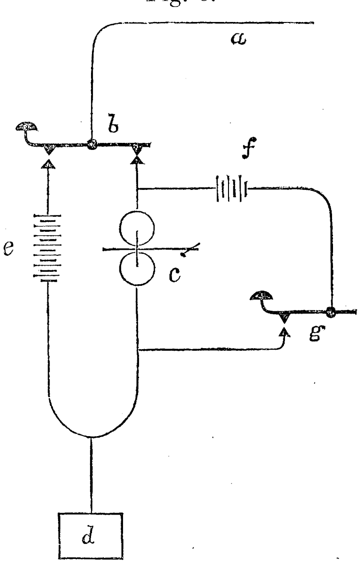
Chronometer T. S. & J. D. Negus No. 1228 *slow of Local Mean Time, by Observation.*

Date.	Station.	A. M.	P. M.	Correction at Noon.
1870.		h. m. s.	s.	h. m. s.
December 13	Spencer's Monument, Malta .	+ 0 57 29.0*		
14	Telegraph Office, Malta . .	28.4	28.6	+ 0 57 28.5
15	Telegraph Office, Malta . .	28.0	29.2	28.6
16	Telegraph Office, Malta . .	28.7	29.7	29.2
17	Stone Gun-Platform, Syracuse	+ 1 0 38.9	39.3	+ 1 0 39.1
18	Stone Gun-Platform, Syracuse	38.1	40.0	39.0
19	Stone Gun-Platform, Syracuse	38.6	37.8	38.2
21	Stone Gun-Platform, Syracuse	39.4	37.5	38.4
22	Stone Gun-Platform, Syracuse	37.2		

* Reduction to Telegraph Office = + $0^s.6$.

The telegraph line between Malta and Syracuse is made up of 56½ knots = 65.1 statute miles = 104.8 kilometers of submarine cable, and 155.4 statute miles = 250 kilometers of wire stretched in the air. The total length of the line is therefore 220½ miles = 354¾ kilometers. The battery at Malta consisted of twenty small-sized Daniels cells, (Pile Callaud, Italian model,) while that at Syracuse consisted of twenty small-sized Daniels cells with the liquids in contact, known in Italy as the "Pila Callaud a strozzatura senza diaframma." The arrangement of the instruments on the line was such as is never seen in the United States, but I believe it is quite common in Europe. At each station there was a galvanic battery, *e*, Fig. 6; a polarized receiving-magnet, *c*, which recorded the signals with ink upon a long fillet of paper running at the rate of about eight-tenths of an inch per second; a transmitting-key, *b*, having a front and a back contact; and an earth-plate, *d*. The battery *e* had one of its poles connected with the earth-plate *d*, and the other attached to a point under the front contact of the key *b*. The polarized receiving-magnet *c* had one end of its coil connected with the earth-plate *d*, and the other end attached to a point under the back contact of the key *b*. The line wire *a*, coming in from the distant station, was attached to the axis of the key *b*, which, when not in use for sending signals, habitually rested on its back contact, and thus put the line to earth through the receiving-magnet *c*. Things being in this condition, any current arriving from the distant station was at once made evident by the receiving-magnet *c*. If it was desired to send a signal to the distant station, the key *b* was depressed, thus breaking the contact between the earth and the line, and establishing a connection between the latter and the battery *e*. In order to render this apparatus as convenient as possible for the exchange of longitude signals, I added to it the local battery *f* and the key *g*, connected with the receiving-magnet *c*, in the manner shown in the figure.

Fig. 6.



The following was the

PROGRAMME FOR THE DETERMINATION OF DIFFERENCE OF LONGITUDE.

1. Mean time box chronometers, beating half-seconds, will be used at each station, and their corrections and rates will be determined by means of observations on the sun, made both in the morning and in the afternoon, with sextants and mercurial artificial horizons. In order to eliminate constant errors, care will be taken that the observations in the morning and in the afternoon are made with the sun at about the same altitude; that in each case an equal number of altitudes are taken on one limb of the sun with the roof of the horizon in one position, and on the other limb of the sun with the roof of the horizon reversed; and that the index error of the sextant employed is well determined with each set of observations.

2. The time of exchanging signals will necessarily depend upon the convenience of the Telegraph Company, but about 1 p. m. will be the most desirable hour. At the conclusion of the telegraphic work of each day, the time of exchanging signals on the day following will be agreed upon.

3. Signals will be exchanged in the following manner: The officer at Syracuse will ask the officer at Malta if everything is ready, and, upon receiving an affirmative reply, he will wait until his chronometer indicates 50 seconds, and then he will make a rattle with the key *b*, Fig. 6, of his apparatus. This rattle will consist of ten or fifteen dots made at the rate of about five per second. Next he will make a series of taps on the key *b*, in exact coincidence with the beats of his chronometer at 0, 1, 5, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 0, 1, 5, &c., seconds, and this he will continue for three minutes, ending at 0 seconds. Then he will pause for five seconds, and finally finish with a rattle; after which he will record the hour and minute of the last tap before the rattle. As soon as the officer at Malta hears the first rattle of the officer at Syracuse, he will start his recording apparatus, if it is not already running, and will commence making taps on the key *g* of his instrument, in exact coincidence with the beats of his chronometer, and at intervals of one second; taking care to mark the beginning of each minute by omitting the tap corresponding to 0 seconds of the chronometer. This will be continued until the arrival of the second rattle from Syracuse, when he will cease tapping, and will record the hour and minute corresponding to the last tap which was omitted before the arrival of the rattle. He will then notify the officer at Syracuse whether or not his signals have been properly received. If they have not been, they will be repeated; if they have been, the officer at Syracuse will telegraph to the officer at Malta the hour and minute corresponding to his last tap.

The taps on the Malta key *g* will mark upon the Malta fillet a series of dots corresponding to the seconds of the Malta chronometer, thus producing a time scale in which the beginning of each minute will be designated by the omission of the dot corresponding to 0 seconds. Upon this time scale the taps on the Syracuse key *b* will record a series of dots corresponding to each fifth second of the Syracuse chronometer, and the beginning of each minute of that chronometer will be designated by two dots at an interval of one second. The hour and minute of each chronometer corresponding to the beginning of one of its minutes upon this time scale being known, it is evident that a very accurate comparison of the two chronometers will be obtained by simply reading off the scale.*

As soon as the officer at Malta has been notified of the hour and minute corresponding to the last signal sent from Syracuse, he will ask the officer at Syracuse if he is ready to receive signals from Malta, and upon receiving an affirmative reply the operations described above will be repeated, except that this time the signals will be sent by the officer at Malta tapping upon his key *b*, and will be received upon the Syracuse register *c*, while the officer there is tapping seconds upon his key *g*.

The following are the numerical details of the work. Each line in the columns headed "Number of Signals" gives the number of signals read off from the fillet, the mean of which furnished the chronometer comparison recorded on the same line. The headings of the other columns will be sufficiently intelligible without explanation, if it is borne in mind that the notation employed is that given on page 70.

Comparison of Chronometers obtained by reading off the Syracuse Fillet.

Date.	No. of Signals.	Negus 1115 at Syracuse.		Negus 1228 at Malta.	$(T'_e - T'_w)$
1870.		h. m. s.		h. m. s.	h. m. s.
Dec. 13	47	0 30 55.78	=	0 33 0.00	−0 2 4.22
14	34	3 12 55.52	=	3 15 0.00	4.48
15	37	3 14 55.19	=	3 17 0.00	4.81
16	37	1 9 54.81	=	1 12 0.00	5.19

Comparison of Chronometers obtained by Reading off the Malta Fillet.

Date.	No. of Signals.	Negus 1115 at Syracuse.		Negus 1228 at Malta.	$(T_e - T_w)$
1870.		h. m. s.		h. m. s.	h. m. s.
Dec. 13	40	0 21 0.00	=	0 23 4.23	−0 2 4.23
14	33	3 17 0.00	=	3 19 4.43	4.43
15	30	3 25 0.00	=	3 27 4.76	4.76
16	35	1 3 0.00	=	1 5 5.24	5.24

* From a discussion of 164 signals, exchanged between Syracuse and Malta, Professor Hall finds that the probable error of a chronometer comparison made by means of a single signal is only ± 0.034 of a second.

The probable error of a chronometer comparison obtained from the mean of thirty signals is about $\pm 0^s.007$.

As the rates of the chronometers were small, I assume $\Delta T_e = \Delta T'_e$, and $\Delta T_w = \Delta T'_w$. By means of a simple interpolation the tables on pages 59 and 71 furnish the

Chronometer Corrections at the Time of the Exchange of Signals.

Date.	Negus 1115 at Syracuse.	Negus 1228 at Malta.	$(\Delta T_e - \Delta T_w)$
1870.	h. m. s.	h. m. s.	h. m. s.
Dec. 13.	+ 1 2 43.20	+ 0 57 29.55	+ 0 5 13.65
14	43.95	28.52	15.43
15	44.41	28.70	15.71
16	44.70	29.25	15.45

Resulting Differences of Longitude and Wave Times.

Date.	$\frac{1}{2}(T'_e - T'_w)$	$\frac{1}{2}(T_e - T_w)$	$(\Delta T_e - \Delta T_w)$	$\Delta\lambda$	t
1870.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	s.
Dec. 13	− 0 1 2.11	− 0 1 2.12	+ 0 5 13.65	+ 0 3 9.42	+ 0.01
14	2.24	2.22	15.43	10.97	− .02
15	2.41	2.38	15.71	10.92	− .03
16	2.60	2.62	15.45	10.23	+ .02

The negative values of t probably indicate that that quantity is less than the personal equation of the observers in tapping. If we give half weight to the result of December 13, we get

$$\Delta\lambda = + 0^h\ 3^m\ 10^s.52 \pm 0^s.21$$

But an application of Peirce's criterion shows that the result of December 13 should be rejected; and as the time observations at Malta on that day were made on one side of the meridian only, and in consequence may be affected by a considerable constant error, I have discarded it. The mean of the remaining three results is

$$\Delta\lambda = + 0^h\ 3^m\ 10^s.71 \pm 0^s.16$$

which I adopt as the best value obtainable from our work.*

It would seem that time determined by means of sextants used in the manner described above must be free from all personality; but, in order to make sure of this point, I compared Professor Hall's chronometer corrections, given on page 71, with my own, given on page 59, by means of the chronometer comparisons given on page 60. In that way I found that the correction necessary to reduce Professor Hall's time to mine was, on December 17, $+ 0^s.1$; on December 18, $+ 0^s.1$; on December 19, $+ 0^s.8$; and on December 21, $+ 0^s.5$. These numbers might be taken as an indication of a personal equation; but, as they are less than the change in the difference between the results of the forenoon and afternoon observations on these very days, I prefer to consider them as accidental errors, and to assume that no real personal equation exists.

*If we assume Professor Hall's chronometer to have had a constant rate from December 14 to December 21, then each of the three corrections observed at Malta will furnish an equation of condition involving the correction at a given date, the rate, and the difference of longitude between Syracuse and Malta; and each of the four corrections observed at Syracuse will furnish an equation of condition involving the correction at the given date, and the rate. Solving these equations by the method of least squares, the chronometric difference of longitude will be found to be $0^h\ 3^m\ 10^s.23$.

Our final result for difference of longitude will therefore be

	h.	m.	s.
Stone Gun-Platform, Syracuse, east of Telegraph Office, Malta	0	3	10.71
Spencer's Monument, west of Telegraph Office at Malta		+	0.615
Light on Maniace Castle, east of Stone Gun-Platform, Syracuse		+	0.861
Light on Maniace Castle, Syracuse, east of Spencer's Monument, Malta .	0	3	12.19 ± 0^s.16

The English Admiralty chart, dated December 10, 1869, gives, as the difference of longitude between these two points, $0° 47' 24'' = 0^h 3^m 9^s.6$, a value which is too small by $2^s.6 = 39''$.

Difference of Longitude between Malta and Gibraltar.

The observations at Malta were made by Professor Hall, as described above. Those at Gibraltar were made by Professor Newcomb, with a Gambey sextant of seven inches radius and a mercurial artificial horizon; and as he observed in three different localities, it is desirable, in the first place, to determine the reduction from each of these localities to some well-marked position. In order to accomplish this with as much accuracy as possible, I procured a copy of the English Admiralty chart of Gibraltar, dated July 27, 1869, the topography upon which is from the Ordnance plan of 1868, and the scale of which is 1.00 inch to 1031 feet. Upon this chart the Signal Tower and the Base of the New Mole were marked, and Professor Newcomb was kind enough to point out on it the exact location of the Telegraph Office and the approximate positions of the American Consul's House and of his station at Buena Vista. Then, by means of the ordinates given on page 9 of his report, I laid off the position of Buena Vista Station from the Signal Tower, from the Base of the New Mole, and from the Telegraph Office. To my surprise I obtained three different points, two of which fell in the sea. To unravel the difficulty, I laid down on a piece of tracing-paper the relative positions of the Telegraph Office, the American Consul's House, the Signal Tower, the Base of the New Mole, and Buena Vista Station, employing for that purpose the scale of the chart and Professor Newcomb's co-ordinates. Then superposing the tracing-paper on the chart in such a manner that the Signal Tower and the Base of the New Mole marked upon the former fell over the same points marked upon the latter, I found that all the other points marked on the paper also coincided with the corresponding points on the chart as accurately as could be expected when it was considered that the measurements of the ordinates were only made to the nearest hundred feet. Distributing the outstanding differences as evenly as possible among the several known stations, I transferred the positions of Buena Vista Station and the American Consul's House to the chart with all desirable accuracy by pricking them through from the tracing-paper. From the position of Buena Vista Station thus determined the ordinates of the other stations were measured on the chart, and the results are given in the columns X and Y of the following table; the axis of X being taken in the meridian, and that of Y in the prime vertical. The numbers in the columns r and A have been computed from those in the columns X and Y by means of the formulæ

$$r = 1031\sqrt{X^2 + Y^2} \qquad \tan A = \frac{Y}{X}$$

r being the distance and A the azimuth from Buena Vista to any other station. The numbers in the columns r' and A' have been computed from Professor Newcomb's co-ordinates by means of the formulæ

$$r' = \sqrt{X'^2 + Y'^2} \qquad \tan A' = \frac{Y'}{X'}$$

Station.	Admiralty Chart.				Newcomb.		$A' - A$
	X	Y	r	A	r'	A'	
	in.	in.	feet.	° ′	feet.	° ′	° ′
Telegraph Office	8.42 N.	2.12 W.	8950	165 51	8910	170 58	+ 5 7
American Consul's House .	6.63 N.	1.32 W.	6970	168 45	6950	173 23	+ 4 38
Signal Tower	5.60 N.	0.58 E.	5800	185 56	5710	191 9	+ 5 13
Flag-Staff at Landing-Place .	2.60 N.	1.80 W.	3260	145 19			
Base of New Mole	2.50 N.	2.08 W.	3350	140 14	3360	143 27	+ 3 13

A comparison of the distances in the columns r and r' shows that they are as nearly identical as could be expected, considering the rough nature of Professor Newcomb's measurements; but the azimuths in the columns A and A' differ from each other considerably, as shown in the column $A'–A$, and indicate an angle of about five degrees between the direction of the meridian employed by Professor Newcomb and that of the Admiralty chart. Adopting the meridian of the chart, I find the following reductions necessary in passing from the stations named to Buena Vista:

Station.	Reduction in Latitude.	Reduction in Longitude.
	′ ″	′ ″
Telegraph Office	— 1 25.8	— 0 26.7
American Consul's House .	— 1 7.6	— 0 16.6
Flag-Staff at Landing-Place .	— 0 26.5	— 0 22.6

The minus sign before a reduction in latitude, or longitude, indicates that the station to which it belongs is further north, or further west, than Buena Vista.

Professor Newcomb obtains from his observations the following results:*

Observations for Latitude.

Date.	Station.	Object.	No. of Altitudes.	Observed Latitude of Station.	Resulting Latitude of Buena Vista.
1870.				° ′ ″	° ′ ″
Dec. 15	Telegraph Office . . .	Sun . .	6	+ 36 8 25	+ 36 6 59.2
15	Telegraph Office . . .	Polaris .	5	8 25	59.2
20	Buena Vista Station . .	Sun . .	6	6 44	44.
26	American Consul's House	α Ceti . .	5	7 41	33.4
26	American Consul's House	Polaris .	6	8 12	64.4

Taking the means, I find

	°	′	″
From the Sun and α Ceti	+ 36	6	45.5
From Polaris			61.8

which seems to indicate that the observations are affected by a constant error amounting to 8″.1. Correcting for this error, I obtain finally

$$\text{Latitude of Buena Vista Station} = +36^\circ\ 6'\ 53''.6 \pm 2''.8$$

* For the observations in detail see pages 17 to 21.

Chronometer T. S. & J. D. Negus, No. 1265, fast of Local Mean Time by Observation.

Date.		Station.	Object.	Side of Meridian.	Number of Altitudes.	Correction to Chronometer.
	d.					h. m. s.
Dec.	14.95	Telegraph Office, Gibraltar . . .	Sun	E.	4	−0 22 8.7
	15.15	Telegraph Office, Gibraltar . . .	Sun	W.	7	16.3
	15.25	Telegraph Office, Gibraltar . . .	α Lyræ . . .	W.	4	16.1
	15.40	Telegraph Office, Gibraltar . . .	Jupiter . . .	E.	7	16.9
	15.42	Telegraph Office, Gibraltar . . .	α Andromedæ .	W.	2	16.8
	16.32	Telegraph Office, Gibraltar . . .	α Lyræ . . .	W.	5	14.6
	20.11	Buena Vista Station, Gibraltar . .	Sun	W.	3	19.1
			Observed with Portable Transit.			
Dec.	20.34	Buena Vista Station, Gibraltar . .	8 stars			−0 22 20.84
	21.36	Buena Vista Station, Gibraltar . .	7 stars			21.22
	22.42	Buena Vista Station, Gibraltar . .	7 stars			21.70
	23.01	Buena Vista Station, Gibraltar . .	1 star			22.7

The reduction of a chronometer correction from the Telegraph Office to Buena Vista is $+1^s.78$.

The length of the submarine telegraph cable between Malta and Gibraltar is 1025 knots = 1389 statute miles = 2235 kilometers. It is worked by means of condensers, no battery current being allowed to enter the line. The instruments employed for the purposes of communication are Sir William Thomson's reflecting galvanometers. For information as to the method of sending and receiving the longitude signals reference may be made to page 24 of Professor Newcomb's report and page 41 of Professor Hall's report. The following are the numerical details of the work:

Comparison of Chronometers obtained from the Signals received at Malta.

Date.	Number of Signals.	Negus 1228 at Malta.		Negus 1265 at Gibraltar.	$(T_e - T_w)$
1870.		h. m. s.		h. m. s.	h. m. s.
Dec. 15	18	4 47 43.68	=	4 48 0.00	−0 0 16.32
16	21	23 34 43.05	=	23 35 0.00	16.95

Comparison of Chronometers obtained from the Signals received at Gibraltar.

Date.	Number of Signals.	Negus 1228 at Malta.		Negus 1265 at Gibraltar.	$(T'_e - T'_w)$
1870.		h. m. s.		h. m. s.	h. m. s.
Dec. 15	18	4 55 0.00	=	4 55 17.34	−0 0 17.34
16	17	23 42 0.00	=	23 42 18.13	18.13

The probable error of a chronometer comparison obtained from the mean of eighteen signals is about $\pm 0^s.01$.

As the rates of the chronometers were small, I assume $\varDelta T_e = \varDelta T'_e$, and $\varDelta T_w = \varDelta T'_w$. The corrections of the chronometers at the times of exchanging signals have been obtained as follows: A simple interpolation among the numbers contained in the table on page 71 gives, for the correction to the Malta chronometer on December 15, $+ 0^h\ 57^m\ 28^s.72$. By means of the known difference of longitude, and the telegraphic comparison of chronometers, the Syracuse observations give, for the correction of the Malta chronometer on the same date, $+ 0^h\ 57^m\ 28^s.91$. The mean of these two results is $+ 0^h\ 57^m\ 28^s.82$, which I adopt. In the same way, on December 16 I find the correction of the Malta chronometer to be, from the Malta observations, $+ 0^h\ 57^m\ 29^s.22$, and from the Syracuse observations, $+ 0^h\ 57^m\ 28^s.78$. The mean is $+ 0^h\ 57^m\ 29^s.00$, which I adopt. The mean of Professor Newcomb's observations at Gibraltar, on December 15, gives, for the correction of his chronometer at $6^h\ 50^m$ p. m. on that day, $- 0^h\ 22^m\ 16^s.52$. A comparison of this correction with that obtained on December 20 gives, for the rate of the chronometer, $-1^s.21$ per day, allowance having been made for the difference of longitude between the Telegraph Office and Buena Vista. The correction of this chronometer, when it indicated $4^h\ 51^m$ p. m. on December 15, was therefore $- 0^h\ 22^m\ 16^s.42$. On December 16, at $7^h\ 45^m$ p. m., the observations make the correction $- 0^h\ 22^m\ 14^s.6$, and, by interpolating between this result and that of the day before, the correction at $11^h\ 38^m$ a. m. becomes $- 0^h\ 22^m\ 15^s.2$. If, on the other hand, we carry forward the correction from December 15 by means of the rate given above, we get $- 0^h\ 22^m\ 17^s.37$. Collecting our results, we have the following table of

Chronometer Corrections at the Time of the Exchange of Signals.

Date.	Negus 1228 at Malta.	Negus 1265 at Gibraltar.	$(\Delta T_e - \Delta T_w)$
1870.	h. m. s.	h. m. s.	h. m. s.
Dec. 15	+ 0 57 28.82	− 0 22 16.42	+ 1 19 45.24
16	29.00	15.2	44.2
16	29.00	17.4	46.4

Resulting Differences of Longitude and Wave Times.

Date.	$\frac{1}{2}(T_e - T_w)$	$\frac{1}{2}(T'_e - T'_w)$	$(\Delta T_e - \Delta T_w)$	$\Delta\lambda$	t
1870.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	s.
Dec. 15	− 0 0 8.16	− 0 0 8.67	+ 1 19 45.24	+ 1 19 28.41	+ 0.51
16	8.48	9.06	44.2	26.7	.58
16	8.48	9.06	46.4	28.9	

On December 13, 14, 15, and 16, Negus 1115 was compared with two other chronometers at Syracuse, and, by means of the telegraph, with the Malta chronometer also. These comparisons show, beyond all question, that the latter instrument was running regularly, and, from an interval of seven days, Professor Hall's observations give it a daily gaining rate of $0^s.09$, but my own observations make the rate zero. The telegraphic comparisons of this instrument with the Gibraltar chronometer, on December 15 and 16, show that the latter was certainly gaining not less than $1^s.00$ per day, while Professor Newcomb's time determinations on these days give it a losing rate of $1^s.89$. It therefore follows that at least one of the time determinations must be affected by a large error. That on December 15 depends upon observations of four different objects, three of them being to the west, and one to the east, of the meridian, and all giving nearly the same chronometer correction; while that on December 16 depends upon a single set of five altitudes of α Lyræ. Under the circumstances there cannot be the least hesitation in rejecting the latter, and with it the resulting value of $\varDelta\lambda$, which is $+1^h\ 19^m\ 26^s.7$. From the method employed in arriving at the other value of the Gibraltar chronometer correction on the same day, it is evident that the resulting $\varDelta\lambda$ depends almost wholly on the time determination of the 15th, and I therefore reject it also, and adopt the first value given in the table above, namely, $\varDelta\lambda = +1^h\ 19^m\ 28^s.41$.

The observations for time having been made with sextants, used in such a manner as to eliminate all

constant errors, I assume that they are free from personal equation. The probable errors of the chronometer corrections, on December 15, are as follows: At Malta $\pm$ 0^s.07, derived from the discrepancies between the adopted correction and the corrections given, respectively, by Professor Hall's observations and my own. At Gibraltar $\pm$ 0^s.13, derived from the discrepancies between the individual corrections and the mean of the whole. The probable error of the telegraphic comparison of chronometers is $\pm$ 0^s.01. Hence the probable error of $\Delta\lambda$ is $\pm$ 0^s.15.

Our final result for difference of longitude will therefore be:

	h	m	s
Telegraph Office, Malta, east of Telegraph Office, Gibraltar	1	19	28.41
Spencer's Monument, west of Telegraph Office, Malta		—	0.615
Flag-Staff at Landing-Place, east of Telegraph Office, Gibraltar . .		—	0.271
Spencer's Monument, Malta, east of Flag-Staff, Gibraltar	1	19	27.52 $\pm$ 0^s.15

X.—GEOGRAPHICAL POSITIONS DETERMINED BY THE UNITED STATES NAVAL OBSERVATORY PARTIES.

Collecting our results, and rejecting superfluous figures, we have the following

Table of Geographical Positions.

[North Latitudes and West Longitudes are taken as positive.]

Station.	Latitude.	Longitude in Arc from Greenwich.	Longitude in Time from Greenwich.	Longitude in Time from Washington.
	° ′ ″	° ′ ″	h. m. s.	h. m. s.
Flag-Staff at Landing-Place, Gibraltar .	+ 36 7 20	+ 5 20 45	+ 0 21 23.0	− 4 46 49.0
Buena Vista Station, Gibraltar	36 6 54	+ 5 20 22	+ 0 21 21.5	4 46 50.5
Spencer's Monument, Malta	35 52 59	− 14 31 8	− 0 58 4.5	6 6 16.5
Stone Gun-Platform, Syracuse	37 3 53	15 18 57	1 1 15.8	6 9 27.8
Prof. Harkness' Telescope, Syracuse. .	37 3 52	15 18 57	1 1 15.8	6 9 27.8
Prof. Eastman's Telescope, Syracuse. .	37 3 52	15 18 58	1 1 15.9	6 9 27.9
Mr. Brothers' Telescope, Syracuse . .	37 3 50	15 18 58	1 1 15.9	6 9 27.9
Light-House on Maniace Castle, Syracuse	+ 37 3 8	− 15 19 10	− 1 1 16.7	− 6 9 28.7

Owing to a break in the telegraph cable between Gibraltar and Lisbon, Professor Newcomb was unable to connect his station with Greenwich, and I have therefore made all our longitudes depend upon the position of the Flag-Staff, at the Landing-Place, in Gibraltar, which I have taken to be 0^h 21^m 23^s.0 west of Greenwich.

In order to show precisely how much the positions given by our observations differ from those heretofore adopted, I append the following list, which is made up from the latest English Admiralty charts. The columns dL and dM contain respectively the corrections which must be applied to the latitudes and longitudes of the charts in order to reduce them to our own.

Station.	Latitude.	dL	Longitude.	dM	Date of Chart.
	° ′ ″	″	° ′ ″	″	
Flag-Staff at Landing-Place, Gibraltar . .	+ 36 7 10	+ 10	+ 5 20 45	0	July 27, 1869
Spencer's Monument, Malta	35 53 0	− 1	− 14 31 0	− 8	Aug. 16, 1861
Light-House on Maniace Castle, Syracuse .	+ 37 3 0	+ 8	− 15 18 24	− 46	Dec. 10, 1869

XI.—MAGNETIC DECLINATION AT SYRACUSE.

In order to determine the magnetic declination, I made the following observations of the bearing of the Belvedere Tower, from the Stone Gun-Platform, with my prismatic compass, the card of which is divided to single degrees, and numbered from 0° to 360°; 0° corresponding to the magnetic south, and the numbers increasing toward the west. It has an index error of + 0°.6. The true bearing of the Belvedere Tower was N. 68° 23′ W. = 111°.6.

Date.	Time.	Magnetic Bearing of the Belvedere Tower.	Resulting Magnetic Declination.
1870.		°	°
Dec. 16	4.00 p. m.	124.0	12.4 west
17	12.30 p. m.	124.0	12.4 west
18	9.40 a. m.	124.0	12.4 west
21	8.10 a. m.	123.9	12.3 west

Taking the mean, we have

Observed magnetic declination	12° 22′ west.
Correction for index error of compass	— 36′
True magnetic declination	11° 46′ west.

The probable error of this result I estimate at ± 8′.

XII.—OBSERVATIONS ON THE DAY OF THE ECLIPSE.

Before describing the observations on the day of the eclipse, I must not forget to mention that, without even a hint from us that such a thing would be desirable, the Prefect most kindly directed the military commandant, Lieutenant Colonel Augusto Rossi, to furnish a sufficient number of troops to insure the maintenance of order and quiet in the neighborhood of our observing station on that occasion. For this purpose the bastion was guarded by a battalion of infantry from a little before noon till after the eclipse was over, and, although a great crowd of people gathered in the street opposite, we were enabled to make our observations without any interruption. We owe the Prefect and Lieutenant Colonel Rossi sincere thanks for their thoughtfulness in contributing to our success.

While at Malta I was so fortunate as to make the acquaintance of Captain G. L. Tupman, of the Royal Marine Artillery, who was at that time attached to the English iron-clad ship of war Prince Consort. Being an enthusiastic amateur astronomer, he became interested in our expedition and most generously volunteered to assist me in the spectroscopic observations, by directing the finder of my telescope to the various parts of the corona which it might be desirable to examine. He arrived in Syracuse on the morning of Wednesday, December 21, and rendered most efficient service, not only during the eclipse itself, but also in much of the preliminary and subsequent work. His letter describing his observations forms Addendum D to this report, and it affords me great pleasure to place on record an acknowledgment of the obligations which the expedition owes to him.

For eight days after our arrival in Sicily the weather was superb; but on December 20 a change took place, the barometer began to fall, the wind began to rise, and, although at times the heavens were perfectly clear, still for the most part they were either completely overcast or else flecked with drifting clouds, and this state of affairs continued long after we left Syracuse. However, at the beginning of the eclipse the sky in the neighborhood of the sun was perfectly clear, and I observed the first contact with my three-inch telescope, armed with a Huygenian eye-piece magnifying 65½ diameters, at $11^h\ 35^m\ 27^s.5$ by the face of the chronometer Negus 1115. As the eclipse advanced I looked very carefully for the bright line which was shown in such a marked manner along the edge of the moon's limb in the photographs taken by Dr. Curtis, at Des Moines, in August, 1869, but, although I used both red and neutral tint shade glasses, and the definition in the telescope was excellent, I could not see any trace of it till $12^h\ 8^m$, when I fancied I saw a very faint and narrow bright line, but I am far from being certain that such a line really existed. In fact, I am inclined to think it was only the effect of contrast between the bright sun and the dark moon.

With the assistance of Captain Tupman, about $12^h\ 20^m$ I attached the spectroscope to the telescope, applied the necessary counterpoises, placed the slit so that it was inclined from a vertical circle about ten or fifteen degrees toward the north, and adjusted the needle in the finder so that when its point fell upon a horn of the solar crescent the image of that horn fell accurately within the jaws of the slit. A quarter of an hour before totality a dense cloud came over the sun and hid it entirely. The wind was blowing half a gale, and although my telescope, with its solid substantial mounting, was under the lee of the parapet of the bastion, it was far from being so steady as was desirable. When I tried to light my lanterns I found it was impossible, even in the most sheltered place, and I was obliged to take them into the store-house and light them there. In carrying them back to the telescope one was blown out, but by crouching down behind the parapet and sheltering it with our bodies, Captain Tupman and I succeeded in lighting it again, after which I attached it to the spectroscope to illuminate the micrometer scale. It was now within less than five minutes of totality, and fortunately the cloud covering the sun was fast becoming thinner. Presently a slender crescent, which was all that remained of the solar disk, became visible, dwindled rapidly away, and at $1^h\ 0^m\ 11.^s0$ I observed the commencement of totality with my naked eye. The cloud was sufficiently transparent to allow the corona to be seen through it, but, of course, much diminished both in extent and brilliancy, and I do not think it was more than half or two-thirds as extensive as that which I witnessed at Des Moines in August, 1869. On that occasion it had a well-marked trapezoidal form, but this time it seemed to me to be nearly circular; however, my view of it was limited to a mere glance at the commencement of totality, and it may have appeared differently afterward. The general illumination of the atmosphere was considerable; in fact, it was not really dark, for, in addition to the outlines of objects, the details were also visible to a considerable extent.

I spent the first ten or fifteen seconds of the totality in examining the corona with an Arago polariscope. This instrument consists of a plate of selenite and a double-image prism, placed almost in contact with each other, and mounted in a brass cell, 0.43 of an inch thick, for the purpose of slipping on to an eye-piece, so that it may be used for telescopic observation. The eye-piece contains a diaphragm of such diameter that when it is seen through the polariscope two circular fields of view appear, tangent to each other; and if polarized light is present these fields of view are of complementary colors. When the cell is removed from the eye-piece its field of view has no longer any well-defined boundary, and if a beam of polarized light is then examined with it the effect of the prism will be to displace one portion of the beam upon another, and no complementary colors can appear except at the very edge of the field. Now, bearing in mind that the separating angle of the prism is $2°\ 31'$, let us apply this to the case of the eclipse. Looking at the corona through the polariscope, two images of it will be seen well separated from each other, and everywhere else one portion of the sky will be displaced upon another portion $2°\ 31'$ distant. Under these circumstances, no matter whether the sky is polarized or not, it can exhibit only its natural color, unless, indeed, the polarization varies so rapidly that its difference at points $2°\ 31'$ apart is sensible in the instrument. If the corona is polarized in the same plane, and to precisely the same extent, as the surrounding sky, the two images of it will also appear of their natural color; but if it is either more or less polarized than the surrounding sky these images will be of complementary tints, and the arrangement of the tints will show whether the polarization is radial or confined to a single plane. In order to discriminate between the cases where the corona is polarized to an extent different from the surrounding sky, or not polarized at all, it will be necessary to examine it with the same polariscope, provided with a diaphragm so arranged as to exhibit two fields of view tangent to each other. Then, if the corona is polarized, the two images will be of complementary tints, while if it is not polarized, they will be of their natural color. The experiments I tried were therefore as follows: First I employed the polariscope provided with a diaphragm, and I saw that in each field the sky and the corona were of the same tint, but in the two fields these tints were complementary to each other. Next I employed the polariscope without the diaphragm, and I then saw the sky of its natural color, and the two images of the corona also of their natural color. Clearly, the inference to be drawn from these observations is that, so far as the instrument was capable of determining, the light from the sky and that from the corona were polarized to the same extent; and knowing that the polarization of the sky is produced in our own atmosphere,* I infer that that of the corona had the same origin, and there-

* It may be objected that under the circumstances of a total eclipse we do not know that the polarization of the sky is produced in our atmosphere, because the light of the sky will then be principally due to the corona, and if the light of the latter is polarized that of the former must also be so. To this I reply that the quantitative observations made at Syracuse by Mr. G. Griffith, of the English Expedition, show that the amount of polarization increased from the moon's center outward; a fact which can only be accounted for by supposing the polarization to be effected in our atmosphere.

fore that when the light was emitted from the corona it was not polarized at all. As the tints were faint it was difficult to determine the plane or planes of polarization, and I could not spare time for the attempt.

Dropping the polariscope, I sprang to the spectroscope, and Captain Tupman directed it to the corona. I at once saw a green line, but the wind had blown out the lantern which illuminated the micrometer scale, and, in order to determine the position of the line, I seized my second lantern, which was standing in a sheltered place, held it to the spectroscope, glanced in, saw that the reading was about the same as at Des Moines in 1869, and before I could determine it accurately the wind blew out this lantern also, and I was deprived of all means of making exact measures. However, there cannot be the slightest doubt that the line in question was the now famous 1474, whose wave length is 531.6 millionths of a millimeter. Captain Tupman then directed the spectroscope to many different parts of the corona, and wherever the light was sufficiently bright to show anything I saw the same green line. It is difficult to say precisely how far I traced it from the sun, but certainly to a distance not less than from ten to fifteen minutes. Once I saw two other fainter green lines, of a less degree of refrangibility, which I am pretty confident also belonged to the corona. In addition to these, I several times saw a complete hydrogen spectrum, and on each occasion, supposing it to be due to a prominence, I taxed Captain Tupman with having the needle point of the finder near one of them. Once or twice he admitted that such was the case, but in one or two other instances he denied it. Feeling certain that the lines were produced by prominences, I paid little attention to the circumstance at the time; but on talking over the subject with the Captain afterward, he assured me that on at least one occasion I accused him of having the pointer near prominences when such was not the case. This puzzled me considerably, but after a little reflection I hit upon what I think is the true explanation. The slit of the spectroscope had a length of 0.20 of an inch, which, with the telescope employed, would give a field of view 15′ 46″ high. Hence, when the slit was radial to the sun, one end of it might easily be upon a prominence when the needle point in the finder was eight minutes distant from it. During the last few seconds of totality the thin cloud covering the sun became nearly dissipated, and the faint, continuous spectrum of the corona became visible, but before there was time to examine it the totality was over. Notwithstanding the evidence of the chronometer, I could scarcely believe it had lasted one hundred and two seconds. It seemed to me but a moment, and I felt far from satisfied with what I had accomplished. The high wind and the thin cloud over the sun placed me at a great disadvantage, and prevented me from doing much that would have been easily within my grasp under more favorable circumstances.

Five minutes after the totality was over the sky in the neighborhood of the sun became perfectly clear and remained so till the last contact, which I observed at $2^h\ 19^m\ 0^s.0$. It will be noticed that this time is considerably earlier than that given by Professors Hall and Eastman, but, unless I made a mistake of ten seconds in reading the chronometer, I am unable to explain the cause of the difference. The wind had gone down, so that my telescope was as steady as the ground on which it stood; the definition was admirable, the power 65½, and I left the eye-piece under the impression that I had recorded the contact perhaps a little too late.

I believe the following table contains all the times of contact observed at Syracuse. The different columns explain themselves. The adopted local mean time depends upon the correction derived from my own observations for the chronometer Negus 1115. Professor Hall's observations to determine the error of the chronometer Negus 1228 would make all these times $0^s.5$ earlier.

Times of Contact between the Limbs of the Sun and Moon, observed at Syracuse, Sicily, during the Total Solar Eclipse of December 22, 1870.

Observer.	Chronometer.	Contact.	Observed Time.	Local Mean Time.
			h. m. s.	h. m. s.
Eastman. . . .	Negus 1340	First .	11 39 12.	0 38 18.2
Griffith	Negus 1256	First .	37 30.	38 35.4
Hall	Negus 1228	First .	37 35.	38 13.5
Harkness . . .	Negus 1115	First .	35 27.5	38 13.2
Tupman	Negus 1115	First .	35 30.	38 15.7
Eastman. . . .	Negus 1340	Second .	1 3 51.0	2 2 57.1
Griffith	Negus 1256	Second .	1 51.	2 56.4
Hall	Negus 1228	Second .	2 17.5	2 56.0
Harkness . . .	Negus 1115	Second .	0 11.	2 56.7
Tupman. . . .	Negus 1115	Second .	0 9.5	2 55.2
Eastman. . . .	Negus 1340	Third .	1 5 32.5	2 4 38.6
Griffith	Negus 1256	Third .	3 37.	4 42.4
Hall	Negus 1228	Third .	4 0.	4 38.5
Tupman. . . .	Negus 1115	Third .	1 55.	4 40.7
Eastman. . . .	Negus 1340	Fourth .	2 22 53.5	3 21 59.4
Griffith	Negus 1256	Fourth .	20 34.	21 39.4
Hall	Negus 1228	Fourth .	21 20.5	21 59.0
Harkness . . .	Negus 1115	Fourth .	19 0.	21 45.7*

* Probably there was a mistake of 10^s in reading the chronometer, and this should be $3^h\ 21^m\ 55^s.7$.

Having thus stated the facts, it only remains to consider what light they throw upon solar physics and the phenomena exhibited during eclipses. This we will now proceed to do.

Origin of the Bright Line seen along the Projection of the Moon's Limb upon the Solar Disk in Photographs of Eclipses.—This line seems to have been observed upon all photographs of solar eclipses hitherto taken, and its cause has been the subject of much discussion, in which such eminent men as Mr. Airy, Professor Challis, and Mr. De La Rue have participated. After the eclipse of August, 1869, Professor Henry Morton examined the question, and made some experiments which showed pretty conclusively that the phenomenon is a chemical effect produced in developing the photograph;* while, on the other hand, Dr. Edward Curtis, in his report on the same eclipse,† described other experiments tending to show that it is due to diffraction, and this view he further supported by a note from Dr. F. A. P. Barnard, in which an attempt is made to show that such a bright line was to be expected as a consequence of the undulatory theory of light. Finally, in March, 1870, Professor Edward C. Pickering made a critical examination of Dr. Barnard's theory, and showed most conclusively from Fresnel's equations that diffraction was not capable of producing the effect which had been attributed to it.‡ Under these circumstances the inquiry naturally arose whether or not the line was visible to the eye during the progress of an eclipse. Here again the evidence was contradictory, Professor Stephen Alexander affirming that he saw it in 1831, and again at Labrador in July, 1860,§ while Professor Smith was unable to detect it in August, 1869. I therefore made it an object of special attention during the eclipse of last December, and, as already stated, I failed to find it. On the whole, I think we are entitled to conclude that the line has no real existence during an eclipse, and that Professor Morton's explanation of its presence on the photographs is the true one.

Is the Light of the Corona Polarized prior to entering the Earth's Atmosphere?—As already stated, my observations tend to answer this question in the negative; but the evidence afforded by other observers is so conflicting that the matter cannot be regarded as settled, and must be an object of further investigation in future eclipses.

Spectrum of the Corona.—All parts of the corona which are sufficiently near the sun give a faint but abso-

* Journal of the Franklin Institute, December, 1869, Vol. 58, p. 373.
† Washington Observations for 1867, Appendix II, pp. 135 to 141.
‡ Journal of the Franklin Institute, April, 1870, Vol. 59, p. 264.
§ United States Coast Survey Report for 1860, p. 241.

lutely continuous spectrum, crossed by a single bright line, whose wave length is 531.6 millionths of a millimeter; and as the spectroscope is moved outward from the sun the light gradually vanishes, the continuous spectrum disappearing first, and afterward the bright line. Judging from Professor Young's observations in August, 1869, and from Father Denza's and my own in December, 1870, I feel pretty certain that some parts of the corona give in addition two other bright lines in the green, which are fainter and less refrangible than that whose wave length is 531.6. The origin of the faint continuous spectrum I attribute mostly to the presence of a little comparatively cool hydrogen in those parts of the corona nearest the sun, but it may also be partially due to the substance which gives the bright line. This latter substance I am inclined to think is most probably incandescent vapor of iron, but it would not be surprising if it turned out to be a new element.

Physical Constitution of the Corona.—That the corona is partially self-luminous, emitting light whose wave length is 531.6, is now universally conceded; but at least one high authority seems to hold the opinion that the self-luminous portion does not extend more than from two to six minutes above the surface of the sun, and that all parts of the corona outside of that limit are produced by means of reflection taking place at some point not definitely specified. Let us examine this theory. If there is any reflection in the case it must happen in one of three places, namely: 1. In the earth's atmosphere, under which term I include a space extending not more than one hundred miles from the earth's surface; 2. Between the upper limit of the earth's atmosphere and the moon; or 3. In the neighborhood of the sun.

Before considering where the reflection takes place, it will be well to comprehend clearly the circumstances under which reflection is possible. Fortunately, on this point the experiments of Professor Tyndall are perfectly decisive. By passing a powerfully condensed beam of electric light through his experimental tubes he found that no matter whether they were filled with air, gas, or vapor, so long as they contained neither dust, motes, nor other solid or liquid particles, they scattered no light, and it was only when such particles were produced within them that the presence of the electric beam became sensible.* We are therefore certain that air, and many other gases and vapors—probably all matter in the gaseous state—is absolutely incapable of reflecting any light whatever. Thus the theory that twilight is partly due to the reflection of the sun's rays by the atmosphere falls to the ground, and we learn that the only reflecting agents are impalpable dust and liquid particles. Hence, the duration of twilight gives us a measure, not of the height of the earth's atmosphere, but of the height to which dust and liquid particles extend in that atmosphere. We shall have occasion to apply this principle presently.

The heat of the oxy-hydrogen flame is sufficient to volatilize almost all known substances, but it will not suffice to render any gas incandescent. For that purpose the electric spark must be employed. We are therefore certain that the heat required to produce a gaseous spectrum is far greater than that required to volatilize any of the elements; and as the spectroscope shows that that part of the corona universally admitted to be self-luminous is composed of incandescent gas, we are entitled to conclude, with a degree of probability amounting almost to certainty, that no solid or liquid matter can exist in its neighborhood. But it has been already shown that gaseous matter is incapable of reflecting light, and it therefore follows that no part of the corona can be due to reflection taking place at or near the sun. This view is also supported by the fact that what little polarization is found in the light of the corona seems to be produced in the earth's atmosphere.† Furthermore, as the light of the photosphere exceeds that of the chromosphere at least 500,000 times, if any reflection takes place between the sun and a point, say, one hundred miles above the earth's surface, we should expect the light so reflected to be that of the photosphere, but no photospheric light has ever been detected in any part of the corona. Professor Young has indeed said that the continuous spectrum of the corona is partly due to such light, and has even given reasons to account for the absence of Fraunhofer's lines in it;‡ but nearly two years ago I suggested that this continuous spectrum was probably due to cool hydrogen,§ and lately Mr. Lockyer has succeeded in showing experimentally that this gas when at a comparatively low temperature does yield a continuous spectrum, together with the bright line F, and, if I do not misunderstand him, he also is now of the opinion that it is the cause of the continuous spectrum of the corona.|| On the whole, it seems certain that there is no reflection anywhere between the surface of the sun and the moon's orbit.

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* See Tyndall's Fragments of Science, pp. 246 and 306.

† It will be observed that no matter whether the light of the corona is polarized near the sun or in the earth's atmosphere, we should expect the polarization to be radial.

‡ American Journal of Science, [3,] Vol. I, p. 311, and Vol. II, p. 53.

§ Washington Observations for 1867, Appendix II, foot-note on page 65.

|| Nature, Vol. IV, p. 250.

The whole tendency of modern discovery is to show that the earth's atmosphere has a definite upper limit; but, in order to make as strong a case as possible for the theory that part of the corona is produced by reflection taking place between the moon and the earth, we will suppose that it extends to, or beyond, the moon's orbit. Then we may compute the density of the atmosphere which the moon would be capable of gathering about itself as follows: Taking the diameter of the earth to be 7926 miles, that of the moon to be 3963 miles, and the moon's mass to be 0.0114 that of the earth, it can be shown that at an elevation of 6120 miles above the earth's surface terrestrial gravity will be reduced to an equality with that existing at the moon's surface. If we assume that the laws which govern the expansion of gases near the earth's surface still hold at that altitude, Laplace's barometrical formula will give for the atmospheric pressure there $\frac{6}{10^{210}}$ of an inch of mercury,* which will also be the pressure at the moon's surface.

If we let

N = number of particles in a unit of volume of any gas;

M = mass of each particle;

v = velocity of each particle;

then it can be shown from the mechanical theory of gases that, at the same pressure and temperature, both N and Mv^2 are constant for all gases.† It is well known that the luminiferous ether behaves in many respects more like a solid than a gas, and that the vibrations of sound are longitudinal, while those of light are transversal; but, for the sake of getting a rough approximation to the *order* of density of the luminiferous ether, we will assume that this ether is a gas, and that the velocity of light in it is the same function of its v that the velocity of sound in oxygen and hydrogen gas is of their v's. The best authorities give, for the specific gravity of oxygen, 1.1056, and for the velocity of sound in it, 317.0 meters per second; for the specific gravity of hydrogen, 0.0693, and for the velocity of sound in it, 1269.1 meters per second. These numbers give, for oxygen, $\log Mv^2 = 5.0456$; and for hydrogen, $\log Mv^2 = 5.0477$. The mean is, $\log Mv^2 = 5.0466$, which I adopt.‡ In order to avoid all questions of pressure and temperature, I take as the velocity of light the value found by M. Foucault, from experiments made in the Paris Observatory, namely 298,000,000 meters per second.§ Taking air as unity, this gives for the specific gravity of the luminiferous ether $\frac{125}{10^{14}}$; and as air at the earth's surface supports a column of mercury 30 inches high, it will follow that under the same circumstances the ether would suppor a column $\frac{376}{10^{13}}$ inches high. Taking into consideration the fact that the velocity of light found by Foucault in the rooms of the Paris Observatory scarcely differs from that found in space by means of the eclipses of Jupiter's satellites, I think we must admit that the density of the luminiferous ether is not affected by gravity, and that it will probably be the same at the moon's surface as at the earth's surface. Now, comparing the density just found for this ether with that computed for the atmosphere at the moon's surface, it will be seen that the former is 62×10^{197} times greater than the latter!

No one can be more sensible than myself of the very great uncertainty to which these figures are liable; but after making an enormous allowance for the effect of errors, they would still suffice to prove that the moon is not capable of retaining an atmosphere such as ours, even if she had once been provided with it, and that beyond a comparatively short distance from the earth's surface no matter possessing the power of reflecting light can possibly exist, unless moving with a velocity comparable with that of the planets.

We naturally come next to the consideration of Oudeman's theory, which he states thus: "Both the corona and its beams have the same origin as the zodiacal light."|| As the origin of the zodiacal light is one of the greatest enigmas of astronomy, this explanation would be somewhat difficult to understand, were

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* As some copies of this report will fall into the hands of persons whose scientific attainments are but moderate, and to whom the notation $\frac{6}{10^{210}}$ may not be familiar, perhaps it will be well to write this quantity out as a decimal fraction. It will then stand thus: 0.0000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000000-
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0006.

† Illustrations of the Dynamical Theory of Gases, by Professor J. C. Maxwell. L. E. & D. Phil. Mag., 1860, Vol. XIX, p. 30.

‡ Strictly, these numbers are not the logarithms of Mv^2, but of Mv^2 multiplied by an unknown constant.

§ Comptes Rendus, Nov., 1862, p. 796.

|| Nature, Vol. III, p. 26.

it not that in another part of his article he attributes its production to "particles which float in the ether" between the earth's atmosphere and the sun, and thus reflect the solar light to us. As already shown, the duration of twilight furnishes an accurate measure of the height above the surface of the earth at which particles capable of reflecting the sunbeams can float, and the result obtained in this way is usually considered to be 45 miles. I am not aware that any observations have ever been made which give a result so great as 100 miles. Employing Laplace's barometrical formula as before, and expressing the density of the air in terms of the height of the column of mercury which it can sustain, I find the density at 45 miles elevation to be 0.0038 of an inch, and at 100 miles $\frac{87}{10^9}$, or 0.000000087, of an inch. As the least of these densities is more than 2300 times greater than that found above for the luminiferous ether, it does not seem possible that particles of any known substance can float in it. If any particles exist they must therefore be moving in orbits about either the moon, the earth, or the sun—in other words, they must be meteoroids. The richest stream of these bodies of which we have any knowledge is that through which the earth passes annually on or about November 13, but the most condensed portion of that stream is only encountered once in thirty-three years. Our last encounter with it was on the night of November 13–14, 1867, and on that occasion, during the thickest of the shower, the officers on duty at this Observatory counted the falling meteors at the rate of 3000 per hour; from which Professor Newcomb found that on an average there was one meteoroid in 900,000 cubic miles of space*. Clearly, even if the stream were increased in density a hundred-fold, the sun-light which it would be capable of reflecting could not produce any continuous illumination however faint. Thus, then, all the facts within our knowledge seem to point to the conclusion that no reflecting substance which can have any influence in the production of the corona exists between the earth's atmosphere and the sun.

Now let us examine the phenomena which are relied upon to prove that the origin of some part of the corona is due to reflection taking place in the earth's atmosphere. These phenomena may be classed as follows: 1. Drawings of the corona of one and the same eclipse made by persons at different places differ from each other greatly. 2. During the eclipse of last December, Professor Peirce, stationed two miles from Catania, Sicily, saw the outer corona tinged rosy-red over the prominences—a place where no intensely heated hydrogen could possibly exist.† 3. During the same eclipse, Professor Young, stationed at Xeres, in Spain, saw the line C, 6′ or 7′ from the sun, far above any possible hydrogen atmosphere;‡ Mr. Perry, also in Spain, saw a hydrogen spectrum 8′ away from the sun;§ and some observer in Spain, ‖ about whom I have not been able to get any definite information, seems to have seen a hydrogen spectrum upon the face of the dark moon itself.

The light here referred to as giving rise to some part of the corona by reflection in the earth's atmosphere, I understand to be that of the chromosphere and corona itself. The theory that direct sun-light might be so reflected was discussed in my report on the eclipse of August, 1869,¶ and it is not necessary to refer to it again at present, more especially as I believe it is now universally admitted that such a theory is entirely untenable.

In reply to the first class of evidence adduced above to prove reflection, I would urge that no reliable deductions can be obtained from the differences existing between drawings made at places some distance apart, because it is well known that fully as great differences are seen in drawings made by persons stationed within a few feet of each other. An excellent illustration of this was furnished during the eclipse of last December. A fleet of one Italian and five English vessels of war were at Aci Reale, on the coast of Sicily, trying to save the English dispatch-vessel Psyche, and many drawings of the corona were made by the officers of these vessels; but, judging from the published account, no two of them were alike. In fact, two sketches made on the deck of the same ship, the Lord Warden, were so different that it could not have been supposed they were intended to represent the same object.** These differences probably arose partly from want of artistic skill, and still more from the bewildering effect of the strange and exciting phenomena of a total eclipse witnessed, perhaps, for the first time. I have seen so many instances of amateurs making

* United States Naval Observatory Reports on the November Meteors of 1867, p. 11.
† Nature, Vol. III, p. 222.
‡ Nature, Vol. III, p. 261.
§ Nature, Vol. III, p. 223.
‖ Quoted by Mr. Lockyer in Nature, Vol. III, p. 223.
¶ Washington Observations for 1867, Appendix II, p. 64. See also Proctor's Work on the Sun, p. 357.
** Nature, Vol. III, pp, 222 and 223.

magnificent sketches of celestial phenomena, which could not possibly have existed, that I confess I have little confidence in any delineations of the corona not made by trained observers who were at the same time competent draughtsmen. Furthermore, it is a matter of common experience that whenever a bright object is seen on a dark ground, that object will appear to be surrounded by a greater or less number of very distinct rays. Yet no one imagines these rays to be real. They are purely subjective, and can be made to disappear from the most dazzling object by looking at it through a dark glass, or from a moderately bright object by viewing it through a telescope of low power. That the corona exhibits real rays cannot be doubted, because they have been photographed; but, as it is a bright object on a dark ground, when viewed by the naked eye it will surely be surrounded by some spurious ones also, and therefore no confidence can be placed in the reality of the existence of any *faint* rays which have not been seen by means of a telescope or opera-glass. To recapitulate, the conditions necessary for the production of a trustworthy drawing of the corona are, that the person making it shall be a trained observer and competent draughtsman, and that no details shall be recorded which are not visible through an opera-glass.

Mr. Lockyer, in two very able papers relative to the eclipse of last December, has said that although Mr. Brothers' photographs taken at Syracuse show such vast rifts in the corona, none of these rifts were *seen* by any of our party; and to this statement he appears to attach considerable importance.* I regret to say that he is in error as to the facts. The great rift was seen by Professor Hall, and is mentioned in his report.†

As to the second and third classes of evidence adduced above to prove that part of the corona is due to reflection taking place in the earth's atmosphere, I have only to say that they apply solely to the eclipse of last December, which happened at a time when the heavens were thick with haze and clouds of all kinds, and no one has ever for an instant thought of denying that light passing through such an atmosphere must be more or less reflected. Manifestly these proofs have no application to the case of a clear and transparent sky, and there is not the slightest reason to suppose that the aspect of the corona seen in such a sky would be any more altered by it than that of a nebula, or the moon, seen under the same circumstances.

In view of the evidence which has been discussed, it seems safe to conclude that when the sky is perfectly clear there is nothing between the eye of the observer and the solar surface which can appreciably alter either the appearance or extent of the corona; and under such circumstances, anything seen in it by the aid of a properly adjusted telescope may be confidently received as representing phenomena occurring at the sun; but if the observations are made with the naked eye the real phenomena will almost certainly be more or less complicated by subjective appearances depending upon irradiation.

From the time of Dr. Wyberd in 1652, down to the present moment, there have not been wanting persons who say that the corona exhibits a rotary motion, but, as these statements are expressly contradicted by nearly all observers of known skill, it is not necessary to consider them further here. There still remains another class of phenomena which cannot be dismissed so summarily, because their existence has been affirmed by astronomers of the very highest reputation. I allude to variations in the brightness of the corona, and to rays, beams, or rifts in it. Otto Struve, observing at Lipesk in 1842, found the corona so bright that the naked eye could scarcely endure it. Mr. Airy has been fortunate enough to witness several total eclipses, and he testifies that the corona was much brighter in some of them than in others. The experience of the officers belonging to this Observatory is the same; the corona appeared much brighter in August, 1869, than in December, 1870. The existence of rays, streamers, and rifts in it is a matter of common notoriety. How are these appearances to be explained? Do we know of any other similar phenomena depending upon ascertained causes? I think we do. The sun is surrounded by a red hydrogen atmosphere, which varies in depth, just as the corona does. The outline of this atmosphere is broken by vast protuberances, corresponding to the rays, or streamers, of the corona. These protuberances vary in position, extent, and number, just as the rays or streamers do. And finally, these proturberances are sometimes brighter, sometimes fainter, depending upon the temperature of the hydrogen composing them, just as the rays of the corona vary in brightness. The analogy is complete, and, if we assume that the luminous gas composing the corona is ejected from the sun in the same manner as the red prominences, all the observed facts will be accounted for; even to such an extreme case as that exhibited in the picture made by Mr. Gilman at Sioux City, Iowa, in August, 1869‡—a picture, by the way, of whose accuracy I am convinced. Moist steam issuing

* Nature, Vol. III, p. 223, and Vol. IV, p. 232.

† See page 29 of these reports.

‡ Washington Observations for 1867, Appendix II, plate 12.

from a boiler at the very moderate pressure of fifty pounds per square inch develops torrents of electricity. The best information we possess indicates that the hydrogen of the red prominences is belched forth with a velocity of about one hundred and twenty miles per second, and it does not seem unreasonable to suppose that it may carry with it a little spray. If it does, then, judging from analogy, the friction of this spray against the mouth of the crater from which it is escaping will probably generate electricity in quantities of which we can have simply no conception, and it may very likely play some part in the production of the long streamers of the corona. In conclusion, the theory which I propose may be stated as follows:

When seen in a clear sky, the corona is a purely solar phenomenon, produced by a vast body of self-luminous gas—not improbably incandescent vapor of iron—which envelopes the sun and is erupted from it in the same manner as the red prominences.

Very respectfully,

WM. HARKNESS,
Professor of Mathematics, U. S. Navy.

Rear-Admiral B. F. SANDS, U. S. N.,
Superintendent U. S. Naval Observatory, Washington, D. C.

ADDENDUM A.

Observations of the Sun for Time, made on the Stone Gun-Platform at Syracuse, Sicily, by Professor William Harkness, U. S. N., with the Sextant Stackpole & Brother No. 937, *Mercurial Artificial Horizon Ha.* 1, *and Chronometer T. S. & J. D. Negus No.* 1115.

[NOTE.—The barometer employed was a pocket aneroid, 1.9 inches in diameter, marked L. Casella, London, No. 1128. It was compensated for temperature, and, in order to reduce its observed readings to the corresponding readings of a mercurial barometer at 32° F., it is only necessary to subtract from them 0.12 of an inch.]

SUN . .	DECEMBER 13, 1870.	
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 50
	0	45
	0	45
Index Corr.	− 0 23.4	
E	+ 7.7	
Index Corr., &c.	− 0 15.7	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	47 45 0	8 52 35.0
	48 0 0	53 50.0
	15 0	55 6.0
	47 30 0	56 51.5
	45 0	58 9.0
	48 0 0	59 27.0
Means	47 52 30.0	8 55 59.8
Index Corr., &c.	− 15.7	
Ω	47 52 14.3	
Refraction	− 2 8.2	
Parallax	+ 8.2	
		° ′ ″
Polar Distance of Object		113 9 48.2
		h. m. s.
Local Apparent Time		10 4 22.5
Equation of Time		− 5 39.8
Local Mean Time		9 58 42.7
Time by Chronometer		8 55 59.8
Chronometer slow of Local M. T. .		1 2 42.9
These observations were made before noon.		

SUN . .	DECEMBER 13, 1870.	
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 50	359 27 45
	33 0	40
	10	40
Index Corr.	− 0 20.8	
E	+ 8.1	
Index Corr., &c.	− 0 12.7	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	50 0 0	9 4 25.5
	10 0	5 21.0
	20 0	6 14.0
	49 30 0	7 41.5
	40 0	8 36.8
	50 0	9 35.0
Means	49 55 0.0	9 6 59.0
Index Corr., &c.	− 12.7	
Ω	49 54 47.3	
Refraction	− 2 2.3	
Parallax	+ 8.2	
		° ′ ″
Polar Distance of Object		113 9 50.0
		h. m. s.
Local Apparent Time		10 15 22.4
Equation of Time		− 5 39.6
Local Mean Time		10 9 42.8
Time by Chronometer		9 6 59.0
Chronometer slow of Local M. T. .		1 2 43.8
These observations were made before noon.		

ADDENDUM A—Continued.

SUN . . . DECEMBER 13.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 10	359 27 40
	10	40
	0	40
Index Corr.	− 0 23.4	
E	+ 8.5	
Index Corr., &c.	− 0 14.9	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	51 50 0	9 14 56.5
	52 0 0	15 56.5
	10 0	16 57.5
	51 20 0	18 31.0
	30 0	19 36.5
	40 0	20 36.5
Means	51 45 0.0	9 17 45.8
Index Corr., &c.	− 14.9	
Ω	51 44 45.1	Ther. 63°.
Refraction	− 1 57.4	
Parallax	+ 8.1	Bar. 30.27 in.
		° ′ ″
Polar Distance of Object . . .		113 9 51.8
		h. m. s.
Local Apparent Time		10 26 8.9
Equation of Time		− 5 39.4
Local Mean Time		10 20 29.5
Time by Chronometer		9 17 45.8
Chronometer slow of Local M.T. .		1 2 43.7

These observations were made before noon.

SUN . . . DECEMBER 13,		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 50	359 27 40
	40	50
	35	50
Index Corr.	− 0 14.2	
E	+ 3.0	
Index Corr., &c.	− 0 11.2	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	22 45 0	2 25 9.5
	30 0	26 0.0
	15 0	26 49.5
	22 45 0	28 45.5
	30 0	29 35.5
	15 0	30 25.5
Means	22 30 0	2 27 47.6
Index Corr., &c.	− 11.2	
Ω	22 29 48.8	
Refraction	− 4 39.2	
Parallax	+ 8.8	
		° ′ ″
Polar Distance of Object . . .		113 10 43.3
		h. m. s.
Local Apparent Time		3 36 3.7
Equation of Time		− 5 33.2
Local Mean Time		3 30 30.5
Time by Chronometer		2 27 47.6
Chronometer slow of Local M.T. .		1 2 42.9

These observations were made after noon.

NOTE.—The observations before noon on December 13 were made at the Prima Porta Terra, which is $0^s.13$ east of the Stone Gun-Platform.

ADDENDUM A—Continued.

SUN . . . DECEMBER 13.		
	On Arc = ω.	Off arc = ω^1.
	′ ″	° ′ ″
	32 45	359 27 50
	45	28 0
	50	28 0
Index Corr.	− 0 21.7	
E	+ 2.7	
Index Corr., &c.	− 0 19.0	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	20 45 0	2 31 49.0
	30 0	32 38.0
	15 0	33 27.5
	20 45 0	35 20.5
	30 0	36 10.5
	15 0	36 59.0
Means	20 30 0.0	2 34 24.1
Index Corr., &c.	− 19.0	
Ω	20 29 41.0	Ther. 62.5°
Refraction	− 5 5.5	
Parallax	+ 8.9	Bar. 30.22 in.

	° ′ ″
Polar Distance of Object . . .	113 10 44.4
	h. m. s.
Local Apparent Time	3 42 40.3
Equation of Time	− 5 33.1
Local Mean Time	3 37 7.2
Time by Chronometer	2 34 24.1
Chronometer slow of Local M. T. .	1 2 43.1

These observations were made after noon.

SUN . . . DECEMBER 14.		
	On Arc = ω.	Off Arc = ω^1.
	′ ″	° ′ ″
	33 10	359 27 50
	15	28 0
	20	27 50
Index Corr.	− 0 34.2	
E	+ 6.9	
Index Corr., &c.	− 0 27.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	44 0 0	8 35 41.0
	15 0	36 50.0
	30 0	37 59.5
	44 0 0	40 40.0
	15 0	41 50.0
	30 0	43 2.0
Means	44 15 0.0	8 39 20.4
Index Corr., &c.	− 27.3	
Ω	44 14 32.7	
Refraction	− 2 19.7	
Parallax	+ 8.3	

	° ′ ″
Polar Distance of Object . . .	113 13 34.1
	h. m. s.
Local Apparent Time	9 47 14.7
Equation of Time	− 5 11.5
Local Mean Time	9 42 3.2
Time by Chronometer	8 39 20.4
Chronometer slow of Local M. T. .	1 2 42.8

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 14.		
	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 0	359 27 50
	0	50
	10	50
Index Corr.	− 0 26.6	
E	+ 7.5	
Index Corr., &c.	− 0 19.1	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	47 10 0	8 50 43.5
	20 0	51 32.0
	30 0	52 22.5
	46 40 0	53 38.5
	50 0	54 29.0
	47 0 0	55 19.5
Means	47 5 0.0	8 53 0.8
Index Corr., &c.	− 19.1	
Ω	47 4 40.9	
Refraction	− 2 10.5	
Parallax	+ 8.3	
		° ′ ″
Polar Distance of Object . . .		113 13 36.2
		h. m. s.
Local Apparent Time		10 0 55.9
Equation of Time		− 5 11.2
Local Mean Time		9 55 44.7
Time by Chronometer		8 53 0.8
Chronometer slow of Local M. T. .		1 2 43.9

These observations were made before noon.

SUN . . . DECEMBER 14.		
	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 15	359 27 40
	0	40
	15	50
Index Corr.	− 0 26.6	
E	+ 7.9	
Index Corr., &c.	− 0 18.7	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	49 0 0	9 0 7.5
	10 0	1 0.5
	20 0	1 55.5
	48 30 0	3 13.0
	40 0	4 10.0
	50 0	5 3.5
Means	48 55 0.0	9 2 35.0
Index Corr., &c.	− 18.7	
Ω	48 54 41.3	Ther. 63.5°
Refraction	− 2 5.1	
Parallax	+ 8.2	Bar. 30.28 in.
		° ′ ″
Polar Distance of Object . . .		113 13 37.6
		h. m. s.
Local Apparent Time		10 10 30.6
Equation of Time		− 5 11.0
Local Mean Time		10 5 19.6
Time by Chronometer		9 2 35.0
Chronometer slow of Local M. T. .		1 2 44.6

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 14.		
	On Arc = ω.	Off Arc = ω[1].
	′ ″	° ′ ″
	32 40	359 28 10
	50	0
	45	0
Index Corr.	− 0 24.1	
E	+ 3.8	
Index Corr., &c.	− 0 20.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	26 50 0	2 11 21.5
	40 0	11 56.5
	30 0	12 31.0
	27 10 0	13 57.0
	0 0	14 31.5
	26 50 0	15 5.5
Means	26 50 0.0	2 13 13.8
Index Corr., &c.	− 20.3	
Ω	26 49 39.7	
Refraction	− 3 55.5	
Parallax	+ 8.8	

Polar Distance of Object	° ′ ″ 113 14 23.2
Local Apparent Time	h. m. s. 3 21 2.8
Equation of Time.	− 5 4.8
Local Mean Time	3 15 58.0
Time by Chronometer	2 13 13.8
Chronometer slow of Local M. T. .	1 2 44.2

These observations were made after noon.

SUN . . . DECEMBER 14.		
	On Arc = ω.	Off Arc = ω[1].
	′ ″	° ′ ″
	32 40	359 28 0
	30	27 50
	40	27 55
Index Corr.	− 0 15.8	
E	+ 3.5	
Index Corr., &c.	− 0 12.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	25 20 0	2 16 32.0
	10 0	17 7.0
	0 0	17 41.0
	25 50 0	18 31.0
	40 0	19 5.5
	30 0	19 39.5
Means	25 25 0.0	2 18 6.0
Index Corr., &c.	− 12.3	
Ω	25 24 47.7	
Refraction	− 4 8.7	
Parallax	+ 8.8	

Polar Distance of Object	° ′ ″ 113 14 23.9
Local Apparent Time	h. m. s. 3 25 55.0
Equation of Time.	− 5 4.7
Local Mean Time.	3 20 50.3
Time by Chronometer	2 18 6.0
Chronometer slow of Local M. T. .	1 2 44.3

These observations were made after noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 14.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	° ′ ″	° ′ ″
	32 40	339 28 0
	40	0
	50	0
Index Corr.	— 0 21.6	
E	+ 3.2	
Index Corr., &c.	— 0 18.4	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	23 30 0	2 22 49.0
	20 0	23 22.5
	10 0	23 55.5
	24 0 0	24 44.0
	23 50 0	25 18.0
	40 0	25 52.0
Means	23 35 0.0	2 24 20.2
Index Corr., &c.	— 18.4	
Ω	23 34 41.6	Ther. 61°.0
Refraction	— 4 27.8	
Parallax	+ 8.8	Bar. 30.23 in.

	° ′ ″
Polar Distance of Object . . .	113 14 24.7
	h. m. s.
Local Apparent Time	3 32 8.2
Equation of Time	— 5 4.6
Local Mean Time	3 27 3.6
Time by Chronometer	2 24 20.2
Chronometer slow of Local M. T. .	1 2 43.4

These observations were made after noon.

SUN . . . DECEMBER 15.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 0	359 28 15
	10	10
	20	10
Index Corr.	— 0 40.8	
E	+ 5.2	
Index Corr., &c.	— 0 35.6	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	35 10 0	8 0 1.0
	20 0	0 39.5
	30 0	1 17.5
	34 40 0	2 15.0
	50 0	2 53.0
	35 0 0	3 32.5
Means	35 5 0.0	8 1 46.4
Index Corr., &c.	— 35.6	
Ω	35 4 24.4	
Refraction	— 3 0.0	
Parallax	+ 8.6	

	° ′ ″
Polar Distance of Object . . .	113 16 50.2
	h. m. s.
Local Apparent Time	9 9 13.6
Equation of Time	— 4 43.4
Local Mean Time	9 4 30.2
Time by Chronometer	8 1 46.4
Chronometer slow of Local M. T. .	1 2 43.8

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 15.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	32 50	359 28 0
	33 0	0
	32 50	0
Index Corr.	− 0 26.6	
E	+ 5.5	
Index Corr., &c.	− 0 21.1	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	37 0 0	8 7 5.5
	10 0	7 47.0
	20 0	8 26.0
	36 30 0	9 25.5
	40 0	10 5.0
	50 0	10 45.5
Means	36 55 0.0	8 8 55.8
Index Corr., &c.	− 21.1	
Ω	36 54 38.9	
Refraction	− 2 50.7	
Parallax	+ 8.6	

	° ′ ″
Polar Distance of Object . . .	113 16 51.1
	h. m. s.
Local Apparent Time	9 16 24.1
Equation of Time.	− 4 43.2
Local Mean Time	9 11 40.9
Time by Chronometer	8 8 55.8
Chronometer slow of Local M. T. .	1 2 45.1

These observations were made before noon.

SUN . . . DECEMBER 15.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 10	359 28 0
	0	0
	10	0
Index Corr.	− 0 33.4	
E	+ 5.8	
Index Corr., &c.	− 0 27.6	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	38 30 0	8 13 6.0
	40 0	13 46.5
	50 0	14 27.5
	38 0 0	15 27.5
	10 0	16 9.5
	20 0	16 50.0
Means	38 25 0.0	8 14 57.8
Index Corr., &c.	− 27.6	
Ω	38 24 32.4	Ther. 60.°
Refraction	− 2 43.7	
Parallax	+ 8.5	Bar. 30.27 in.

	° ′ ″
Polar Distance of Object . . .	113 16 52.0
	h. m. s.
Local Apparent Time	9 22 25.5
Equation of Time.	− 4 43.1
Local Mean Time	9 17 42.4
Time by Chronometer	8 14 57.8
Chronometer slow of Local M. T. .	1 2 44.6

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 15.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 30	359 28 10
	30	10
	30	0
Index Corr.	− 0 48.4	
E	+ 5.4	
Index Corr., &c.	− 0 43.0	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	36 0 0	1 37 40.0
	35 50 0	38 20.5
	40 0	38 59.0
	36 30 0	39 57.0
	20 0	40 36.0
	10 0	41 15.5
Means	36 5 0.0	1 39 28.0
Index Corr., &c.	− 43.0	
Ω	36 4 17.0	
Refraction	− 2 53.6	
Parallax	+ 8.6	
Polar Distance of Object . . .		° ′ ″ 113 17 33.5
Local Apparent Time		h. m. s. 2 46 49.3
Equation of Time		− 4 36.6
Local Mean Time		2 42 12.7
Time by Chronometer		1 39 28.0
Chronometer slow of Local M. T. .		1 2 44.7
These observations were made after noon.		

SUN . . . DECEMBER 15.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 20	359 28 10
	15	5
	15	0
Index Corr.	− 0 40.8	
E	+ 5.2	
Index Corr., &c.	− 0 35.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	34 50 0	1 42 14.0
	40 0	42 53.0
	30 0	43 32.0
	35 20 0	44 29.0
	10 0	45 6.0
	0 0	45 45.0
Means.	34 55 0.0	1 43 59.8
Index Corr., &c.	− 35.6	
Ω	34 54 24.4	
Refraction	− 2 59.6	
Parallax	+ 8.6	
Polar Distance of Object . . .		° ′ ″ 113 17 34.1
Local Apparent Time		h. m. s. 2 51 20.1
Equation of Time		− 4 36.5
Local Mean Time		2 46 43.6
Time by Chronometer		1 43 59.8
Chronometer slow of Local M. T. .		1 2 43.8
These observations were made after noon.		

ADDENDUM A—Continued.

SUN . . . DECEMBER 15.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 20	359 28 10
	15	0
	20	0
Index Corr.	− 0 40.8	
E	+ 4.9	
Index Corr., &c.	− 0 35.9	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	33 0 0	1 49 13.5
	32 50 0	49 51.0
	40 0	50 29.0
	33 30 0	51 24.0
	20 0	52 2.0
	10 0	52 38.5
Means	33 5 0.0	1 50 56.3
Index Corr, &c.	− 35.9	
Ω	33 4 24.1	Ther. 63.°
Refraction	− 3 9.9	in.
Parallax	+ 8.6	Bar. 30.25
		° ′ ″
Polar Distance of Object . . .		113 17 34.9
		h. m. s.
Local Apparent Time		2 58 16.8
Equation of Time		− 4 36.3
Local Mean Time		2 53 40.5
Time by Chronometer		1 50 56.3
Chronometer slow of Local M. T. .		1 2 44.2

These observations were made after noon.

SUN . . . DECEMBER 16.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 20	359 28 10
	20	10
	15	10
Index Corr.	− 0 44.2	
E	+ 4.1	
Index Corr., &c.	− 0 40.1	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	29 0 0	7 38 8.5
	10 0	38 43.5
	20 0	39 19.0
	28 30 0	40 12.0
	40 0	40 47.5
	50 0	41 23.0
Means	28 55 0.0	7 39 45.6
Index Corr., &c.	− 40.1	
Ω	28 54 19.9	
Refraction	− 3 38.8	
Parallax	+ 8.7	
		° ′ ″
Polar Distance of Object . . .		113 19 41.7
		h. m. s.
Local Apparent Time		8 46 44.1
Equation of Time		− 4 14.7
Local Mean Time		8 42 29.4
Time by Chronometer		7 39 45.6
Chronometer slow of Local M. T. .		1 2 43.8

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 16.		
	On Arc = ω.	Off Arc = ω'.
	' "	° ' "
	33 0	359 27 40
	0	40
	10	40
Index Corr.	− 0 21.6	
E	+ 4.3	
Index Corr., &c.	− 0 17.3	
	2 Altitude.	Chronometer.
	° ' "	h. m. s.
	30 10 0	7 42 17.5
	20 0	42 53.0
	30 0	43 29.5
	29 40 0	44 23.0
	50 0	44 59.0
	30 0 0	45 34.5
Means	30 5 0.0	7 43 56.1
Index Corr., &c.	− 17.3	
Ω	30 4 42.7	
Refraction	− 3 30.2	
Parallax	+ 8.7	
		° ' "
Polar Distance of Object . . .		113 19 42.1
		h. m. s.
Local Apparent Time		8 50 56.0
Equation of Time		− 4 14.6
Local Mean Time		8 46 41.4
Time by Chronometer		7 43 56.1
Chronometer slow of Local M. T. .		1 2 45 3

These observations were made before noon.

SUN . . . DECEMBER 16.		
	On Arc = ω.	Off Arc = ω¹.
	' "	° ' "
	32 50	359 27 45
	55	28 0
	50	27 50
Index Corr.	− 0 21.7	
E	+ 4.6	
Index Corr., &c.	− 0 17.1	
	2 Altitude.	Chronometer.
	° ' "	h. m. s.
	32 0 0	7 48 54.5
	10 0	49 33.0
	20 0	50 9.5
	31 30 0	51 5.5
	40 0	51 41.5
	50 0	52 18.5
Means	31 55 0.0	7 50 37.1
Index Corr., &c.	− 17.1	
Ω	31 54 42.9	Ther. 61.°
Refraction	− 3 17.9	
Parallax	+ 8.7	Bar. 30.25 in.
		° ' "
Polar Distance of Object . . .		113 19 42.9
		h. m. s.
Local Apparent Time		8 57 36.9
Equation of Time		− 4 14.5
Local Mean Time		8 53 22.4
Time by Chronometer		7 50 37.1
Chronometer slow of Local M. T. .		1 2 45.3

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . . DECEMBER 16.	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 40
	32 55	40
	33 0	40
Index Corr.	− 0 19.2	
E	+ 4.6	
Index Corr, &c.	− 0 14.6	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	31 40 0	1 54 23.5
	30 0	55 0.0
	20 0	55 37.0
	32 10 0	56 31.0
	0 0	57 7.5
	31 50 0	57 46.5
Means	31 45 0.0	1 56 4.2
Index Corr., &c.	− 14.6	
Ω	31 44 45.4	
Refraction	− 3 16.3	
Parallax	+ 8.6	

	° ′ ″
Polar Distance of Object	113 20 22.6
	h. m. s.
Local Apparent Time	3 2 55.4
Equation of Time.	− 4 7.0
Local Mean Time	2 58 48.4
Time by Chronometer	1 56 4.2
Chronometer slow of Local M. T. .	1 2 44.2

These observations were made after noon.

SUN . . . . DECEMBER 16.	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 55	359 27 50
	50	50
	55	45
Index Corr.	− 0 20.8	
E	+ 4.4	
Index Corr., &c.	− 0 16.4	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	30 30 0	1 58 40.0
	20 0	59 17.5
	10 0	59 54.0
	31 0 0	2 0 47.0
	30 50 0	1 23.5
	40 0	1 58.0
Means	30 35 0.0	2 0 20.0
Index Corr., &c.	− 16.4	
Ω	30 34 43.6	
Refraction	− 3 23.9	
Parallax	+ 8.7	

	° ′ ″
Polar Distance of Object	113 20 23.0
	h. m. s.
Local Apparent Time	3 7 11.2
Equation of Time.	− 4 6.9
Local Mean Time	3 3 4.3
Time by Chronometer	2 0 20.0
Chronometer slow of Local M. T. .	1 2 44.3

These observations were made after noon.

ADDENDUM A—Continued.

SUN . . . . DECEMBER 16.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 50	359 27 40
	50	35
	40	40
Index Corr.	— 0 12.5	
E	+ 4.1	
Index Corr., &c.	— 0 8.4	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	28 30 0	2 5 52.0
	20 0	6 27.5
	10 0	7 2.5
	29 0 0	7 55.0
	28 50 0	8 31.0
	40 0	9 6.0
Means	28 35 0.0	2 7 29.0
Index Corr., &c.	— 8.4	
Ω	28 34 51.6	Ther. 67.°
Refraction	— 3 38.3	
Parallax	+ 8.7	Bar. 30.18 in.

	° ′ ″
Polar Distance of Object	113 20 23.9
	h. m. s.
Local Apparent Time	3 14 21.0
Equation of Time	— 4 6.8
Local Mean Time	3 10 14.2
Time by Chronometer	2 7 29.0
Chronometer slow of Local M. T. .	1 2 45.2

These observations were made after noon.

SUN . . . . DECEMBER 19.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 40	359 27 35
	30	35
	50	25
Index Corr.	— 0 5.8	
E	+ 4.1	
Index Corr., &c.	— 0 1.7	
	2 Altitude.	**Chronometer.**
	° ′ ″	h. m. s.
	29 10 0	7 40 44.5
	20 0	41 20.5
	30 0	41 56.0
	28 40 0	42 49.0
	50 0	43 25.5
	29 0 0	44 1.0
Means	29 5 0.0	7 42 22.8
Index Corr., &c.	— 1.7	
Ω	29 4 58.3	
Refraction	— 3 40.6	
Parallax	+ 8.7	

	° ′ ″
Polar Distance of Object	113 25 36.8
	h. m. s.
Local Apparent Time	8 47 54.8
Equation of Time	— 2 45.9
Local Mean Time	8 45 8.9
Time by Chronometer	7 42 22.8
Chronometer slow of Local M. T. .	1 2 46.1

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 19.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 50
	0	45
	10	45
Index Corr.	— 0 25.0	
E	+ 4.3	
Index Corr., &c.	— 0 20.7	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	30 20 0	7 44 54.5
	30 0	45 29.5
	40 0	46 5.5
	30 0 0	47 38.0
	10 0	48 13.5
	20 0	48 49.5
Means	30 20 0.0	7 46 51.8
Index Corr., &c.	— 20.7	
Ω	30 19 39.3	
Refraction	— 3 31.4	
Parallax	+ 8.7	
		° ′ ″
Polar Distance of Object . . .		113 25 37.1
		h. m. s.
Local Apparent Time		8 52 23.4
Equation of Time.		— 2 45.8
Local Mean Time.		8 49 37.6
Time by Chronometer		7 46 51.8
Chronometer slow of Local M. T. .		1 2 45.8

These observations were made before noon.

SUN . . . DECEMBER 19.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 45
	0	30
	0	40
Index Corr.	— 0 19.2	
E	+ 4.7	
Index Corr., &c.	— 0 14.5	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	32 30 0	7 52 49.5
	40 0	53 24.0
	50 0	54 5.0
	32 0 0	54 59.5
	10 0	55 37.0
	20 0	56 12.5
Means	32 25 0.0	7 54 31.2
Index Corr., &c.	— 0 14.5	°
Ω	32 24 45.5	Ther. 53.
Refraction	— 3 17.6	in.
Parallax	+ 8.6	Bar. 30.20
		° ′ ″
Polar Distance of Object . . .		113 25 37.4
		h. m. s.
Local Apparent Time		9 0 3.1
Equation of Time.		— 2 45.6
Local Mean Time.		8 57 17.5
Time by Chronometer		7 54 31.2
Chronometer slow of Local M. T. .		1 2 46.3

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 19.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 15	359 27 50
	0	28 0
	0	27 45
Index Corr.	— 0 28.4	
E	+ 4.6	
Index Corr., &c.	— 0 23.8	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	31 20 0	1 56 33.0
	10 0	57 14.5
	0 0	57 46.0
	31 50 0	58 41.0
	40 0	59 18.5
	30 0	59 54.5
Means	31 25 0.0	1 58 14.6
Index Corr., &c.	— 23.8	
Ω	31 24 36.2	
Refraction	— 3 20.8	
Parallax	+ 8.6	
		° ′ ″
Polar Distance of Object . . .		113 25 55.7
		h. m. s.
Local Apparent Time		3 3 37.1
Equation of Time		— 2 38.1
Local Mean Time		3 0 59.0
Time by Chronometer		1 58 14.6
Chronometer slow of Local M. T. .		1 2 44.4

These observations were made after noon.

SUN . . . DECEMBER 19.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 40	359 27 45
	33 0	45
	0	40
Index Corr.	— 0 18.3	
E	+ 4.4	
Index Corr., &c.	— 0 13.9	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	30 10 0	2 0 49.5
	0 0	1 27.0
	29 50 0	2 3.5
	30 40 0	2 56.0
	30 0	3 32.0
	20 0	4 9.0
Means	30 15 0.0	2 2 29.5
Index Corr., &c.	— 13.9	
Ω	30 14 46.1	
Refraction	— 3 28.6	
Parallax	+ 8.7	
		° ′ ″
Polar Distance of Object . . .		113 25 55.9
		h. m. s.
Local Apparent Time		3 7 52.0
Equation of Time		— 2 38.0
Local Mean Time		3 5 14.0
Time by Chronometer		2 2 29.5
Chronometer slow of Local M. T. .		1 2 44.5

These observations were made after noon.

ADDENDUM A—Continued,

SUN . . . DECEMBER 19.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 15	359 27 45
	10	50
	0	40
Index Corr.	— 0 26.6	
E	+ 4.0	
Index Corr., &c.	— 0 22.6	

	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	28 20 0	2 7 27.0
	10 0	8 2.0
	0 0	8 38.0
	28 50 0	9 30.0
	40 0	10 6.0
	30 0	10 41.5
Means	28 25 0.0	2 9 4.1
Index Corr., &c.	— 22.6	°
Ω	28 24 37.4	Ther. 60.
Refraction	— 3 42.2	in.
Parallax	+ 8.7	Bar. 30.12

	° ′ ″
Polar Distance of Object . . .	113 25 56.2
	h. m. s.
Local Apparent Time	3 14 26.7
Equation of Time	— 2 37.9
Local Mean Time	3 11 48.8
Time by Chronometer	2 9 4.1
Chronometer slow of Local M.T. .	1 2 44.7

These observations were made after noon.

SUN . . . DECEMBER 21.

	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 40
	0	30
	0	40
Index Corr.	— 0 18.4	
E	+ 3.7	
Index Corr., &c.	— 0 14.7	

	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	26 30 0	7 32 34.0
	40 0	33 7.5
	50 0	33 41.5
	26 0 0	34 34.5
	10 0	35 9.5
	20 0	35 43.5
Means	26 25 0.0	7 34 8.4
Index Corr., &c.	— 14.7	
Ω	26 24 45.3	
Refraction	— 3 55.1	
Parallax	+ 8.8	

	° ′ ″
Polar Distance of Object . . .	113 27 12.4
	h. m. s.
Local Apparent Time	8 38 39.9
Equation of Time	— 1 46.1
Local Mean Time	8 36 53.8
Time by Chronometer	7 34 8.4
Chronometer slow of Local M.T. .	1 2 45.4

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 21.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 30	359 27 30
	40	40
	40	30
Index Corr.	— 0 5.0	
E	+ 3.9	
Index Corr., &c.	— 0 1.1	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	27 40 0	7 36 37.0
	50 0	37 11.0
	28 0 0	37 46.5
	27 10 0	38 39.0
	20 0	39 13.5
	30 0	39 49.5
Means	27 35 0.0	7 38 12.7
Index Corr., &c.	— 1.1	
Ω	27 34 58.9	
Refraction	— 3 45.2	
Parallax	+ 8.7	
		° ′ ″
Polar Distance of Object . . .		113 27 12.4
		h. m. s.
Local Apparent Time		8 42 45.4
Equation of Time		— 1 46.0
Local Mean Time		8 40 59.4
Time by Chronometer		7 38 12.7
Chronometer slow of Local M. T. .		1 2 46.7

These observations were made before noon.

SUN . . . DECEMBER 21.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 40	359 27 30
	50	25
	40	40
Index Corr.	— 0 7.5	
E	+ 4.2	
Index Corr., &c.	— 0 3.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	29 30 0	7 43 4.0
	40 0	43 39.5
	50 0	44 15.5
	29 0 0	45 11.0
	10 0	45 47.0
	20 0	46 22.0
Means	29 25 0.0	7 44 43.2
Index Corr., &c.	— 3.3	°
Ω	29 24 56.7	Ther. 64.
Refraction	— 3 31.0	in.
Parallax	+ 8.7	Bar. 29.86
		° ′ ″
Polar Distance of Object . . .		113 27 12.5
		h. m. s.
Local Apparent Time		8 49 16.1
Equation of Time		— 1 45.9
Local Mean Time		8 47 30.2
Time by Chronometer		7 44 43.2
Chronometer slow of Local M. T. .		1 2 47.0

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 21.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 40
	10	30
	0	40
Index Corr.	— 0 20.0	
E	+ 4.6	
Index Corr., &c.	— 0 15.4	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	31 20 0	1 57 24.5
	10 0	58 1.0
	0 0	58 38.0
	31 50 0	59 33.0
	40 0	2 0 9.0
	30 0	0 46.0
Means	31 25 0.0	1 59 5.2
Index Corr, &c.	— 15.4	
Ω	31 24 44.6	
Refraction	— 3 16.1	
Parallax	+ 8.6	
		° ′ ″
Polar Distance of Object . . .		113 27 16.6
		h. m. s.
Local Apparent Time		3 3 28.2
Equation of Time		— 1 38.1
Local Mean Time		3 1 50.1
Time by Chronometer		1 59 5.2
Chronometer slow of Local M. T. .		1 2 44.9

These observations were made after noon.

SUN . . . DECEMBER 21.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
Index Corr.	— 0 24.6	
E	+ 4.4	
Index Corr., &c.	— 0 20.2	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	30 11 0	2 1 38.5
	29 58 10	2 25.0
	50 20	2 53.0
	30 44 20	3 33.0
	36 10	4 3.0
	25 50	4 39.5
Means	30 17 38.3	2 3 12.0
Index Corr., &c.	— 20.2	
Ω	30 17 18.1	
Refraction	— 3 23.6	
Parallax	+ 8.7	
		° ′ ″
Polar Distance of Object . . .		113 27 16.6
		h. m. s.
Local Apparent Time		3 7 34.5
Equation of Time		— 1 38.0
Local Mean Time		3 5 56.5
Time by Chronometer		2 3 12.0
Chronometer slow of Local M. T. .		1 2 44.5

These observations were made after noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 21.	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 25	359 27 30
	25	40
	20	35
Index Corr.	− 0 29.2	
E	+ 4.1	
Index Corr., &c.	− 0 25.1	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	29 4 30	2 5 38.0
	28 52 40	6 24.5
	33 50	7 28.5
	29 26 20	8 13.5
	3 10	9 36.5
	28 54 20	10 6.5
Means	28 59 8.3	2 7 54.6
Index Corr., &c.	− 25.1	
Ω	28 58 43.2	Ther. 64.6°
Refraction	− 3 32.8	
Parallax	+ 8.7	Bar. 29.70 in.
Polar Distance of Object . . .		113° 27′ 16.7″
Local Apparent Time		3h. 12m. 17.2s.
Equation of Time		− 1 37.9
Local Mean Time		3 10 39.3
Time by Chronometer		2 7 54.6
Chronometer slow of Local M. T. .		1 2 44.7

These observations were made after noon.

SUN . . . DECEMBER 22.	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 15	359 27 40
	0	35
	0	30
Index Corr.	− 0 20.0	
E	+ 3.7	
Index Corr., &c.	− 0 16.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	26 40 0	7 33 38.0
	50 0	34 12.5
	27 0 0	34 48.0
	26 10 0	35 39.5
	20 0	36 14.0
	30 0	36 49.5
Means	26 35 0.0	7 35 13.6
Index Corr., &c.	− 16.3	
Ω	26 34 43.7	
Refraction	− 3 54.8	
Parallax	+ 8.8	
Polar Distance of Object . . .		113° 27′ 18.0″
Local Apparent Time		8h. 39m. 15.2s.
Equation of Time		− 1 16.0
Local Mean Time		8 37 59.2
Time by Chronometer		7 35 13.6
Chronometer slow of Local M. T. .		1 2 45.6

These observations were made before noon.

ADDENDUM A—Continued.

SUN . . . DECEMBER 22.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 50	359 27 45
	33 15	45
	10	28 0
Index Corr.	— 0 27.5	
E	+ 3.9	
Index Corr., &c.	— 0 23.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	27 50 0	7 37 41.5
	28 0 0	38 17.0
	10 0	38 51.0
	27 20 0	39 45.0
	30 0	40 20.0
	40 0	40 56.0
Means	27 45 0.0	7 39 18.4
Index Corr., &c.	— 23.6	
Ω	27 44 36.4	
Refraction	— 3 44.9	
Parallax	+ 8.7	

	° ′ ″
Polar Distance of Object	113 27 17.9
	h. m. s.
Local Apparent Time	8 43 19.6
Equation of Time.	— 1 15.9
Local Mean Time	8 42 3.7
Time by Chronometer	7 39 18.4
Chronometer slow of Local M. T. .	1 2 45.3

These observations were made before noon.

SUN . . . DECEMBER 22.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	32 50	359 27 40
	33 15	40
	10	40
Index Corr.	— 0 22.5	
E	+ 4.2	
Index Corr., &c.	— 0 18.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	29 40 0	7 44 13.0
	50 0	44 48.5
	30 0 0	45 23.5
	29 10 0	46 18.0
	20 0	46 54.0
	30 0	47 30.0
Means	29 35 0.0	7 45 51.2
Index Corr., &c.	— 18.3	°
Ω	29 34 41.7	Ther. 54.0
Refraction	— 3 30.9	in.
Parallax	+ 8.7	Bar. 29.42

	° ′ ″
Polar Distance of Object . . .	113 27 17.9
	h. m. s.
Local Apparent Time	8 49 51.5
Equation of Time.	— 1 15.8
Local Mean Time	8 48 35.7
Time by Chronometer	7 45 51.2
Chronometer slow of Local M. T. .	1 2 44.5

These observations were made before noon.

ADDENDUM B.

Observations for Latitude, made on the Stone Gun-Platform at Syracuse, Sicily, by Professor William Harkness, U. S. N., with the Sextant Stackpole & Brother No. 937, *Mercurial Artificial Horizon Ha.* 1, *and Chronometer T. S. & J. D. Negus No.* 1115.

[NOTE.—The barometer employed was a pocket aneroid, 1.9 inches in diameter, marked L. Casella, London, No. 1128. It was compensated for temperature, and, in order to reduce its observed readings to the corresponding readings of a mercurial barometer at 32° F., it is only necessary to subtract from them 0.12 of an inch.]

SUN . . DECEMBER 13, 1870.		
	On Arc = ω.	Off Arc = ω'.
	′ ″	° ′ ″
	32 40	359 28 0
	45	27 50
	33 5	28 0
	5	28 10
Index Corr.	— 0 26.9	
E	+ 10.0	
Index Corr., &c.	— 0 16.9	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 48 50	11 9 57.0
	45 50	11 20.5
	44 40	11 51.0
	58 38 30	12 34.0
	34 40	14 8.5
	33 35	14 33.5
Means	59 11 0.8	11 12 24.1
Index Corr., &c.	— 16.9	
Ω	59 10 43.9	Ther. 66.0 °
ζ	60 24 38.0	Bar. 30.26 in.
Refraction	+ 1 39.7	
Parallax	— 7.8	
Am_0	— 11 57.1	
Bn_0	+ 0.7	
ζ_1	60 14 13.5	
δ	— 23 10 10.8	
φ	+ 37 4 3.	
		h. m. s.
Time of Culmination		11 54 22.9
Chronometer slow		1 2 43.2
Chron. Time of Culmination . .		10 51 39.7

POLARIS . DECEMBER 14, 1870.		
	Coincidence of Images.	
	′ ″	
	0 55	
	45	
	50	
Index Corr.	— 0 50.0	
E	+ 14.0	
Index Corr., &c.	— 0 36.0	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 37 50	8 27 19.0
	34 30	29 27.0
	35 30	31 35.0
	35 30	33 13.5
	34 30	34 19.0
	34 0	35 11.5
Means	76 35 18.3	8 31 50.8
Index Corr., &c.	— 36.0	
Ω	76 34 42.3	Ther. 59.0 °
½Ω	38 17 21.2	Bar. 30.26 in.
Refraction	— 1 12.8	
$p \cos t$	— 1 12 13.2	
2d term	+ 11.0	
φ	+ 37 4 6.	
		h. m. s.
Chronometer slow		1 2 43.7
t		1 55 48.5
δ		88° 37′ 28″.0
p		4952″.0

ADDENDUM B—Continued.

POLARIS . . DECEMBER 14.

	Coincidence of Images.	
	′ ″	
	1 0	
	0 55	
	1 0	
Index Corr.	− 0 58.3	
E	+ 14.0	
Index Corr., &c.	− 0 44.3	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 32 50	8 36 1.5
	33 30	36 54.0
	33 30	37 39.0
	32 10	38 21.0
	31 40	39 26.5
	31 30	40 19.5
Means	76 32 31.7	8 38 6.9
Index Corr., &c.	− 44.3	
Ω	76 31 47.4	
$\frac{1}{2}\Omega$	38 15 53.7	
Refraction	− 1 12.8	
p cos t	− 1 11 5.7	
2d term	+ 12.1	
φ	+ 37 3 47.	

	h. m. s.
Chronometer slow	1 2 43.7
t	2 2 5.6
δ	88° 37′ 28″.0
p	4952″.0

SUN . . . DECEMBER 16.

	On Arc $= \omega$.	Off Arc $= \omega^1$.
	′ ″	° ′ ″
	33 0	359 27 50
	10	50
	0	50
Index Corr.	− 0 26.6	
E	+ 10.0	
Index Corr., &c.	− 0 16.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 47 40	10 54 47.5
	47 30	55 38.5
	47 40	56 1.5
	58 42 10	57 0.0
	41 30	57 38.5
	41 20	58 16.0
Means	59 14 38.3	10 56 33.7
Index Corr., &c.	− 16.6	
Ω	59 14 21.7	
ζ	60 22 49.2	
Refraction	+ 1 39.8	
Parallax	− 7.8	
Am_0	− 22.3	
ζ_1	60 23 59	
δ	− 23 20 3	
φ	+ 37 3 56	

	h. m. s.
Time of Culmination	11 55 49.3
Chronometer slow	1 2 44.2
Chron. Time of Culmination . .	10 53 5.1

ADDENDUM B—Continued.

SUN . . . . DECEMBER 16.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 0	359 28 10
	0	27 50
	20	45
Index Corr.	− 0 30.8	
E	+ 10.0	
Index Corr., &c.	− 0 20.8	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	58 41 0	10 58 50.0
	40 30	59 19.0
	40 15	59 52.5
	59 44 30	11 0 56.5
	43 50	1 39.5
	43 30	2 8.0
Means	59 12 15.8	11 0 27.6
Index Corr., &c.	− 20.8	
Ω	59 11 55.0	Ther. 64.5°
ζ	60 24 2.5	in.
Refraction	+ 1 39.8	Bar. 30.21
Parallax	− 7.8	
Am_0	− 1 32.4	
ζ_1	60 24 2.	
δ	− 23 20 4.	
ϕ	+ 37 3 58.	

	h. m. s.
Time of Culmination	11 55 49.3
Chronometer slow	1 2 44.2
Chron. Time of Culmination . . .	10 53 5.0

POLARIS . . . DECEMBER 16.

	Coincidence of Images.	
	′ ″	
	0 20	
	30	
	25	
Index Corr.	− 0 25.0	
E	+ 14.1	
Index Corr., &c.	− 0 10.9	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 48 30	5 27 41.0
	50 30	29 42.0
	49 40	30 50.0
	48 45	31 55.0
	50 10	32 49.0
	50 10	33 33.5
Means	76 49 37.5	5 31 5.1
Index Corr., &c.	− 10.9	
Ω	76 49 26.6	
$\frac{1}{2}\Omega$	38 24 43.3	
Refraction	− 1 12.6	
$p \cos t$	− 1 19 56.5	
2d term	+ 2.9	
ϕ	+ 37 3 37.	

	h. m. s.
Chronometer slow	1 2 44.3
t	0 57 31.5
δ	88° 37′ 28″.4
p	4951″.6

ADDENDUM B—Continued.

POLARIS . . DECEMBER 16.

	Coincidence of Images.	
	′ ″	
	0 30	
	30	
	35	
Index Corr.	− 0 31.7	
E	+ 14.2	
Index Corr., &c.	− 0 17.5	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 50 10	5 35 40.0
	51 0	36 39.0
	51 30	37 35.5
	51 0	38 54.0
	51 40	39 45.0
	51 40	40 53.5
Means	76 51 10.0	5 38 14.5
Index Corr., &c.	− 17.5	
Ω	76 50 52.5	Ther. 57.5°
½Ω	38 25 26.2	in.
Refraction	− 1 12.6	Bar. 30.20
p cos t	− 1 20 32.6	
2d term	+ 2.2	
ϕ	+ 37 3 43.	

	h. m. s.
Chronometer slow	1 2 44.3
t	0 50 20.9

Star covered by haze, and very faint.

SUN . . . DECEMBER 17.

	On Arc = ω.	Off Arc = ω^1.
	′ ″	° ′ ″
	33 15	359 28 0
	20	5
Index Corr.	− 0 40.0	
E	+ 10.0	
Index Corr., &c.	− 0 30.0	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 42 0	10 48 59.0
	42 30	50 0.0
	42 40	50 40.0
	58 38 5	51 50.0
	38 0	53 3.0
	38 0	53 47.0
Means	59 10 12.5	10 51 23.3
Index Corr., &c.	− 30.0	
Ω	59 9 42.5	
ζ	60 25 8.8	
Refraction	+ 1 39.6	
Parallax	− 7.8	
$Am_{\circ}$	− 12.5	
ζ_1	60 26 28.	
δ	− 23 22 25.	
ϕ	+ 37 4 3.	

	h. m. s.
Time of Culmination	11 56 18.8
Chronometer slow	1 2 44.5
Chron. Time of Culmination . .	10 53 34.3

ADDENDUM B—Continued.

SUN . . . DECEMBER 17.		
	On Arc = ω.	Off arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 40
	10	40
Index Corr.	− 0 22.5	
E	+ 10.0	
Index Corr., &c.	− 0 12.5	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	58 38 0	10 54 41.0
	38 5	55 18.0
	37 35	56 5.0
	59 42 45	57 3.0
	42 10	57 52.0
	41 30	58 45.0
Means	59 10 0.8	10 56 37.3
Index Corr., &c.	− 12.5	
Ω	59 9 48.3	Ther. 65°.
ζ	60 25 5.8	Bar. 30.16 in.
Refraction	+ 1 39.6	
Parallax	− 7.8	
Am_0	− 18.7	
ζ_1	60 26 19.	
δ	− 23 22 26.	
φ	+ 37 3 53.	
		h. m. s.
Time of Culmination		11 56 18.8
Chronometer slow		1 2 44.5
Chron. Time of Culmination . .		10 53 34.3

SUN . . . DECEMBER 18.		
	On Arc = ω.	Off Arc = ω¹.
	′ ″	° ′ ″
	33 0	359 27 45
	0	40
	10	35
Index Corr.	− 0 21.6	
E	+ 10.0	
Index Corr., &c.	− 0 11.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 39 10	10 53 32.0
	39 0	54 7.5
	39 10	54 33.5
	58 34 0	55 10.0
	33 35	55 40.5
	33 35	56 4.0
Means	59 6 25.0	10 54 51.2
Index Corr., &c.	− 11.6	
Ω	59 6 13.4	
ζ	60 26 53.3	
Refraction	+ 1 38.5	
Parallax	− 7.8	
Am_0	− 2.3	
ζ_1	60 28 22.	
δ	− 23 24 20.	
φ	+ 37 4 2.	
		h. m. s.
Time of Culmination		11 56 48.4
Chronometer slow		1 2 44.9
Chron. Time of Culmination . .		10 54 3.5

Observations taken through clouds.

ADDENDUM B—Continued.

SUN . . . DECEMBER 18.

	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	58 33 30	10 56 33.0
	33 25	57 6.0
	33 20	57 29.0
	59 38 0	58 7.0
	37 30	59 10.0
	36 50	11 0 6.5
Means	59 5 25.8	10 58 5.2
Index Corr., &c.	− 11.6	
Ω	59 5 14.2	Ther. 70.°
ζ	60 27 22.9	in.
Refraction	+ 1 38.5	Bar. 30.07
Parallax	− 7.8	
$Am_{\circ}$	− 29.2	
ζ_1	60 28 24.	
δ	− 23 24 21.	
ϕ	+ 37 4 3.	

	h. m. s.
Time of Culmination	11 56 48.4
Chronometer slow	1 2 44.9
Chron. Time of Culmination . .	10 54 3.5

Observations taken through clouds.

SUN . . . DECEMBER 19.

	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 0	359 27 50
	10	45
	20	45
Index Corr.	− 0 28.4	
E	+ 10.0	
Index Corr., &c.	− 0 18.4	

	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 33 20	10 46 44.0
	34 0	47 38.0
	34 50	48 34.0
	58 30 10	49 30.0
	30 20	50 13.0
	30 45	50 53.0
Means	59 2 14.2	10 48 55.3
Index Corr , &c.	− 18.4	
Ω	59 1 55.8	
ζ	60 29 2.1	
Refraction	+ 1 40.1	
Parallax	− 7.8	
$Am_{\circ}$	− 55.8	
ζ_1	60 29 39.	
δ	− 23 25 47.	
ϕ	+ 37 3 52.	

	h. m. s.
Time of Culmination	11 57 18.1
Chronometer slow	1 2 45.2
Chron. Time of Culmination . .	10 54 32.9

ADDENDUM B—Continued.

SUN . . . DECEMBER 19.		
	On Arc = ω.	Off Arc = ω^1.
	′ ″	° ′ ″
	33 15	359 27 30
	10	30
	15	30
Index Corr.	− 0 21.6	
E	+ 10.0	
Index Corr., &c.	− 0 11.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	58 30 50	10 51 35.0
	30 45	52 27.0
	31 10	53 7.0
	59 36 15	54 37.0
	36 15	56 16.0
	36 20	57 2.0
Means	59 3 35.8	10 54 10.7
Index Corr., &c.	− 0 11.6	°
Ω	59 3 24.2	Ther. 64.
ζ	60 28 17.9	in.
Refraction	+ 1 40.1	Bar. 30.16
Parallax	− 7.8	
$Am_\circ$	− 6.7	
ζ_1	60 29 44.	
δ	− 23 25 47.	
ϕ	+ 37 3 57.	

	h. m. s.
Time of Culmination	11 57 18.1
Chronometer slow	1 2 45.2
Chron. Time of Culmination . .	10 54 32.9

POLARIS . . DECEMBER 19.		
	Coincidence of Images.	
	′ ″	
	0 30	
	30	
	50	
Index Corr.	− 0 36.7	
E	+ 14.2	
Index Corr., &c.	− 0 22.5	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 54 30	6 29 37.5
	55 30	30 46.5
	55 30	31 48.0
	55 10	33 5.5
	55 10	35 23.5
	55 40	36 13.0
Means	76 55 15.0	6 32 49.0
Index Corr., &c.	− 22.5	
Ω	76 54 52.5	
$\frac{1}{2}\Omega$	38 27 26.2	
Refraction	− 1 13.5	
$p \cos t$	− 1 22 18.7	
2d term	+ 0.2	
ϕ	+ 37 3 54.	

	h. m. s.
Chronometer slow	1 2 45.3
t	0 16 15.3
δ	88° 37′ 28″.9
p	4951″.1

ADDENDUM B—Continued.

POLARIS . . DECEMBER 19.

	Coincidence of Images.	
	′ ″	
	0 20	
	40	
	20	
Index Corr.	− 0 26.7	
E	+ 14.2	
Index Corr., &c.	− 0 12.5	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	76 55 30	6 37 10.5
	56 10	39 4.0
	54 0	40 2.5
	55 0	41 16.5
	54 0	43 7.5
	55 10	45 45.5
Means	76 54 58.3	6 41 4.4
Index Corr., &c.	− 12.5	
Ω	76 54 45.8	Ther. 49.5°
½Ω	38 27 22.9	Bar. 30.13 in.
Refraction	− 1 13.5	
p cos t	− 1 22 2.8	
2d term	+ 0.5	
ϕ	+ 37 4 7.	

	h. m. s.
Chronometer slow	1 2 45.3
t	0 24 32.0

SUN . . . DECEMBER 21.

	On Arc = ω.	Off Arc = ω^1.
	′ ″	° ′ ″
	33 20	359 27 40
	15	30
	20	35
Index Corr.	− 0 26.6	
E	+ 10.0	
Index Corr., &c.	− 0 16.6	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	59 32 30	10 51 37.0
	32 30	52 2.0
	32 40	53 23.0
	58 27 35	59 8.5
	26 10	11 1 38.0
	25 55	1 58.5
Means	58 59 33.3	10 56 37.8
Index Corr., &c.	− 16.6	
Ω	58 59 16.7	
ζ	60 30 21.6	
Refraction	+ 1 38.3	
Parallax	− 7.8	
Am_0	− 34.1	
ζ_1	60 31 18.	
δ	− 23 27 15.	
ϕ	+ 37 4 3.	

	h. m. s.
Time of Culmination	11 58 18.1
Chronometer slow	1 2 45.9
Chron. Time of Culmination . .	10 55 32.2

ADDENDUM B—Continued.

SUN . . . DECEMBER 21.		
	On Arc $=\omega$.	Off Arc $=\omega^1$.
	′ ″	° ′ ″
	33 10	359 27 50
	15	40
	15	45
Index Corr.	− 0 29.2	
E	+ 10.0	
Index Corr., &c.	− 0 19.2	
	2 Altitude.	Chronometer.
	° ′ ″	h. m. s.
	58 25 10	11 2 38.5
	25 0	3 0.5
	24 50	3 25.5
	59 29 10	4 25.0
	28 30	5 0.0
	27 40	5 29.0
Means	58 56 43.3	11 3 59.8
Index Corr., &c.	− 19.2	
Ω	58 56 24.1	Ther. 67.0°
ζ	60 31 48.0	
Refraction	+ 1 38.5	Bar. 29.77 in.
Parallax	− 7.8	
Am_0	− 2 0.0	
ζ_1	60 31 19.	
δ	− 23 27 15.	
φ	+ 37 4 4.	

	h. m. s.
Time of Culmination	11 58 18.1
Chronometer slow	1 2 45.9
Chron. Time of Culmination . .	10 55 32.2

ADDENDUM C.

List of Articles forming part of the Equipment of the Expedition to Syracuse.

1 Achromatic Telescope of 3 inches aperture and 43½ inches focus, equatorially mounted, and provided with the necessary eye-pieces, shade-glasses, dew-cap, caps for reducing aperture of object-glass, counterpoises, adjusting tools, &c.
1 Single-Prism Spectroscope, with an adapter for attaching it to the telescope, shade-glasses for observing spectrum of the sun, and a lantern for illuminating the micrometer scale.
1 Arago Polariscope of double rotation, for use in the hand.
1 Arago Polariscope, and 1 Savart Polariscope, fitted for use with a telescope.
1 Six-inch Sextant, having a thermometer packed in the same case with it.
1 Mercurial Artificial Horizon.
1 Pocket Sextant.
1 Black-glass Artificial Horizon, provided with inclined planes for measuring zenith distances up to 130°.
1 Prismatic Compass.
1 Small Reflecting Level.
2 Pocket Compasses.
1 50-foot Tape-Measure.
1 Binocular Field-Glass.
1 Pocket Telescope, and screw-clip for same.
1 Set of Colored Glasses.
1 Pocket Aneroid Barometer.
2 Pocket Thermometers.
1 Rain-Gauge.
1 Set of Drawing Instruments.
4 Mean-time Box Chronometers.
1 Leather Case, with strap, to carry a box chronometer removed from its gimbals.
1 Box, with lock and leather strap, to carry 4 box chronometers removed from their gimbals.
Pig lead, to be used for counterpoising telescope.
Olive oil for lubricating axes of stand for same.
Soft rags and camel's hair dusting brush for cleaning lenses.
1 Lantern, and ball of wick for same.
Burning-fluid for same, composed of 1 volume of spirits of turpentine mixed with 4 volumes of alcohol.
Candles and candlesticks.
1 Camp-stool.
Twine—coarse, medium, and fine.
Rope.
Wrapping paper.
1 7-foot American boat ensign, and halyards for same.
Crelle's Rechentafeln.
Bremiker's 6-Figure Logarithms.
Bowditch's 5-Figure Logarithms.
4-Figure Logarithms.
Loomis's Practical Astronomy.
Chauvenet's Spherical aud Practical Astronomy.
Chauvenet's Trigonometry.
American Nautical Almanac for 1870.
English Nautical Almanac Circular, No. 12, giving path of the total solar eclipse of December 21–22, 1870.
Celestial Atlas.
Scale of tints for comparison with color of prominences.
English Admiralty Charts:
North Coast of Sicily.
East Coast of Sicily.
Southern Coast of Sicily.
Sardinia to Malta, including Sicily.
Malta and Gozo Islands.
Valetta Harbors, and the Coast Westward to Madalena Point.
Syracuse Harbor.
City and Bay of Palermo.
Blank forms for time, latitude, and spectroscope observations.
Foolscap, letter, and note paper.
Drawing and tracing paper.
Buff-colored paper.
Blotting paper.
Envelopes, assorted sizes.
Ink.
Pens and penholders.
Black lead pencils.
Blue and red pencils.
India rubber.
Paper-cutter.
Sealing-wax and wafers.
1 Small drawing board, ruler, and square.
1 Claw-hammer.
1 Hatchet.
1 Brace and bits.
3 Screw-drivers, assorted sizes.
1 Set of awls, and other small tools, contained in a hollow handle.
1 Pair flat pliers.
1 Pair round pliers.
1 Pair cutting pliers.
Sail-needles.
Screws and nails, assorted sizes.
Wire of assorted sizes.
6 sheets of sand and emery paper, assorted.

ADDENDUM D.

Letter of Captain Tupman, R. M. A., giving an Account of Observations made by him on the Total Solar Eclipse of December 22, 1870, while assisting Professor Harkness at Syracuse.

H. M. S. PRINCE CONSORT,
Malta, December 27, 1870.

MY DEAR PROFESSOR HARKNESS: According to promise, I send you the few remarks I have to make concerning the eclipse, so that you may know exactly whereabouts I kept your spectroscope during the totality.

It is no use my saying anything about your "finder," through which I observed the corona. If I give any details worth publishing you can add a description of the instrument. It struck me when looking at the spots on the sun that it was particularly good.*

At the first contact the telescope was steady, and my time is good.

When we were examining the adjustment of the pointer of the finder with the slit of the spectroscope, I kept the former on the upper cusp of the sun's crescent. The telescope was vibrating too much in the wind to judge if the adjustment was *very* accurate, but I do not think there was an error of one minute.

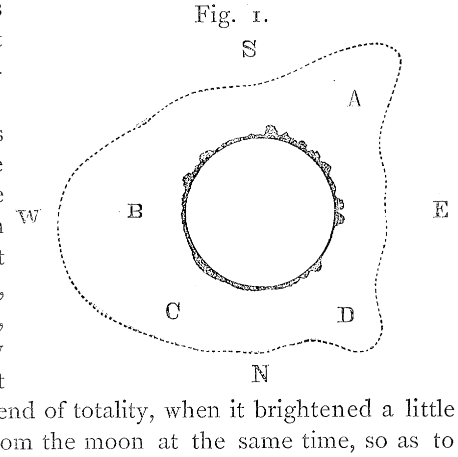
I am unaware of the position in which the slit was placed with respect to the vertical; but I remember that, facing the sun, the eye-telescope of the spectroscope was on the left and inclined very little upward, say fifteen degrees.

I watched the disappearance of the sun without the intervention of any coloring-glass whatever. The definition was perfect. The fine crescent shortened somewhat rapidly, then broke up at either end into several elongated beads of light, and finally disappeared with startling suddenness, when I gave you the time-signal. I could not hear the beats of the chronometer.

Up to this time I had not seen anything of the corona or protuberances, and I do not think the complete disk of the moon was visible; however, I did not take my eye off the disappearing limb of the sun. The ring of prominences and corona appeared as if by magic as the last ray of direct sunlight vanished. The brilliancy of the prominences quite startled me, especially of one a little to the right of the vertex. Their color, and that of the thin ring of light which united them, was a strong apricot pink, a color very difficult to match or describe. It was quite free from any tint of orange or vermilion, and unlike any color of the solar spectrum. The high protuberances appeared like electric lights attached to the limb of the moon. There was a break or interruption in the colored ring in the right lower quadrant, some twenty degrees long, between two not very conspicuous prominences, D., Fig. 1.

The body of the moon was considerably illuminated with a greenish-gray tint, similar to the *lumiere cendree* seen at new moon. I have no doubt the irregularities of the lunar surface might have been seen. The moon was not so dark as the sky beyond the corona, of which I had an extensive view from the size of the field.†

Fig. 1.



The first part of the corona that attracted my attention was a ray, or enlargement in the right upper quadrant, a little to the right of the very bright protuberance A, (Fig. 1;) but by the time you had done with the polariscope, which could hardly have been ten seconds, the left and lower left parts, B to C, were the largest and brightest, and so they remained until near the end of totality, when the part D, in the right lower quadrant, almost, if not quite, rivaled them. The ray D did not enlarge suddenly, but very gradually indeed. The upper part of the corona was throughout the faintest. The extreme right was also faint until quite at the end of totality, when it brightened a little No part increased in brilliancy without extending itself farther from the moon at the same time, so as to become a more or less pointed ray. I do not think any part of the corona extended farther than twenty-five minutes from the limb of the moon; no part was less than ten minutes, if so little.

* The finder attached to my telescope has an object-glass of 1.20 inches aperture, and 8.78 inches focal distance. The eye-piece used by Captain Tupman produced a power of 10 diameters. (W. H.)

† The field of view was 3° 15′ in diameter. (W. H.)

Of the *structure* of the corona I have the liveliest recollection. It was made up entirely of fine black lines, (that is, black enough to be distinctly visible,) on a white background, which commenced imperceptibly at a short distance from the chromosphere, and went off into the sky beyond. They were continuous and uniform, but unequally distinct and unequally distributed, although close together everywhere. There were no curved or crossed lines, or lines radiating from any other point.

The corona had no definite boundary. With the exception of the clearly-defined limit of the red flame-ring there was no other line of demarkation regularly or irregularly parallel to the moon's limb. It was white without a trace of any other color, and less intense than a bright white cloud, except at the base, which was very bright. The intensity diminished rapidly to a distance of five or six minutes, remained nearly uniform to near the outer limit, then faded off rather suddenly, although the unequal extension of the different parts gave it the appearance, as a whole, of fading off much more gradually. There was nothing *geometric* in its form, and the brighter portions, which were invariably those that extended the farthest, did not appear to have any relation of position with the prominences. The outer limits exhibited no coruscations, but faded off in the same uniform radial manner all round.

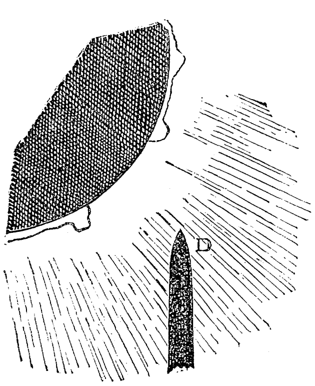
It is quite inconceivable that the corona could have presented the appearance it did to me if it be an atmosphere surrounding the sun to a distance of twenty-five or thirty minutes. My impression is that I was looking into a hollow cylinder of light, the inner surface of which was projected flatly on the plane perpendicular to the line of sight or axis. The change in the form and intensity of parts of the corona also seemed incompatible with its belonging to the sun.

I hardly feel justified in making a drawing, for, having concentrated my attention on keeping the pointer in the most favorable position for the spectroscope work, I did not make any estimations of angles of position, or of the extent or relative intensities of different parts. I chose the brightest parts, and remember whereabouts they were—but not exactly. Besides, my head was inclined considerably to my left, and my estimation of the position of the vertex may be considerably in error; but I am certain that the remarkably bright protuberance I noticed was very near the south point of the moon, then twenty-six and a half degrees to the right of the vertex.*

You will remember that during the partial phase we looked for a line of brighter light on the sun parallel to the limb of the moon. I once or twice fancied something of the kind, but the immediate contrast would account for it. I think it was with a power of eighty or ninety, with fair definition.† I also attentively observed the cusps and the limb of the moon. It would be difficult to imagine anything more striking than the extreme sharpness and *cleanness* with which the light was cut off. The irregularities of the lunar surface were projected very sharply on the sun, affording ocular demonstration of the absence of any atmosphere on the moon.

I endeavored to keep the pointer at a distance of eight or ten minutes from the ring of prominences; but, the vibration of the telescope being about ten minutes on either side, the pointer oscillated between the limb of the moon and the outer part of the corona. I first placed it in the middle of the bright part B, (Fig. 1,) and gradually moved it down to C, and eventually on to D. Once I moved it from B right across to A; but as you then said you could see nothing I quickly went back to B. While examining the part D, the pointer remained very steady for several seconds opposite the middle of the interruption in the ring of prominences, the extreme point making about an equilateral triangle with the terminal protuberances, (Fig. 2.)

Fig. 2.



Of the ninety-five to one hundred seconds that you observed the spectrum the pointer was not ten near the ring of prominences. The spectrum of the chromosphere may have been very often visible when the silt was normal to the limb. From your exclamations at the time I know that the outer limit of the corona gave a *green* line, and it seems to me a most fortunate circumstance that the slit was open to the right extent.

The limb of the sun re-appeared very suddenly, and I at once noted the time, for which I had to put my face very close to the chronometer.

* Captain Tupman sent me a colored drawing which is reproduced in Plate I; except that the sky is there represented somewhat lighter, and the body of the moon somewhat darker, than in the original. (W. H.)

† The magnifying power was 65½ diameters. (W. H.)

The following are the times I noted by Negus 1115:*

	h.	m.	s.
First contact	11	35	30
Disappearance of the sun	1	0	9.5
Reappearance of the sun	1	1	55
Last contact	not observed.		

At Malta the first and last contacts were observed by M. Barthet, with an astronomical telescope of about two inches aperture, as follows:

	h.	m.	s.	
First contact	0	34	12	Valletta mean time.
Last contact	3	18	50	

The position of his observatory is 38 seconds of latitude north, and 0.6 second (of arc) of longitude west of "Spencer's Monument."† I had computed the time of first contact very accurately from the data in the British Nautical Almanac as $0^h\ 33^m\ 5^s$ for the Monument.

For Syracuse the predicted time of the first contact, computed from the British Nautical Almanac, was about ninety-five seconds too late; by the American Ephemeris only four seconds too late.

For the beginning of totality, the British time was about twenty-one seconds too early; the American about sixteen seconds too late.

The duration of the total phase was accurately predicted as one hundred and six seconds.

For the last contact Agnello's time, computed from British data, was $3^h\ 21^m\ 54^s$, and the observed times ranged from $3^h\ 21^m\ 39^s$ to $3^h\ 21^m\ 59^s$ Syracuse mean time.

I am, etc.,

G. L. TUPMAN,
Captain R. M. A.

* At the time of the eclipse Negus 1115 was $1^h\ 2^m\ 45^s.7$ slow of local mean-time. For a complete list of all the times of contact observed at Syracuse, see page 82. (W. H.)

† This, combined with the geographical determinations of the expedition, gives for the position of M. Barthet's observatory, atitude 35° 53′ 37″ north, longitude $0^h\ 58^m\ 4^s.5$ east of Greenwich. (W. H.)

REPORT

OF

PROFESSOR J. R. EASTMAN, U. S. N.

REPORT OF PROFESSOR J. R. EASTMAN, U. S. N.

UNITED STATES NAVAL OBSERVATORY,
Washington, D. C., March 1, 1871.

COMMODORE: I have the honor to present to you, in accordance with the orders of the Honorable Secretary of the Navy, the following report of my observations of the total solar eclipse at Syracuse, Sicily, on December 22, 1870.

In accordance with your instructions I provided myself with the following instruments: A telescope, equatorially mounted, by Clark, with an object-glass 3.25 inches in diameter; an aneroid barometer; dry and wet bulb thermometers; an actinometer, a photometer, and a Savart polariscope.

The above instruments are the same, except the photometer and polariscope, that I used in 1869, and are described in the Observatory Report of the Eclipse of August 7, 1869. The photometer is the same as described in that report, except that the tube has been shortened 3.5 inches, in order, if possible, to measure the relative amount of diffused light in the atmosphere during totality. The Savart polariscope was loaned me by Professor Harkness. It is constructed in the usual manner of a plate of quartz, cut obliquely to the axis, and a plate of tourmaline, but is mounted in a cell, and by means of an adapter was made to fit the telescope like an ordinary eye-piece. In London I completed my list of instruments by purchasing a solar and maximum and minimum thermometers, which had been tested at Kew.

All these instruments, but the telescope and polariscope, were a portion of my private collection.

In company with Professors Hall and Harkness, I left New York on the 2d of November, 1870, by the Cunard steamer China, for England, where I was detained two weeks before I could secure passage by steamer from Southampton to Malta. At Malta I was again delayed by the failure of the steamer, on account of a storm, in making her regular trip, but finally reached Syracuse on the 11th December.

The Prefect of Syracuse very kindly offered us our choice of observing stations, and we selected that bastion of the city wall, northwest of the Porta Terra, or gate toward the mainland. By the courtesy of the Prefect and of the Commandant of the Italian troops in Syracuse, we were allowed the use of an artillery store-house in this bastion for sheltering our instruments when not in use, and were not only constantly provided with a sentinel at the store-house gate during our stay in Syracuse, but Colonel Rossi furnished a strong guard on the day of the eclipse to prevent our being annoyed by crowds of idle wonderers from the city.

On unpacking the instruments the aneroid barometer was found to be somewhat damaged, probably owing to the severe usage which the box received when it was forced open by the customs officers in Liverpool.

The errors of the barometer were determined by comparison with another aneroid, and by frequent comparison I found that its relative indications were tolerably reliable, though utterly useless for absolute determinations except when almost constantly compared with another instrument.

After securing a double-roof protection for the meteorological instruments, I commenced on December 16 a series of observations to determine the normal meteorological conditions, as a standard with which to compare the changes that might occur during the eclipse.

I selected as my station for observing the eclipse the Stone Gun-Platform, 36⅔ yards south of the station chosen by Professor Harkness for observations for time. The meteorological instruments were stationed about four yards east of my observing station, the barometer being fifty-two feet above mean half-tide in the harbor of Syracuse.

It may be interesting, as showing something of the climate of Syracuse in December, to present the daily record of the observations, which I have accordingly done in the following tables. In these tables the

readings of the barometer have been corrected only for error in scale reading and for temperature, and the proper corrections have been applied to the readings of the thermometers.

Date.		Barometer.	Thermometers.			Wind.		Weather.	
			Dry.	Wet.	Solar.	Direction.	Force.	Clouds.	Portion cloudy.
1870.	h.	in.	°	°	°				
Dec. 16,	8	29.99	56.7	55.7	89.0	SE. . .	1	Cirrus . . .	1
	9	29.98	54.7	54.0	95.5	SE. . .	1	Cirrus . . .	1
	11	29.98	64.2	60.5	106.8	SE. . .	1	Clear . . .	0
	12	29.96	61.6	58.7	107.5	SE. . .	1	Clear . . .	0
	13	29.95	62.2	59.0	108.0	Calm .	0	Clear . . .	0
	14	29.94	64.4	59.0	108.5	Calm .	0	Clear . . .	0
	15	29.94	65.2	60.0	102.0	Calm .	0	Clear . . .	0
	16	29.94	62.7	57.0	100.5	Calm .	0	Clear . . .	0
	17	29.96	60.2	56.0	63.0	Calm .	0	Clear . . .	0
	18	29.96	57.2	55.0	55.0	Calm .	0	Stratus . . .	1
	19	30.00	57.2	53.0	55.0	Calm .	0	Stratus . . .	1
		Maximum, 66°.8.				Minimum, 46°.8.			
Dec. 17,	8	30.02	50.5	48.3	70.8	Calm .	0	Clear . . .	0
	9	30.02	54.7	53.0	87.0	Calm .	0	Clear . . .	0
	11	29.95	65.2	60.0	102.5	Calm .	0	Haze and cirri.	1
	12	29.93	67.3	60.0	103.5	Calm .	0	Haze and cirri.	1
	13	29.84	69.7	61.9	111.0	Calm .	0	Haze and cirri.	1
	14	29.84	68.5	61.3	110.2	Calm .	0	Haze and cirri.	1
	15	29.83	67.7	61.5	99.5	Calm .	0	Haze and cirri.	1
	16	29.82	68.2	61.3	96.0	Calm .	0	Haze and cirri.	1
	17	29.83	70.2	58.5	71.0	Calm .	0	Haze and cirri.	2
		Maximum, 73°.0.				Minimum, 49°.0.			
Dec. 18,	10	29.83	66.7	57.5	112.5	Calm .	0	Cirro-stratus .	2
	11	29.79	71.2	58.0	120.0	NW. .	2	Cirro-stratus .	3
	12	29.78	69.2	57.0	125.0	NW. .	2	Cirro-stratus .	4
	13	29.77	68.5	57.7	95.8	NW. .	1	Cirro-stratus .	5
	14	29.76	67.7	57.2	82.8	NW. .	1	Cirro-stratus .	8
	15	29.76	66.2	57.5	94.5	NW. .	1	Cirro-stratus .	8
	16	29.82	64.2	54.5	89.0	NW. .	1	Cirro-stratus .	7
	17	29.83	62.5	51.8	64.0	NW. .	1	Cirro-stratus .	5
		Maximum, 72°.9.				Minimum, 41°.0.			
Dec. 19,	8	29.97	44.7	41.5	76.5	Calm .	0	Clear . . .	0
	9	29.96	50.2	46.3	87.5	Calm .	0	Clear . . .	0
	10	29.94	55.7	49.0	102.0	Calm .	0	Clear . . .	0
	11	29.91	59.4	51.8	101.0	Calm .	0	Clear . . .	0
	12	29.89	60.7	52.9	107.5	S. . .	1	Clear . . .	0
	13	29.89	60.2	52.5	103.0	S. . .	1	Clear . . .	0
	14	29.89	61.2	53.0	102.0	S. . .	1	Clear . . .	0
	15	29.89	59.5	51.0	103.5	S. . .	1	Clear . . .	0
	16	29.88	58.2	50.8	104.0	Calm .	0	Clear . . .	0
	17	29.87	57.2	51.0	94.5	Calm .	0	Clear . . .	0
	18	29.89	52.2	47.5	55.5	Calm .	0	Clear . . .	0
	19	29.90	51.2	47.0	47.5	S. . .	1	Clear . . .	0
	20	29.92	48.7	46.0	48.0	Calm .	0	Clear . . .	0
		Maximum, 62°.2.				Minimum, 44°.0.			

Date.		Barometer.	Thermometers.			Wind.		Weather.	
			Dry.	Wet.	Solar.	Direction.	Force.	Clouds.	Portion cloudy.
1870.	h.	in.	°	°	°				
Dec. 20,	8	29.85	56.2	51.5	53.6	W. . .	1	Cumulo-stratus	9
	9	29.84	57.8	53.0	65.0	W. . .	2	Cumulo-stratus	9
	10	29.83	60.2	54.0	100.5	W. . .	2	Cumulo-stratus	6
	11	29.79	61.0	54.0	105.0	W. . .	2	Cumulo-stratus	3
	12	29.77	61.7	55.0	112.0	W. . .	4	Cumulo-stratus	2
	13	29.76	62.2	56.5	111.0	W. SW .	3	Clear . . .	0
	14	29.74	62.2	54.5	105.0	SW. .	3	Clear . . .	0
	15	29.74	61.2	54.3	102.5	SW. .	3	Clear . . .	0
	16	29.75	59.2	53.0	95.5	SW. .	3	Clear . . .	0
	17	29.76	57.2	51.5	67.0	SW. .	3	Clear . . .	0
			Maximum, 63°.3.			Minimum, 49°.5.			
Dec. 21,	7	29.74	53.2	48.2	47.8	Calm .	0	Cirro-stratus .	2
	8	29.74	56.2	50.2	85.5	Calm .	0	Cirro-stratus .	1
	9	29.71	57.2	52.2	89.5	Calm .	0	Cirro-stratus .	1
	10	29.68	62.2	55.2	105.0	SW. .	1	Cirrus . . .	1
	11	29.65	63.7	57.2	109.0	Calm .	0	Cirrus . . .	1
	12	29.62	64.2	58.0	113.9	SW. .	2	C. K. . . .	2
	13	29.60	65.7	59.0	113.0	SW. .	3	C. K. . . .	2
	14	29.57	65.7	58.5	110.5	SW. .	2	C. K. . . .	2
	15	29.59	63.8	59.6	108.0	SW. .	2	C. K. . . .	3
	16	29.61	61.7	58.0	83.0	SW. .	1	C. K. . . .	5
			Maximum, 66°.8.			Minimum, 47°.0.			

On the 21st there were unmistakable signs of the coming change in the weather. The barometer was unsteady, but gradually falling; the low bank of clouds, of a peculiar ashy hue, that hung over the Malta Channel, threatened wind from the S. W. or W., and during the entire day Etna was wrapped in a heavy mass of cumulus clouds. At 1^h a. m. on the 22d, a very light shower came on, with a slight sprinkle of snow, accompanied with lightning and thunder. At 7^h a. m. the clouds were quite dense near the horizon, but were clearing away near the zenith. The clouds seemed to condense near the horizon, and by $9^h\ 30^m$ a. m. only light flitting clouds were to be seen at the altitude of the sun. During the morning Etna was visible for about three hours, and it was evident that since the previous morning it had experienced a heavy fall of snow. The barometer was quite low during the morning, and in fact all day, and while Etna was visible in the morning there was an unusually large cloud of smoke or vapor flowing from the crater.

At 11^h a. m., I attempted to make a sketch of the spots on the sun, but the strong wind jarred my telescope so much that I was obliged to give up the idea.

In order to obtain the most and the best work in the shortest time, I arranged the following plan, which, so far as circumstances would permit, I was able to carry out in every respect:

1°. Observe first contact.

2°. Observe with the actinometer until five minutes before the beginning of totality, occasionally examining the edge of the advancing moon.

3°. Observe the time of the beginning of the total phase.

4°. With the polariscope observe—1°. The dark surface of the moon; 2°, the sky near the corona; 3°, the corona, especially the denser portions.

5°. Observe the time of the end of totality.

6°. Observe with the actinometer as before.

7°. Observe the time of last contact.

Mrs. Eastman was, as in 1869, to make the usual meteorological observations, and observe with the photometer at intervals of ten minutes during the progress of the eclipse, and during the total phase to make one observation, if possible, with the photometer, and read the solar thermometer once.

By noon the wind had considerably increased and the flying clouds were increasing in density.

At the time of first contact, though the sky was perfectly clear about the sun, the wind disturbed the telescope so much that I could not get a good image of the sun's limb at the point of contact, and the time of contact, as I observed it, $11^h\ 39^m\ 12^s$, by chronometer Negus 1340, which I used for all time observations on the 22d, must have been several seconds too late.

Soon after first contact I attempted to make some observations with the actinometer, but the increasing and quickly moving clouds prevented my getting more than two good readings, and though I made several subsequent trials at every favorable opportunity during the day, I did not succeed in getting a single complete set of observations.

After the first contact the cloudiness increased quite rapidly, and about twenty minutes before the totality a dense white cloud completely obscured the sun, its increasing proportions threatening to frustrate all our hopes for success. This cloud did not disappear by moving away in a mass, but seemed to melt away from a point in the vicinity of the sun, remains of it completely surrounding the sun until some minutes after totality. About four minutes before the total phase a rift, about three times the diameter of the sun, appeared in this cloud, through which the outline of the sun could be easily traced, and the light cirrus-like clouds that were constantly passing over this space were dense enough to enable me to examine the decreasing cusps of the sun without the aid of the colored shade for the eye-piece.

As the crescent of light gradually decreased the boundary of the aperture in the cloud grew somewhat larger and more distinct, with the sun apparently in the center of this cloud-frame, and the light, fleeting clouds that drifted across the face of the moon became less dense and moved with a lower velocity. After the obscuration of the sun by this cloud the wind increased considerably and blew in fitful gusts, while the chilly sensation, as of going into a deep cavern, came on suddenly and to such an extent that the addition of more clothing failed to counteract its effect. The phenomenon of total obscuration of the solar light was, of course, owing to the apparent difference of the relative diameters of the sun and moon, quite different from that in 1869.

In 1869 the thin crescent faded away very rapidly from the cusps toward the central line, while at the center there was an appreciable breadth of light; but at Syracuse the crescent of the same breadth was at least twice the angular length of that of 1869, and broke up into four pieces, all of them seeming to disappear at the same instant. Just previous to the totality I attached the polariscope by means of the adapter to the telescope and carefully adjusted the focus. The eye-piece connected with the polariscope had a magnifying power of 32, and with this eye-piece I observed the beginning and end of totality.

I noted the time of beginning of totality at $1^h\ 3^m\ 51^s.0$ by chronometer 1340. I immediately turned the telescope upon the dark face of the moon, and saw alternate dark and light bands of nearly equal intensity over the whole surface, but the distinction was a little less marked at the center of the moon. These bands were not changed in distinctness or tint during a complete revolution of the polariscope. I then moved the telescope so as to take successively into the field portions of a belt of the sky outside the visible limits of the corona, extending completely around the moon, but the alternate dark and light bands remained the same in tint, but varied in intensity or distinctness, according to the position of the clouds. Where the sky was nearly clear of clouds the definition of the bands was about the same as on the dark surface of the moon, but the definition was very much improved whenever a denser portion of the cloud was in the field. I then moved the telescope around the moon in such a way as to keep the lower and denser portion of the corona near the middle of the field, with results similar to those derived from the examination of the sky beyond the corona, except that the intensity of the tint of the bands was at its maximum when they were parallel or perpendicular to a tangent to the moon's limb. Once I thought I detected a faint tinge of green in the bands, but I was not able to see it again. I also saw a faint but decided red tinge in the bands over what I at first took to be a very dense portion of the corona, on the southwest limb of the sun, but on more careful scrutiny it proved to be a cloud moving easterly. I then turned the telescope for an instant to the bright edge of a cloud near the westerly limb of the sun, and there saw distinct traces of

color in the bands, though the tints were very faint. As it was now nearly time for the end of totality, I brought that portion of the moon's limb where the light of the sun would re-appear into the center of the field, and, during the few remaining seconds, carefully studied the appearance of the corona and the most conspicuous protuberance.

The structure of the corona appeared essentially the same as in 1869, and consisted of three distinct portions.

That portion next the edge of the moon, in many cases nearly obscured by the low and quite continuous range of protuberances which stretched along the limb of the sun for about 150°, was nearly white and resembled the denser portions of nebulæ. It seemed to be concentric with the sun, and I estimated its height, at the point near the large protuberance, at about one minute. The height of the next portion above the limb of the moon was about six minutes, and it had a decided radial structure, especially near the outer limit. Its color was silvery white. This portion seemed to be concentric with the sun, and its form was quite symmetrical, showing no change whatever in its outline in the vicinity of the protuberances.

The third and outer portion of the corona, on the western limb of the sun, consisted of three projections of light striated, or of a radial structure, resembling the short bands of streamers that are frequently seen rising from the auroral arch. One of these projections on the northwest limb of the sun was quite small, extending not more than five minutes above the limit of the second portion of the corona. The others, one on the southwest and one on the northwest limb of the sun, attained an altitude of about nine minutes above the second division of the corona.

The projections from the main portion of the corona were a silvery or grayish-white color, and the light was steady without any flickering.

Near the extremities of these projections they resembled very much the appearance of the sunlight as it passes through the interstices of the clouds near sunrise or sunset. The only protuberance which I noted carefully enough to enable me to sketch its position and outline, was located a little to the north of the point where the sun's light re-appeared. In form it resembled a mushroom, or the conventional representation of a waterspout, its outer limit being about two minutes above the limb of the moon. Its northern limit was quite smooth and regular, while the southern edge was rough and jagged, looking as if a strong current of wind was sweeping the lighter portions of its mass to the southward, and showing these rough edges and floating, irregular filaments in projection. The color of the southern end of this protuberance was a lighter pink than the main portion of the mass, or than the low range of protuberances, which I had no time to examine further than to note their color and general outline.

The end of totality was preceded by an increasing glow near the limb of the moon, south of the large protuberance, and announced by the bursting forth of a mass of light, shaped like the apex of a sugar-loaf, which spread north and south along the edge of the moon like a flash of lightning. This phenomenon I noted at $1^{h}\ 5^{m}\ 32^{s}.5$. At the end of totality I immediately finished my sketch of the corona and protuberances, and completed my fragmentary notes of the phenomena.

About fifteen seconds before the end of totality, the murmurs and exclamations of the people who had crowded into the open space between our guards and the prison, became so loud that I could not hear the beat of my chronometer, and Mrs. Eastman abandoned her general observations to count the second beats of the chronometer aloud.

During totality I felt some hard substance strike my face several times, and Mrs. Eastman noticed the fall of a few small hail-stones at that time. At about fifteen seconds before the end of totality the clouds and haze had nearly disappeared about the sun, and in five minutes afterward it was perfectly clear. Mrs. Eastman succeeded with all her contemplated observations except with the photometer, and only by her assistance was I enabled to observe the time of the end of totality.

Before totality the flying clouds so interfered with every set of observations with the photometer that their value was entirely destroyed, and during totality the whole aperture of the instrument did not admit light enough to illuminate the image at the base of the tube. After totality, the flying clouds, though they obscured the sun but a few minutes at a time, destroyed the value of the observations for the purposes of comparison, and they have therefore been entirely omitted.

The clouds gradually decreased, and about the time of last contact had entirely disappeared in the vicinity of the sun, while the wind had nearly died away. I observed the last contact with great care and very accurately, I think, at $2^{h}\ 22^{m}\ 53^{s}.5$.

The meteorological observations during the day, as made by Mrs. Eastman, are shown in the following table, where all the scale readings have been corrected when necessary, and the barometer readings have been corrected for temperature.

Date.		Barometer.	Thermometers.			Wind.		Weather.	
			Dry.	Wet.	Solar.	Direction.	Force.	Clouds.	Portion cloudy.
1870.	h. m.	in.	°	°	°				
Dec. 22,	8 0	29.36	52.4	49.5	86.5	W. . .	1	C. K.	2
	9 0	29.36	54.9	50.2	90.0	W. . .	1	C. K.	1
	10 0	29.36	57.3	52.0	101.5	W. . .	1	C. K.	0.5
	11 0	29.36	58.7	49.5	107.5	W. . .	1	C. K.	1
	12 0	29.35	59.7	51.5	116.5	W. . .	1	C. K.	1
	12 30	29.35	59.6	51.2	115.2	W. . .	1	C. K.	2
	12 40	29.35	57.6	49.8	111.2	W. . .	1	C. K.	2
	12 50	29.35	58.9	51.0	102.5	W. . .	2	C. K.	2
	13 0	29.35	58.6	51.0	102.5	W. . .	2	C. K.	3
	13 10	29.35	57.5	50.5	99.5	W. . .	2	C. K.	3
	13 20	29.35	56.7	50.2	77.5	W. . .	2	C. K.	3
	13 30	29.36	55.4	49.2	65.5	W. . .	3	C. K.	4
	13 40	29.36	54.7	48.8	65.1	W. . .	2	C. K.	3
	13 50	29.37	54.2	48.6	57.0	W. by N.	3	C. K.	4
	14 0	29.38	54.0	48.2	53.5	W. . .	2	C. K.	4
	14 5	29.38	53.7	48.0	53.0	W. . .	3	C. K.	4
	14 20	29.38	53.2	48.0	60.6	W. . .	3	C. K.	3
	14 30	29.38	53.2	48.0	67.5	W. . .	2	C. K.	3
	14 40	29.38	53.2	48.0	78.5	W. . .	2	C. K.	3
	14 50	29.38	53.2	48.1	77.4	W. . .	2	C. K.	2
	15 0	29.39	53.7	48.6	85.8	W. . .	1	C. K.	2
	15 10	29.39	53.4	47.8	74.0	W. . .	1	C. K.	2
	15 20	29.39	53.7	48.0	77.5	Calm .	0	C. K.	1
	15 30	29.39	54.4	48.1	82.7	W. by N.	1	C. S.	1

Maximum temperature from December 21 17^h to December 22 16^h . . . . 61°.5
Minimum temperature from December 21 17^h to December 22 16^h . . . . 52°.0
Amount of rain and snow on the morning of the 22d . . . . 0 .02 inch.

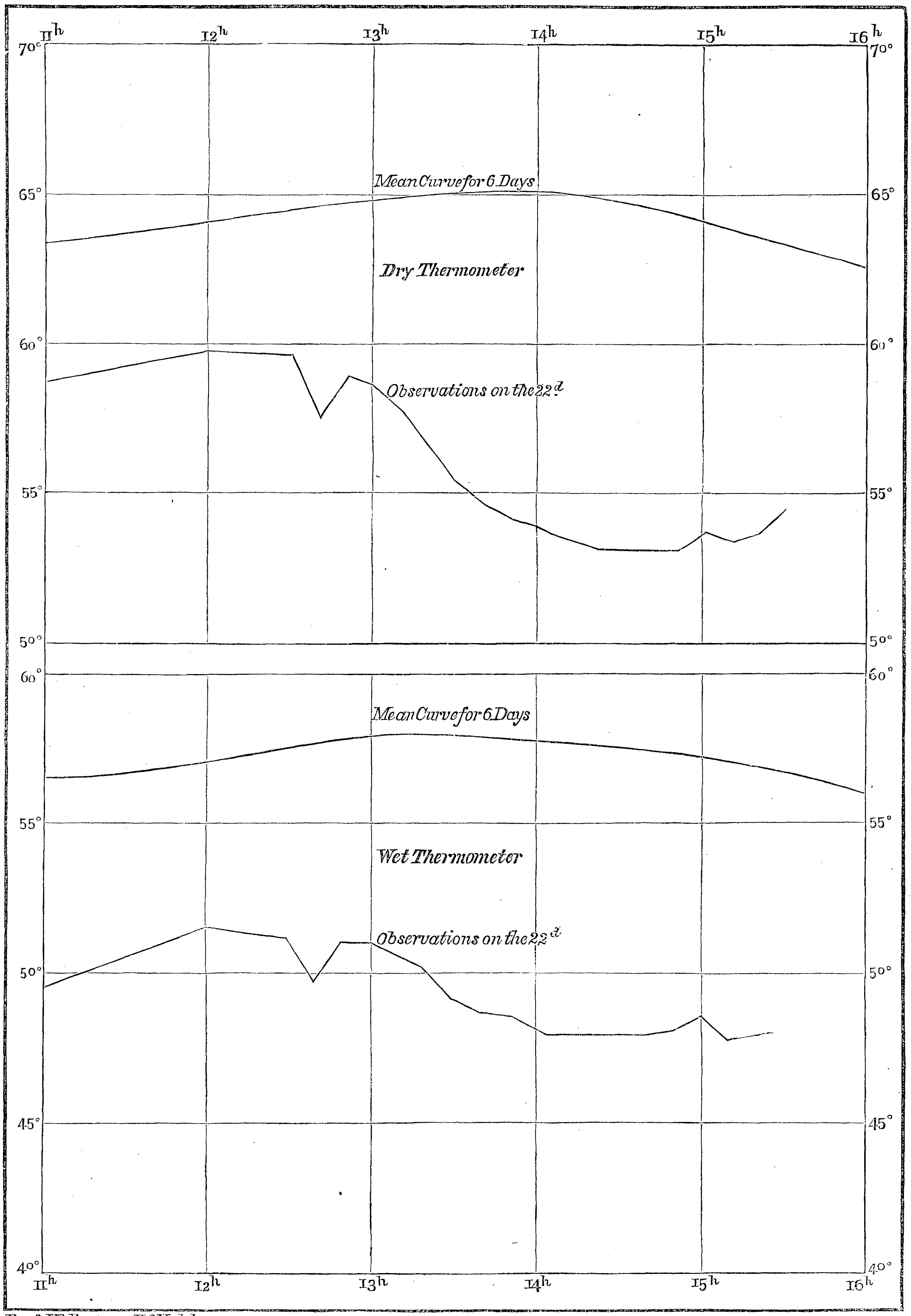
Fig. 1 represents the mean curves of the dry and wet thermometers for six days and the observations on the 22d.

Fig. 2 represents the mean curve of the solar thermometer for six days and the observations on the 22d.

On the morning of the 22d, my chronometer No. 1340 was compared with No. 1115, used by Professor Harkness, and I also compared them after the observation of the last contact. The following are the results:

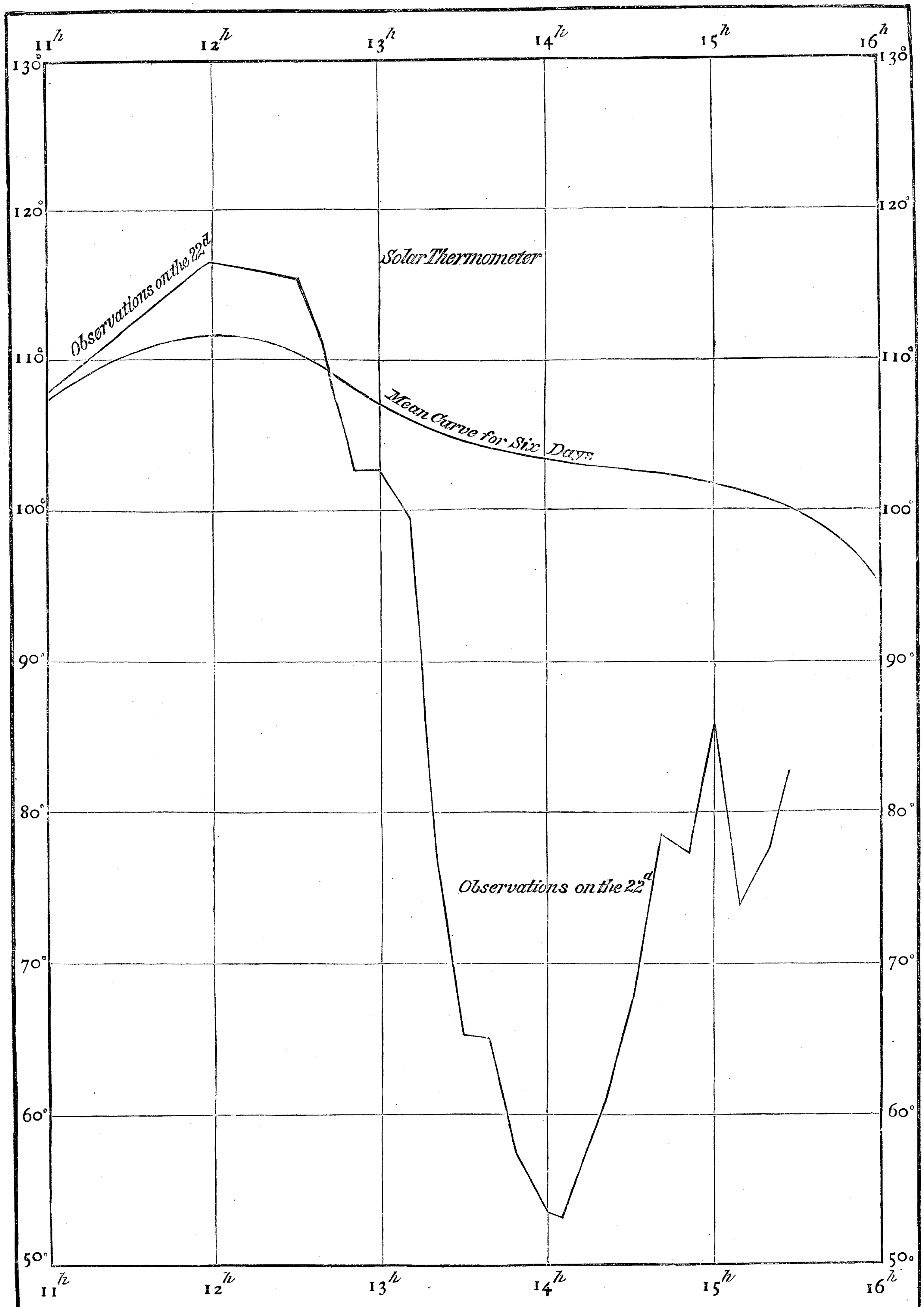
No. 1340.			No. 1115.		
h.	m.	s.	h.	m.	s.
9	5	39.2	9	2	0
2	32	39.8	2	29	0

Fig. 1.



Prof. J. R. Eastman, U. S. N. del.

Fig. 2.



Prof. J. R. Eastman U. S. N. del.

From Professor Harkness's observations, No. 1115 was found to be $1^h\ 2^m\ 45^s.7$ slow of local mean time at both the morning and afternoon comparisons; hence the errors of No. 1340 when the comparisons were made were $-0^h\ 59^m\ 6^s.5$ and $-0^h\ 59^m\ 5^s.9$, with a gaining rate of $0^s.11$ an hour. Applying the corrections deduced from the above data to the observed times of contact, and comparing the results with the times computed by Professor Hall from the data in the American Nautical Almanac, assuming the latitude of Syracuse to be $+37°\ 3'\ 53''$ and the longitude $-6^h\ 9^m\ 25^s.6$ from Washington, we have the following table:

	Prof. Hall's Computed Time.			Observed Time.			C.—O.
	h.	m.	s.	h.	m.	s.	s.
First contact	0	38	15.8	0	38	18.2	— 2.4
Beginning of totality . .	2	3	1.8	2	2	57.1	+ 4.7
End of totality	2	4	43.0	2	4	38.6	+ 4.4
Last contact	3	22	5.1	3	21	59.4	+ 5.7

The accompanying sketch was made from the appearance of the phenomena in the telescope when the principal prominence was near the center of the field, just before the end of totality, and to avoid any chance for confusion the sketch has been finished in the inverted position in which it was seen in the telescope.

On the night of the 12th December I saw a few meteors, and the observations are given in Addendum A.

While in Malta I was greatly indebted to Mr. Lyell T. Adams, the American Consul, who spared no pains to make our forced stay an agreeable one; to Captain G. L. Tupman, of the English Navy, and Mr. Rosenbusch for many courtesies; and to Rear-Admiral Hastings R. Yelverton, commanding the English fleet in the Mediterranean, who very kindly offered to carry us to Syracuse in his dispatch-boat if the regular steamer did not go in season.

At Syracuse the American Consular Agent, Signor Nunzio Stella, was very assiduous in his courteous attentions to our party and rendered us all the aid we could desire, as did also Mr. Frederick Behn, the American Consul at Messina. I am also under obligations to the Prefect and the Syndic of Syracuse, to Colonel Rossi, Commandant of the King's troops in Syracuse, to Signor Bisani, the English Consul in the city, and to the Syndic of Augusta; in fact, this list might be extended to contain the names of all the government officials and scientific men whom I met in England or on the continent, since all manifested a strong desire to aid us officially and socially whenever an opportunity occurred.

As soon as the storm which came on after the eclipse had subsided, I left Sicily for the continent and reached Washington on the 18th February, 1871.

Very respectfully, your obedient servant,

J. R. EASTMAN,
Professor of Mathematics, U. S. Navy.

Commodore B. F. SANDS, U. S. N.,
Superintendent U. S. Naval Observatory, Washington, D. C.

ADDENDUM A.

Meteors observed at Syracuse, Sicily, December 12, 1870.

The observations were made from the tower of the "Albergo della Vittoria," and the tracks were recorded on a temporary chart hastily constructed for the occasion.

Only the southern portion of the heavens was mapped on this chart, as I intended to observe to the southward and note only such stars as might be seen by Captain G. L. Tupman at Valetta, Malta.

The time was taken from a pocket-watch, which, by comparison with our chronometers, was found to be fifty-five seconds slow of Syracuse mean time.

The times given in the following table have been reduced to Syracuse mean time.

Besides the meteors whose paths are given I saw thirteen that appeared in the east and the west, but beyond the limits of the chart.

Number.	Magnitude.	Time of Appearance.			Path.							
					Beginning.				End.			
		h.	m.	s.	h.	m.	°	′	h.	m.	°	′
1	3	8	42	25	3	10	− 17	0	2	36	− 23	30
2	4		45	10	2	32	+ 4	30	1	52	− 1	15
3	3	8	59	55	3	32	+ 22	30	3	1	+ 17	30
4	3	9	2	10	2	42	+ 21	30	2	9	+ 17	0
5	2		2	25	2	41	+ 20	0	1	47	+ 12	30
6	4		10	35	3	43	− 12	0	3	18	− 16	30
7	3		21	30	4	37	− 12	0	4	10	− 16	0
8	4		22	25	3	26	+ 7	30	3	22	+ 6	0
9	4		26	0	3	7	+ 1	30	2	28	− 6	0
10	3		35	45	4	0	− 5	30	3	32	− 10	0
11	3		42	40	4	2	+ 2	0	3	35	− 2	0
12	2		48	10	2	10	+ 10	30	1	33	+ 5	0
13	3	9	51	10	2	7	+ 13	30	1	36	+ 9	0

The light from all these meteors was white, but none of them left trains.

Most of them moved rapidly, but as I was observing alone I did not attempt to note the duration of each flight.

J. R. EASTMAN,
Professor of Mathematics, U. S. Navy.

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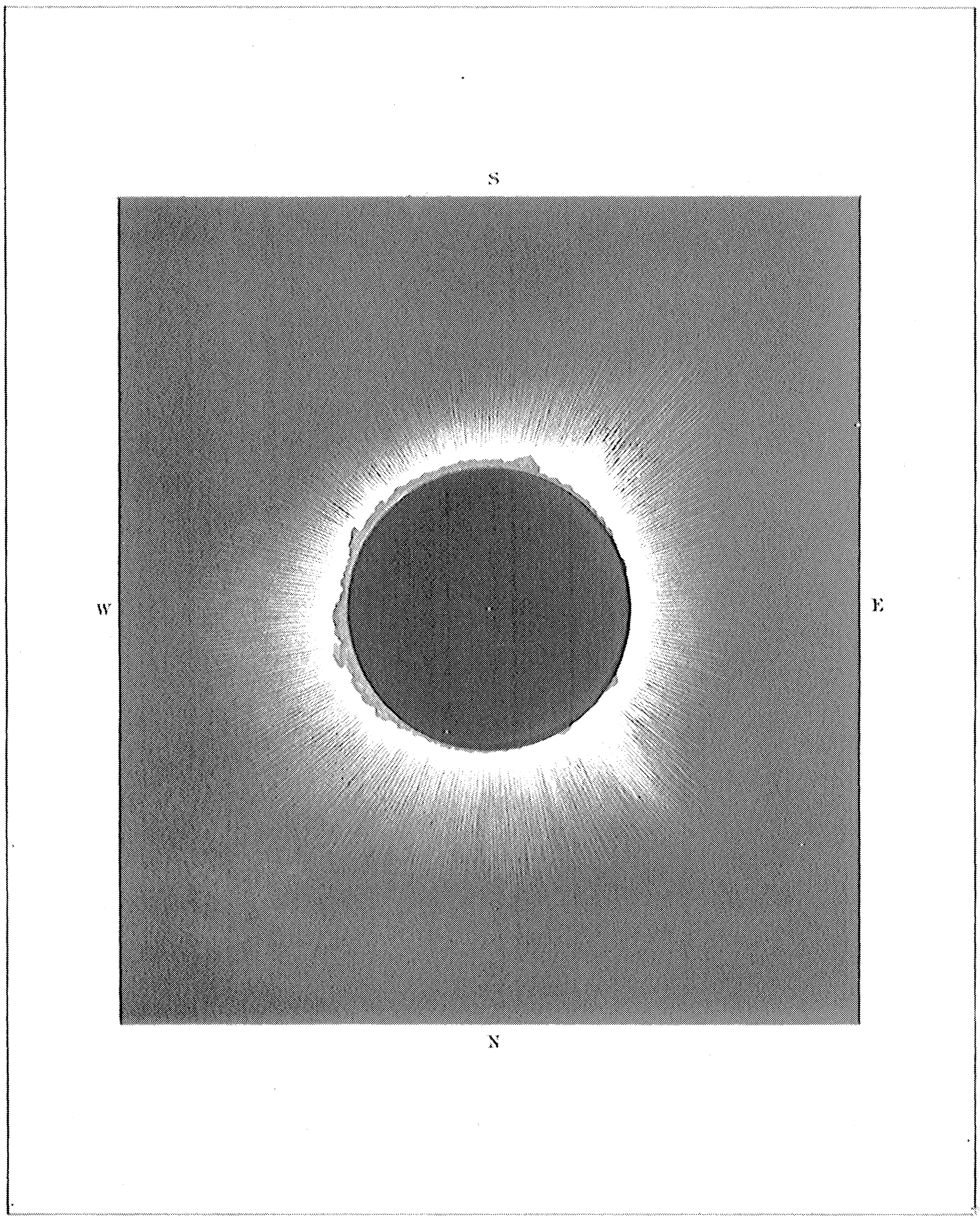
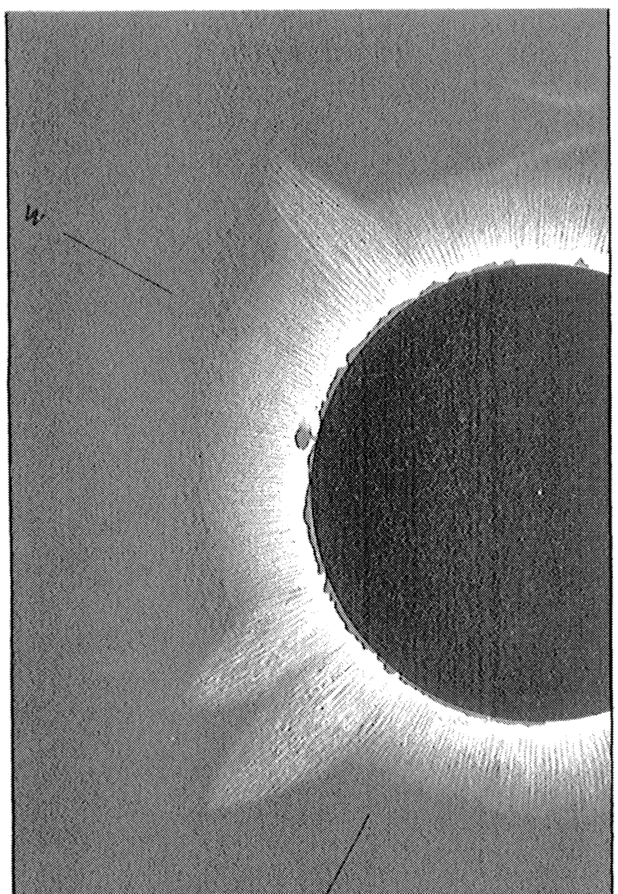


The Total Solar Eclipse of December 22, 1870, as seen at Syracuse, with a 1⅕ inch telescope by Captain G. L. Tupman, R. M. A.

Plate II.



Prof. J. R. Eastman, U.S.N. del.

Sketch of the Corona and Protuberances on the western limb of the Sun, near the end of the total phase of the eclipse of Dec. 22, 1870 by Prof. J. R. Eastman, U.S.N.

APPENDIX II.

WASHINGTON ZONES.

TABLE OF CONTENTS.

INTRODUCTION.

§ 1.

Soon after the establishment of the Naval Observatory a plan was formed for making an extensive catalogue of stars. An account of this plan may be found at pp. [39] to [42] of the Appendix to the annual volume of the Observatory for 1845. The work was begun in 1846, with three meridian instruments, the Mural and Meridian Circles and the Transit Instrument. The zones observed in 1846, below 30° south, were usually gone over but once, the Mural Circle and Transit Instrument taking alternate belts. Those in following years were gone over twice, and generally with different instruments.

The observations of zones of stars were discontinued in July, 1849, as it was then found that the astronomical force of the Observatory was not sufficient to perform the current and necessary duties of such an institution, and at the same time to complete the vast work of cataloguing stars which had been undertaken. In the mean time the professors in charge of the several instruments had prepared formulæ for the reduction of the zones, had determined and tabulated the various instrumental corrections necessary for making the reductions, and had begun the work of reducing. These reductions, however, were soon interrupted by the detachment from the Observatory of some of the officers, and by the ill-health of others, and nothing further was done until 1859. In that year the reduction of the zone observations was resumed by Mr. James Ferguson, late assistant astronomer, who reduced the zones observed with the Meridian Circle in 1846, and which were published in 1860. In the summer of 1861 copies of all the observations of zones were made under the care of Mr. Ferguson, and they were put into the hands of Dr. B. A. Gould to revise the work already done and complete the reductions. He returned them ready for printing in July, 1867.

The stars embraced in these zones are all in southern declination, and for the most part between the parallels of twenty and forty-five degrees, and in regions where as yet very few of the smaller stars had been observed. The observing-books indicate that a large part of the observations with the Mural Circle were carefully made. It has been decided, therefore, to publish the zones observed with that instrument, and also in a succeeding year those observed with the Transit Instrument, these two instruments having been employed conjointly. The following pages, 1 to 331, contain the observations of the zones observed with the Mural Circle in the years 1846, 1847, 1848, and 1849, with the reductions and the deduced positions of the stars. The declinations were prepared by Professor Coffin, except for a portion of the zones in 1849, as also the reductions to mean of wires for the Transit observations in 1846 and 1847, and the preliminary tables for the right ascensions for the whole period, except the portions involving clock and instrumental corrections.

§ 2.

THE INSTRUMENT.

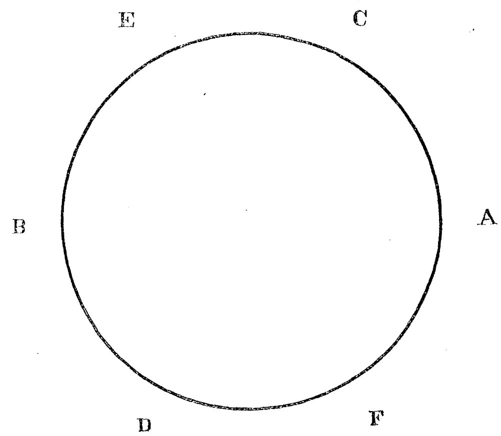
The following description of the Mural Circle, the instrument employed in making the observations, is taken, with slight changes, from the annual volume of the Observatory for 1846:

The Mural Circle was constructed by Troughton & Simms, of London.

During the time of the zone observations it remained in the *east* observing-room, and upon the eastern face of the sandstone pier, to which it was removed in the latter part of 1845. This pier is nine feet four inches high, six feet from north to south, and three feet three inches from east to west. The axis of the instrument reaches entirely across the pier, through an archway of thirty-two inches span and twenty-one inches pitch.

The circle is placed upon the eastern end of the axis, which is sustained in part on friction-rollers supported by counterpoises. It is five feet in diameter. The divisions are upon the periphery of the rim, cut upon a band of gold, and 5′ apart. They are read off by means of six of "Troughton's Reading

Microscopes," mounted firmly upon the face of the pier, and adjusted, as nearly as practicable, 60° from each other. These microscopes are designated in the observations by the letters A, B, C, D, E, F. They are arranged as in the accompanying diagram, A being on the north side of the pier, and the line through the center joining A and B being horizontal. By this arrangement



(the reading for)	B =	(the reading for)	A + 180°
"	C =	"	A + 300°
"	D =	"	A + 120°
"	E =	"	A + 240°
"	F =	"	A + 60°

approximatively.

These microscopes are adjusted, as to focal length, so that five revolutions of the micrometer-screw of each may measure one space, or 5′ of the circle. The micrometer heads are divided into sixty parts—reading, therefore, directly to *seconds*, or, by subdivisions easily made, to *tenths* of seconds. In general, in making readings of the circle, the *seconds* and *parts* are read from each of the six microscopes, and to these are prefixed the *degrees* and *minutes* from A alone. The mean of these six readings constitutes the "Circle Reading."

For illuminating the graduated limb, a lamp is placed behind the pier in a line with the axis of the instrument; the light from this lamp passes through six holes, bored through the pier, directly to the reflectors attached to the several microscopes. In this way a less variable illumination is secured than formerly by means of lamps carried in the hands. The object aimed at has been to have the same illumination for the readings of the circle, both in the observation of a star and in the determination of the "Nadir Point" which is to be employed in its reduction.

The circle is adjusted to a vertical position by means of a plummet suspended on a fine silver wire, with the aid of appendages, attached to the telescope known as "Ramsden's Ghosts," and to its position in the meridian by observations of the transits of circumpolar stars.

The telescope of this instrument has an object-glass of four inches clear aperture, with a focal length of five feet. It is attached to an independent axis, moving within the axis of the circle, and may be moved to any position with reference to the graduations. The ends of the tube, or the cells supporting the object-glass and the micrometer, are firmly clamped to the rim of the circle.

The eye-end of the telescope is furnished with a fixed diaphragm, containing seven vertical wires, designated I, II, III, &c., nearly equidistant, and at an average interval apart of $15^{s}.4$, (in time,) and one horizontal wire, which it is found convenient to call the *fixed wire*. The adjustments of this diaphragm have consisted in placing it in the principal focus of the object-glass—turning it so that an equatorial star will exactly traverse the *fixed wire*—and, the circle being adjusted to an exact vertical position and the telescope directed to the nadir, moving the diaphragm so that the *vertical wire* IV will coincide with its image reflected from a surface of quicksilver and seen by means of the collimating eye-piece.

In connection with the fixed diaphragm is another, movable, with a micrometer-screw, and furnished at the commencement of the year (1846) with one wire or spider's line only. In the latter part of February, in order to adapt the instrument to the work of cataloguing, this diaphragm was furnished with *eight* additional wires parallel to the original one, and distributed on each side of it at distances equivalent to five revolutions of the micrometer-screw. Subsequently the four nearest to the middle or original one were removed, those which remained being respectively *five*, *fifteen*, *fifteen*, *five* revolutions apart. These were changed in May, 1849, to intervals of *five*, *ten*, *ten*, *five* revolutions. In the record of the work in which

they have been employed they are numbered **1**, **2**, **3**, **4**, **5**, in the order of the micrometer-scale, *i. e.*, commencing in the southern part of the field of view. To render available so large an extent of field in declination as is embraced in this system of wires, the eye-piece was also provided with a vertical motion. The adjustment of this diaphragm consists in making *wire* **3** parallel to the *fixed wire*.

The head of the telescope-micrometer is divided into 100 parts, and is usually read to *thousandths* of a revolution. It is adjusted so that when *wire* **3** is moved into coincidence with the *fixed wire*, the micrometer reading shall be nearly $30^{r}.000$, 30^{r}. indicating the notch of the micrometer-scale which is intersected by the *fixed wire*. In making a micrometer reading that notch of the scale is noted which the wire used in the observation has passed.

§ 3.

METHOD OF OBSERVING AND OBSERVERS.

The instrument was clamped at a division of the circle, or midway between two divisions, and the microscopes were read, (on two sets of division when the circle was set between them,) and also the meteorological instruments. These readings were generally repeated several times during the observation of a zone. The transits were observed by the eye and ear method. The bisections for declination were made at one of the transit wires I, II, III, IV, &c., with one of the micrometer wires **1**, **2**, **3**, **4**, **5**. The observations were recorded in blank-books, the form of which is given in the Appendix of the annual volume for 1845, under the heads *O* and *P*. The following notes are taken from one of Professor Coffin's observing-books:

a. "The transit wire on which the micrometer bisection is made is the IV wire if the transits were observed upon it or upon wires both sides of IV; otherwise the wire observed on nearest IV. The exceptions are noted."

b. "The micrometer wire when not noted is wire **3**."

c. "The minute belongs to the first transit wire observed."

The above rules were followed by Professor Coffin in all his observations, and it appears that the other observers followed the same rule with regard to the minute of the transit.

The observers were Professor J. H. C. Coffin, U. S. N., who observed from the beginning until the end of the work in 1849; Lieutenant T. J. Page, U. S. N., who observed from the beginning until January 4, 1848; and Lieutenant Charles Steedman, U. S. N., who observed from December 15, 1847, until June 21, 1849. The initial of the observer is placed at the beginning of the zone together with the date of observation.

The adjustments of the instrument were made by Professor Coffin, who also made the observations for determining the value of a revolution of the telescope micrometer and the corrections of the micrometer wires.

Professor Coffin furnishes the following corrections to be applied to the micrometer readings, derived from the published volumes of the Observatory for the years 1846 to 1850:

1. *Corrections on Account of Eccentricity of the Micrometer-Head.**

Mic. Reading.	Correction.	Mic. Reading.	Correction.	Mic. Reading.	Correction.
.00	$-\ 0^{r}.0000$	.35	$-\ 0^{r}.0029$	.70	$-\ 0^{r}.0001$
.05	05	.40	28	.75	+ 04
.10	10	.45	27	.80	09
.15	15	.50	23	.85	10
.20	20	.55	19	.90	09
.25	24	.60	14	.95	06
.30	— 28	.65	— 08	.00	+ 00

* Washington Astronomical Observations, 1846, Introduction, p. xviii.

2. *Reductions of Wire 𝕭 to Parallelism with the Horizon.*

These are given at transit wire III; the same numerical values answer for V; for II and VI, they are to be multiplied by 2; and for I and VII they are to be multiplied by 3; and the signs changed for V, VI, and VII. The reduction at IV is 0.

Year.	From—	To—	Corr.	Remarks.
1846	April 4	April 23	+ $0^{r}.0004$	
	April 24	May 14	12	
	May 15	June 8	05	
	June 9	June 30	19	
	July 1	July 31	05	
	Aug. 1	Aug. 31	11	
	Sept. 1	Oct. 5	06	
	Oct. 6	Nov. 20	19	Nov. 17. Re-adjustments.
	Nov. 21	Dec. 31	26	
1847	Jan. 5	Feb. 6	32	Feb. 10. Wires disturbed.
	Feb. 12	April 13	50	
	April 14	May 25	65	April 14. Wires disturbed.
	Aug. 5	Sept. 6	37	
	Oct. 15	Dec. 3	48	Dec. 4. New wires put in.
	Dec. 18	Jan. 22	+ $0^{r}.0002$	
1848	Feb. 1	Mar. 24	− $0^{r}.0016$	Feb. 1. New VII and 𝕭.
	Mar. 29	May 22	12	March 26. Wires disturbed, and re-adjusted.
	May 23	Aug. 11	17	
	Aug. 11	Aug. 15	21	
	Aug. 16	Sept. 19	31	Sept. 19 and 26. Diaphragms taken out and replaced.
	Sept. 26	Oct. 5	03	Oct. 5. Re-adjustments.
	Oct. 6	Oct. 11	18	
	Nov. 21	Dec. 31	− $0^{r}.0018$	
1849	Jan. 4	Jan. 27	+ $0^{r}.0008$	
	Feb. 3	Feb. 10	14	
	Mar. 10	Mar. 31	16	
	April 3	April 30	12	
	May 2	May 14	13	
	May 17	May 18	143	May 20. 𝕭 had been disturbed. New set of wires put in.
	June 4	June 22	+ $0^{r}.0014$	June 27. Re-adjustments.
	July 2	July 30	− $0^{r}.0005$	

3. *Reduction of the other Micrometer Wires to Wire 𝕭.*

These reduce the readings for observations with the several wires to what they would have been if wire 𝕭 had been used.

During 1846 and 1847 wire 𝕮 could not be brought into coincidence with the fixed wire, so that the reductions for it have not been determined; and, therefore, except in the earlier zones of those years, that wire has not been used. In a few of the earlier observations of Lieutenant Steedman he has used a wire which he calls 𝕲, of which there is no account. The declinations derived from observations with these two wires are, therefore, imperfectly determined; so also from observations with wire 𝕴, in zones 158–161 and 178–187.

The periods of the following table are those in which there was no known disturbance of the wires, and the several determinations agree satisfactorily with each other.

1846, April 4 to December 31.

	1	2	4
	r.	r.	r.
I.	+.0110	−.0384	+.0106
II.	.0123	.0362	.0152
III.	.0136	.0341	.0198
IV.	.0149	.0319	.0244
V.	.0162	.0297	.0291
VI.	.0174	.0276	.0337
VII.	+.0187	−.0254	+.0384

No. of obs. 4 for each, at I, IV, VII.

1847. Jan. 5. Wires disturbed in removing obstruction to free motion.
Feb. 10. Wires disturbed by small particles attached to them.

1847, February 12 to April 13.

	1	2	4
	r.	r.	r.
I.	+.0054	−.0230	+.0262
II.	.0063	.0192	.0322
III.	.0073	.0153	.0382
IV.	.0082	.0115	.0442
V.	.0091	.0077	.0502
VI.	.0100	.0040	.0563
VII.	+.0109	−.0002	+.0623

No. of obs. 2 for each, at I, IV, VII.

April 14. In removing fibers which connected the wires, the fixed wire was split and IV moved out of place.

1847, April 16 to November 20.

	1	2	4
	r.	r.	r.
I.	+ .0029	− .0234	+ .0236
II.	.0030	.0207	.0294
III.	.0032	.0181	.0343
IV.	.0033	.0154	.0397
V.	.0034	.0127	.0450
VI.	.0036	.0101	.0504
VII.	+ .0037	− .0074	+ .0557

No. of obs. 3 for each, at I, IV, VII.

Dec. 4. New set of wires put in.

1847, December 18 to 1848, January 22.

	1	2	4
I.	+.0034	−.0681	−.0144
II.	−.0029	.0764	.0110
III.	.0092	.0846	.0075
IV.	.0155	.0929	.0040
V.	.0218	.1012	−.0006
VI.	.0281	.1094	+.0029
VII.	−.0345	−.1127	+.0063

No. of obs. 2 for each, at I, IV, VII.

Feb 1. New **3** and VII put in.

1848, March 6 to April 1.

	2	4	5
I.	+.0778	+.1582	+.1113
II.	.0737	.1499	.1088
III.	.0695	.1415	.1062
IV.	.0654	.1332	.1039
V.	.0613	.1249	.1014
VI.	.0571	.1165	.0988
VII.	+.0530	+.1082	+.0963

No. of obs. 1 for each, at I, IV, VII.

April 7. Removed fibers which hooked the wires together.

1848, April 20 to June 30.

	1	2	4	5
I.	+.1057	+.0812	+.1554	+.1092
II.	.0954	.0753	.1477	.1066
III.	.0852	.0695	.1400	.1040
IV.	.0749	.0636	.1323	.1014
V.	.0646	.0577	.1246	.0988
VI.	.0544	.0519	.1169	.0962
VII.	+.0441	+.0460	+.1092	+.0936

For **1**, 2 at I, IV, VII.
2, 4 at I, VII; 6 at IV.
4, 7 at I, VII; 8 at IV.
5, 2 at I, VII; 3 at IV.

July 5. Again removed fibers.

1848, July 10 to September 18.

	2	4	5
I.	+.1064	+.1635	+.1356
II.	.0999	.1577	.1339
III.	.0933	.1518	.1322
IV.	.0867	.1460	.1305
V.	.0802	.1402	.1288
VI.	.0736	.1343	.1271
VII.	+.0670	+.1285	+.1254

No. of obs. 2 for each, at I, VII.
3 for **2** and **4**, at IV.
2 for **5**, at IV.

Aug. 10. VII broken and removed.
Aug. 18. I broken and removed.
Sept. 19. Diaphragm taken out and restored.

1848, October 7 to 1849, May 18.

	2	4	5
I.	+.1025	+.1608	+.1348
II.	.0972	.1549	.1310
III.	.0920	.1489	.1271
IV.	.0868	.1430	.1203
V.	.0815	.1371	.1195
VI.	.0763	.1311	.1157
VII.	+.0710	+.1252	+.1119

For **2**, 3 at I, VII; 5 at IV.
4 and **5**, 4 at I, VII; 6 at IV.

May 18. **3** was found disturbed.

1849, June 1 to July 30.

	1	2	4	5
I.				
II.	+.0017	−.0000	−.0105	−.0177
III.	+.0003	.0011	.0130	.0182
IV.	−.0012	.0023	.0155	.0187
V.	.0027	.0035	.0180	.0192
VI.	−.0042	+.0047	−.0205	−.0197
VII.				

No. of obs. 4 for each, at IV.
1 for each, at 20′, or 5 intervals for each side of IV.

4. *Reduction to the Meridian;*

Or $\Delta m = -0^r.00206 \tan \delta \, (\mathrm{IV} - v)^2$, in which v is the number of the transit wire at which the bisection of the star was made.

Dec.	I and VII.	II and VI.	III and V.
°	r.	r.	r.
− 20	+ .0068	+ .0030	+ .0007
22	075	33	08
24	083	37	09
26	091	40	10
28	099	44	11
30	107	48	12
32	116	52	13
34	125	56	14
36	135	60	15
38	145	64	16
40	+ 156	+ 69	+ 17

These several reductions, except the first, can readily be combined for any zone for each micrometer and transit wire.

The equatorial intervals of the transit wires from their mean were derived by Professor Coffin from the zone observations in 1846 and 1847 for each 5^r of the field as indicated by the micrometer reading, and the transits in those years reduced by him to the "mean of wires;" but the papers containing tables of these intervals, as well as Dr. Gould's tables for the subsequent years, cannot now be found.

The periods during which the intervals may be regarded as constant are sufficiently indicated by the notes of changes and disturbances of the wires on page VIII.

Dr. Gould's determinations of the reduction of the "mean of wires" to the meridian for the several zones have also been mislaid, so that they appear in the zones only in combination with other reductions.

The observations with the Mural Circle were differential in right ascension; and these reductions could be obtained only by means of right ascensions of stars of comparison, supplied either by observations with the other instruments or by the catalogues of stars. The earlier zones observed with the Mural Circle and Transit Instrument in 1846 unfortunately overlapped on one side only, owing to some misunderstanding as to the declinations at which each instrument should be set; so that the other side of each is almost entirely deficient in common stars. This deficiency has, however, been supplied by observations made subsequently by Professor Yarnall.

§ 4.

In the following tables are collected the clock corrections, with the hourly rates; the observed coincidence of wire **3** with the fixed wire, the adopted values of a revolution of the micrometer-screw, and the readings of the circle for the zenith point. These quantities have been taken from the volumes of the Observatory for the years 1846, 1847, 1848, and 1849.

The clock corrections are copied from the observations with the Meridian Circle. In the copy of the earlier zones prepared for Dr. Gould the quantities m, n, and c, as well as the clock corrections, were taken from the Meridian Circle observations, and were printed before the error was noticed. They do not belong to the Mural Circle zones.

The coincidence of wire **3** with the fixed wire was determined on almost every day of observation from six or eight contacts (alternately on each side) at the vertical wire IV. Interpolated values are inclosed in brackets.

The value of one revolution of the screw of the telescope micrometer was determined by means of the collimating eye-piece and a basin of mercury. The observations will be found given in detail in the Introductions of the several volumes. The values there given are for the middle of the field. Professor Coffin assumed as the value for the part of the field indicated by the micrometer-reading m,

$$R = R_0 + 2\,(m - 30)\,\Delta R$$

and found the following values of ΔR;

In 1846 and 1847,	from 12 determinations,	$\Delta R = + 0^r.0020$
In 1848, before September,	" 2 "	$+ 0^r.0025$
In 1848,	" 2 "	$- 0^r.0022$
In 1849,	" 4 "	$+ 0^r.0010$

Its value would probably be affected whenever the telescope was unclamped from the rim of the circle and moved. This was done January 2 and September 19, 1848, and January 1, 1849.

The determination of the nadir point was made by means of the collimating eye-piece. The telescope being directed downward, the circle was moved by one of the tangent-screws until the fixed wire, illuminated by means of this eye-piece, coincided with its image reflected from a surface of mercury; then the circle reading corrected for runs and errors of division constitutes the nadir point. Each determination consists of several such coincidences and circle readings, the wire and its image being brought into coincidence from opposite sides.

Corrections of Clock.

Date.	Corr.	Hourly rate.	Date.	Corr.	Hourly rate.	Date.	Corr.	Hourly rate.
1846. h.	s.	s.	1846. h.	s.	s.	1847. h.	s.	s.
April 6, 12	+ 63.261	*l.* 0.014	Aug. 12, 20	+ 10.387	*g.* 0.009	Mar. 5, 5	− 50.77	*g.* 0.004
9, 10	65.036	*l.* 0.025	13, 20	10.132	*g.* 0.012	10, 6	+ 10.02	*g.* 0.020
13, 12	67.851	*l.* 0.032	18, 20	7.943	*g.* 0.017	18, 6	5.83	*g.* 0.012
14, 12	8.139	*l.* 0.001	29, 21	7.935	*l.* 0.010	22, 8	4.02	*g.* 0.015
15, 12	8.214	*l.* 0.004	31, 21	7.367	*l.* 0.006	24, 6	+ 4.51	*g.* 0.018
16, 12	8.190	*l.* 0.006	Sept. 9, 22	4.777	*g.* 0.021	April 3, 7	− 1.77	*g.* 0.010
17, 12	8.564	*l.* 0.008	13, 22	3.439	*g.* 0.020	7, 15	4.10	*g.* 0.028
18, 12	9.100	*l.* 0.009	14, 22	3.248	*g.* 0.024	9, 6	5.05	*g.* 0.024
20, 12	9.353	*l.* 0.008	15, 22	2.484	*g.* 0.021	13, 6	8.17	*g.* 0.026
27, 12	11.051	*l.* 0.028	16, 22	1.622	*g.* 0.027	15, 20	9.45	*g.* 0.028
May 4, 12	16.495	*l.* 0.028	19, 18	+ 0.030	*g.* 0.019	20, 14	11.86	*g.* 0.020
19, 12	29.708	*l.* 0.026	21, 18	− 0.419	*g.* 0.020	May 4, 17	18.40	*g.* 0.020
20, 16	29.991	*l.* 0.018	23, 18	1,513	*g.* 0.011	6, 8	19.27	*g.* 0.022
21, 16	30.231	*l.* 0.021	24, 20	1.620	*g.* 0.015	17, 14	19.26	*g.* 0.026
25, 16	33.686	*l.* 0.044	29, 22	4.226	*g.* 0.018	29, 14	22.26	*g.* 0.008
27, 16	35.269	*l.* 0.038	Oct. 7, 21	4.757	*l.* 0.013	June 11, 20	24.87	*g.* 0.020
June 3, 16	42.761	*l.* 0.008	8, 21	4.427	*l.* 0.010	15, 14	26.91	*g.* 0.028
4, 16	43.204	*l.* 0.010	9, 21	4.288	*g* 0.004	17, 14	28.19	*g.* 0.020
6, 16	43.146	*l.* 0.013	11, 21	4.896	*g.* 0.008	24, 12	28.71	*l.* 0.005
15, 16	47.338	*l.* 0.020	16, 22	5.709	*g.* 0.010	July 16, 19	33.92	*g.* 0.020
16, 16	48.384	*l.* 0.021	19, 22	6.303	*g.* 0.018	18, 1	34.81	*g.* 0.021
17, 16	48.420	*l.* 0.025	26, 22	. .	*g.* 0.012	Aug. 2, 18	41.71	*g.* 0.006
18, 16	49.390	*l.* 0.020	28, 22	10.649	*g.* 0.012	5, 18	43.31	*g.* 0.015
22, 16	50.529	*l.* 0.004	Nov. 16, 0	7.609	*g.* 0.032	20, 19	50.03	*g.* 0.040
24, 13	50.453	*l.* 0.002	21, 0	11.589	*g.* 0.032	26, 16	55.22	*g.* 0.035
July 1, 13	55.312	*l.* 0.034	Dec. 4, 0	22.074	*g.* 0.024	30, 23	− 58.07	*g.* 0.024
7, 12	59.985	*g.* 0.022	26, 0	− 35.364	*g.* 0.023	Sept. 6, 19	+ 19.61	*g.* 0.040
9, 12	59.630	*g.* 0.004				14, 17	13.11	*g.* 0.046
10, 17	59.557	*g.* 0.000	1847.			16, 18	10.63	*g.* 0.035
11, 17	59.647	*g.* 0.005	Jan. 6, 5	− 40.73	*g.* 0.027	21, 19	8.34	*g.* 0.028
14, 17	58.886	*g.* 0.011	22, 2	45.92	*g.* 0.007	27, 20	4.71	*g.* 0.036
15, 17	58.483	*g.* 0.010	Feb. 1, 10	46.65	0.000	29, 19	+ 2.96	*g.* 0.048
24, 17	8.856	*l.* 0.003	5, 4	46.00	*g.* 0.009	Oct. 15, 19	− 12.41	*g.* 0.055
29, 17	9.228	*l.* 0.009	6, 2	45.86	*g.* 0.011	16, 19	13.61	*g.* 0.050
Aug. 5, 17	9.142	*l.* 0.005	12, 4	48.27	*g.* 0.014	18, 19	15.40	*g.* 0.020
11, 18	+ 10.685	*g.* 0.003	23, 5	− 49.12	*g.* 0.010	26, 20	− 21.64	*g.* 0.045

Corrections of Clock—Continued.

Date.		Corr.	Hourly rate.	Date.		Corr.	Hourly rate.	Date.		Corr.	Hourly rate.
1847.	h.	s.	s.	1848.	h.	s.	s.	1849.	h.	s.	s.
Oct. 27,	22	− 22.43	*g.* 0.040	July 24,	19	+ 24.440	*l.* 0.008	Feb. 16,	6	− 31.467	*l.* 0.009
28,		. .	*g.* 0.040	Aug. 1,	20	24.483	*g.* 0.008	19,	5	33.867	*g.* 0.015
Nov. 2,	20	24.49	*g.* 0.024	4,	19	22.739	*g.* 0.002	23,	5	33.163	*l.* 0.008
16,	1	36.47	*g.* 0.060	7,	7	22.907	*g.* 0.030	Mar. 7,	9	23.356	*g.* 0.007
27,	19	44.80	*g.* 0.040	14,	19	23.845	*l.* 0.013	19,	6	28.232	*g.* 0.025
Dec. 18,		− 57.35	*g.* 0.044	16,	16	24.640	*g.* 0.000	22,	11	29.583	*g.* 0.018
1848.				18,	0	23.806	*g.* 0.023	30,	8	33.717	*g.* 0.020
Jan. 4,	4	− 71.313	*g.* 0.044	24,	20	19.786	*g.* 0.018	April 2,	8	36.210	*g.* 0.040
18,	9	80.672	*g.* 0.023	29,	21	19.686	*l.* 0.002	5,	12	39.125	*g.* 0.038
20,	3	2.240	*l.* 0.005	30,	19	18.913	*g.* 0.015	10,	10	32.583	*l.* 0.011
22,	3	3.378	*g.* 0.029	31,	20	18.965	*g.* 0.021	11,	8	32.288	*l.* 0.009
Mar. 7,	7	37.892	*g.* 0.031	Sept. 2,	21	17.264	*g.* 0.033	14,	10	32.413	0.000
24,	8	21.290		7,	20	14.145	*g.* 0.028	16,	8	32.296	*l.* 0.004
29,	8	24.040	*g.* 0.024	18,	23	8.540	*g.* 0.019	19,	10	31.753	*l.* 0.012
April 1,	7	− 25.456	*g.* 0.033	Oct. 7,	19	4.589	*g.* 0.039	21,	5	30.873	*l.* 0.010
20,	8	+ 8.420	*l.* 0.007	11,	21	+ 2.020	*g.* 0.028	May 2,	8	20.920	*l.* 0.003
May 27,	18	18.682	*l.* 0.008	Nov. 28,	3	− 12.987	*g.* 0.014	11,	2	− 17.949	*l.* 0.016
30,	15	18.381	*g.* 0.005	Dec. 2,	1	14.545	*g.* 0.014	June 14,	4	+ 3.404	*l.* 0.022
June 12,	15	17.300	*g.* 0.018	4,	17	15.151	*g.* 0.018	17,	5	5.244	*l.* 0.021
16,	19	16.091	*l.* 0.008	18,	19	15.900	*i.* 0.009	18,	15	5.256	*l.* 0.004
23,	17	19.493	*l.* 0.002	30,	5	− 19.084	*g.* 0.011	21,	4	6.339	*l.* 0.015
26,	19	18.866	*g.* 0.009	1849.				22,	13	6.705	*l.* 0.015
July 10,	16	21.152	*l.* 0.047	Jan, 23,	4	− 23.645	*g.* 0.018	July 2,	16	9.760	*l.* 0.016
11,	17	23.470	*l.* 0.047	27,	1	25.090	*g.* 0.027	11,	7	16.736	*l.* 0.016
17,	21	23.326	*g.* 0.018	Feb. 9,	7	30.932	*g.* 0.018	17,	16	+ 17.436	*l.* 0.009
19,	15	23.152	0.000	10,	6	31.371	*g.* 0.017				
20,	16	+ 23.719	*l.* 0.008	15,	12	− 31.722	*l.* 0.008				

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point.

Date.	Coincidence.	R_0	Zenith Point.	Zone.
1846.	r.	″	° ′ ″	
April 6	30.003	62.74	359 59 59.55	1
9	29.998	62.74	60.37	2
13	30.007	62.74	59.77	3
14	30.006	62.74	60.73	4
15	30.007	62.74	60.34	5
16	30.005	62.74	60.62	6
16	30.005	62.74	60.48	7
17	30.008	62.74	60.90	8
18	30.006	62.74	61.88	9
20	30.005	62.74	62.10	10
27	30.006	62.75	62.00	11
May 4	30.002	62.75	62.35	12
19	30.006	62.75	62.59	13
20	30.001	62.75	62.48	14
21	30.000	62.75	62.18	15
25	29.909	62.75	62.25	16
27	30.005	62.75	62.73	17
27	30.005	62.75	62.73	18
June 3	30.002	62.75	62.46	19
4	29.097	62.75	62.90	20
6	30.009	62.75	62.46	21
15	30.005	62.75	62.12	22
16	30.006	62.75	63.00	23
17	30.005	62.75	62.45	24
18	30.006	62.75	62.60	25
22	30.004	62.76	62.43	26
24	30.008	62.76	359 59 62.40	27
July 1	30.001	62.76	0 0 2.44	28
7	30.004	62.76	2.57	29
7	30.004	62.76	2.57	30
9	30.003	62.76	3.41	31
10	30.002	62.76	2.73	32
10	30.002	62.76	2.73	33
11	30.002	62.76	2.52	34
14	30.005	62.76	2.89	35
14	30.005	62.76	2.89	36
15	30.006	62.76	2.60	37
24	30.005	62.76	2.16	38
29	30.006	62.76	2.50	39
29	30.006	62.76	2.50	40
Aug. 5	30.002	62.76	2.50	41
11	30.006	62.76	2.20	42
11	30.006	62.76	2.20	43
12	30.002	62.76	2.40	44
13	30.002	62.76	2.17	45
13	30.002	62.76	2.17	46
18	30.016	62.76	0 0 2.09	47

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point—Continued.

Date.	Coincidence.	R_0	Zenith Point.	Zone.
1846.	r.	"	° ′ "	
Aug. 20	30.005	62.76	0 0 2.54	48
29	30.010	62.76	1.84	49
31	30.007	62.76	1.81	50
Sept. 9	30.011	62.75	1.59	51
9	30.011	62.75	1.59	52
13	30.004	62.75	1.40	53
14	30.008	62.75	1.30	54
14	30.008	62.75	1.30	55
15	29.996	62.75	1.79	56
16	30.006	62.75	0.54	57
19	30.006	62.75	0.95	58
19	30.006	62.75	0.95	59
21	30.000	62.75	1.40	60
23	30.008	62.75	0.20	61
24	30.007	62.75	1.40	62
24	30.007	62.75	1.40	63
28	30.006	62.75	0.70	64
28	30.006	62.75	0.70	65
30	30.004	62.75	0 0 1.21	66
Oct. 6	30.005	62.75	359 59 55.62	67
7	30.006	62.75	55.62	68
8	30.004	62.75	55.73	69
9	30.005	62.75	55.67	70
10	30.005	62.75	55.76	71
16	30.006	62.75	55.85	72
16	30.006	62.75	55.85	73
17	30.005	62.75	55.85	74
19	30.009	62.75	56.28	75
26	30.010	62.75	53.71	76
28	30.011	62.75	54.27	77
28	30.011	62.75	54.27	78
Nov. 16	30.010	62.75	359 59 55.91	79
20	29.990	62.75	0 0 4.55	80
20	29.990	62.75	4.55	81
21	29.989	62.75	4.56	82
Dec. 3	29.993	62.75	3.27	83
4	29.982	62.75	2.77	84
23	29.993	62.75	1.74	85
1847.				
Jan. 6	(29.996)	62.75	2.79	86
22	30.0015	62.75	2.26	87
27	30.0025	62.75	1.92	88
Feb. 1	29.9983	62.75	1.29	89
5	30.0104	62.75	1.02	90
6	30.0075	62.75	0.93	91
12	30.0106	62.75	1.01	92
12	30.0106	62.75	1.01	93
14	30.0162	62.75	0 0 1.16	94

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point—Continued.

Date.	Coincidence.	R_0	Zenith Point.	Zone.
1847.	r.	′	° ′ ″	
Feb. 23	30.0162	62.75	0 0 1.17	95
23	30.0162	62.75	1.17	96
23	30.0162	62.75	0 0 1.17	97
Mar. 5	30.0155	62.75	359 59 59.74	98
5	30.0155	62.75	359 59 59.74	99
10	30.0146	62.75	0 0 0.67	100
18	(30.015)	62.75	0 0 0.06	101
22	30.0137	62.75	359 59 59.58	102
24	30.0122	62.75	0 0 0.44	103
April 3	30.0103	62.75	359 59 59.75	104
7	30.0112	62.75	59.38	105
7	30.0112	62.75	59.38	106
9	30.0125	62.75	59.62	107
9	30.0125	62.75	59.62	108
13	30.0156	62.75	60.26	109
16	30.0275	62.75	59.97	110
21	30.0247	62.75	62.28	111
May 4	(30.026)	62.75	61.58	112
6	30.0260	62.75	61.00	113
6	30.0260	62.75	60.81	114
17	(30.025)	62.75	61.89	115
29	30.0236	62.75	62.77	116
June 11	30.0250	62.75	62.11	117
14	30.0253	62.75	62.76	118
14	30.0253	62.75	62.76	119
17	30.0274	62.75	62.36	120
17	30.0274	62.75	62.36	121
24	(30.020)	62.75	63.08	122
July 17	(30.022)	62.75	62.63	123
19	30.0218	62.75	62.30	124
Aug. 2	30.0495	62.75	64.12	125
5	30.0462	62.75	63.60	126
20	30.0480	62.75	64.82	127
26	30.0510	62.75	63.52	128
30	30.0500	62.75	64.24	129
Sept. 6	30.0474	62.75	65.70	130
14	30.0518	62.75	64.48	131
16	30.0500	62.75	63.98	132
16	30.0500	62.75	63.98	133
21	30.0505	62.75	65.06	134
27	30.0085	62.75	62.04	135
27	30.0085	62.75	62.04	136
29	30.0123	62.75	62.26	137
Oct. 15	30.0177	62.75	60.89	138
16	30.0140	62.75	60.59	139
18	30.0471	62.75	62.45	140
18	30.0471	62.75	62.45	141
26	(30.045)	62.75	359 59 63.14	142

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point—Continued.

Date.		Coincidence.	R_o	Zenith Point.	Zone.
1847.		r.	"	° ′ ″	
Oct.	27	30.0475	62.75	359 59 63.39	143
	28	30.0455	62.75	62.42	144
	28	30.0455	62.75	62.42	145
Nov.	2	30.0438	62.75	62.22	146
	15	30.0534	62.75	61.76	147
	20	30.0391	62.75	62.38	148
Dec.	18	29.9900	62.80	359 59 60.31	149
1848.					
Jan.	3	29.9876	62.76	9 59 59.74	150
	4	29.9930	62.76	58.30	151
	4	29.9930	62.76	58.30	152
	18	29.9820	62.76	57.07	153
	18	29.9820	62.76	57.07	154
	19	29.9858	62.76	56.59	155
	20	(29.985)	62.76	57.11	156
	22	(29.986)	62.76	56.13	157
Mar.	6	29.9876	62.824	61.73	158
	7	(29.984)	62.824	60.99	159
	24	29.9819	62.824	54.27	160
	29	30.0035	62.824	55.39	161
April	1	30.0060	62.824	56.92	162
	20	30.0131	62.824	57.28	163
May	3	30.0089	62.824	56.82	164
	27	29.9238	62.824	61.48	165
	30	(29.925)	62.824	61.08	166
June	2	29.9255	62.824	61.01	167
	3	29.9968	62.824	61.47	168
	5	29.9986	62.824	61.34	169
	6	(29.999)	62.824	61.21	170
	12	(30.002)	62.824	64.08	171
	15	29.9945	62.824	61.83	172
	16	(29.997)	62.824	60.65	173
	20	30.0010	62.824	64 93	174
	24	30.0043	62.824	64.58	175
	26	(29.999)	62.824	62.20	176
	27	30.0004	62.824	64.19	177
July	10	30.0001	62.824	62.40	178
	11	30.0021	62.824	63.49	179
	17	(30.003)	62.824	63.77	180
	18	30.0029	62.824	63.99	181–180
	19	30.0014	62.824	62.21	181
	20	30.0010	62.824	63.32	182
	20	30.0010	62.824	63.32	183
	24	(30.001)	62.824	62.89	184
Aug.	1	30.0038	62.824	64.10	185
	4	(30.001)	62.824	63.36	186
	7	(30.002)	62.824	62.78	187
	14	(30.000)	62.824	9 59 73.01	188

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point—Continued.

Date.		Coincidence.	R_0	Zenith Point.	Zone.
1848.		r.	″	° ′ ″	
Aug.	15	30.1597	62.824	9 59 73.83	189
	16	30.0100	62.824	60.10	190
	16	30.0100	62.824	60.10	191
	18	(30.006)	62.824	61.75	192
	24	30.0070	62.824	62.66	193
	29	30.0118	62.824	61.99	194
	30	30.0139	62.824	60.73	195
	30	30.0139	62.824	60 73	196
	30	30.0139	62.824	60.73	197
	31	30.0094	62.824	61.86	198
	31	30.0094	62.824	61.86	199
Sept.	1	30.0101	62.824	60.81	200
	1	30.0101	62.824	60.81	201
	2	30.0105	62.824	62.47	202
	7	30.0134	62.824	63.37	203
	18	30.0150	62.824	62.48	204
Oct.	7	30.0067	62.824	63.45	205
	10	30.0051	62.824	61.99	206
	11	30.0139	62.824	62.86	207
	14	(30.014)	62.824	61.28	208
Nov.	28	30.0131	62.820	57.23	209
	28	30.0131	62.820	57.23	210
Dec.	2	30.0086	62.820	55.94	211
	4	30.0057	62.820	55.26	212
	18	30.0057	62.820	56.82	213
	30	30.0095	62.820	9 59 54.68	214
1849.					
Jan.	23	*30.7957	62.819	20 0 0.00	215
	23	30.7957	62.819	0.00	216
	23	30.7957	62.819	0.00	217
	27	30.7779	62.819	0.00	218
	27	30.7779	62.819	0.00	219
Feb	9	(30.7900)	62.819	0.00	220
	9	(30.7900)	62.819	0.00	221
	10	30.7896	62.819	0.00	222
	13	(30.8055)	62.819	0.00	223
	13	(30.8055)	62.819	0.00	224
	15	(30.8210)	62.819	0.00	225
	16	30.8215	62.819	0.00	226
	16	30.8215	62.819	0.00	227
	16	30.8215	62.819	0.00	228
	19	30.8240	62.819	0.00	229
	19	30.8240	62.819	0.00	230
	23	30.8259	62.819	0.00	231
Mar.	7	(30.8202)	62.811	0.00	232
	12	(30.8174)	62.811	20 0 0.00	233

* In 1849 nadir point was observed by moving micrometer wire 3 to coincidence with its image. The micrometer reading was then reduced to correspond with circle reading 200° 0′ 00″.

Coincidence of Wires, Value of Micrometer-Screw, and Observed Values of Zenith Point—Continued.

Date.	Coincidence.	R_0	Zenith Point.	Zone.
1849.	r.	″	° ′ ″	
Mar. 16	(30.8149)	62.811	20 0 0.00	234
16	(30.8149)	62.811	0.00	235
19	30.8083	62.811	0.00	236
22	(30.8063)	62.811	0.00	237
22	(30.8063)	62.811	0.00	238
23	30.8056	62.811	0.00	239
23	30.8056	62.811	0.00	240
29	30.8223	62.811	0.00	241
30	(30.8249)	62.811	0.00	242
April 2	(30.8232)	62.811	0.00	243
5	30.8165	62.811	0.00	244
5	30.8165	62.811	0.00	245
10	(30.8095)	62.811	0.00	246
11	30.8123	62.811	0.00	247
12	36.6523	62.811	0.00	248
14	. . .	62.811	0.00	249
16	. . .	62.811	0.00	250
20	30.8078	62.811	0.00	251
May 2	30.7736	62.811	0.00	252
11	30.7445	62.811	0.00	253
June 16	30.6722	62.849	0.00	254
18	30.6655	62.849	0.00	255
19	30.6633	62.849	0.00	256
20	30.6632	62.849	0.00	257
21	30.6563	62.849	0.00	258
22	30.6645	62.849	0.00	259
22	30.6645	62.849	0.00	260
July 2	30.6073	62.845	0.00	261
3	30.5669	62.845	0.00	262
5	30.5774	62.845	0.00	263
5	30.5774	62.845	0.00	264
11	(30.5719)	62.845	0.00	265
17	(30.5566)	62.845	0.00	266
17	(30.5566)	62.845	20 0 0.00	267

§ 5.

METHOD OF REDUCTION.

The magnitudes of the stars, the seconds of the observed times of transit in the columns I, II, III, &c., the micrometer readings, the micrometer wires used, and the transit wires at which the bisections were made, have been taken from the observing-books, and the proofs compared directly with them and corrected to agree with the records of the observers. The minutes of the transits have been changed, when necessary, so as to adapt them to the "mean of wires."

The method of reduction, as arranged by Professors Coffin and Hubbard, is nearly the same as that described by Mr. Ferguson in his Introduction to the Meridian Circle Zones of 1846, published in 1860. The differences arise from the different construction of the two instruments.

1. The times of transit of a star were first reduced to the mean of wires, using for each wire the reduction for the zone in the part of the field indicated by the micrometer reading;

T, representing the clock times of transit of the mean of wires;

k, the clock correction at that time;

I, the reduction of the mean of wires to the meridian for the middle of the field, or at 30^r of the micrometer;

M, the reduction to 1850.0 for the right ascension and declination of the middle of the field;

ΔI and ΔM, the variations of I and M for the distance of the star in declination from the middle of the field, or, $-(m - 30^r)$ in terms of the micrometer, m being the micrometer reading;

and putting

$$a_1 = k + M, \qquad a_2 = I + \Delta I + \Delta M$$

the right ascension of the star is

$$a = T + a_1 + a_2$$

The preliminary work consisted in the preparation of tables for each zone containing a_1 for each 10^m of clock-time, and a_2 for each 5 or 10 revolutions of the micrometer, and at such intervals of time as was requisite. The columns a_1 and a_2 were then readily filled by an easy interpolation.

The column a_2, which is printed, includes corrections for erroneous values of k used in the earlier zones in forming the tables of a_1; and in some zones a constant appears to have been added to one and subtracted from the other so that the signs should be uniform.

2. C, representing the first circle reading for a zone;

Z, the zenith point;

r, the refraction for the zenith distance $(C - Z)$ and the first readings of the barometer and thermometer;

M, the reduction to 1850.0 for the declination of the middle of the zone, or 30^r, and the right ascension of its commencement, or an exact 10^m preceding;

m_0 the micrometer reading for coincidence of **3** with the fixed wire; or, in 1849, the reading of **3** to correspond with $Z = 20° \; 0' \; 0''$:

the constant of declination for the zone is

$$D_0 = 38° \; 53' \; 39''.25 - (C - Z) - 62''.75 \, (m_0 - 30^r) - r + M + 30' + n' + n''$$

$30'$ and the arbitrary constants n' and n'' being added so that all the reductions shall have the same sign as D_0. Omitting these, D_0 is the mean declination of wire **3** at the commencement of the zone and for the micrometer reading $30^r.000$. n' and n'' were omitted from the copy prepared for the printing, and the papers containing them are missing.

The micrometer reading for each star was corrected for eccentricity of the micrometer-head, and reduced from the recorded micrometer and transit wires to wire **3** at transit wire IV, and to the meridian by means of the tables, pages IX and X.

m, representing this corrected reading;

$$i = -\left[62''.75 \, (m - 30^r) + 0''.0025 \, (m - 30^r)^2 + 30'\right]$$

A table for each $0^r.01$ of m facilitated the preparation of this column.

ΔC, representing the change in the circle reading C;

Δr, the change of refraction for changes of the barometer and thermometer;

ΔM, the change of M for difference of right ascension;

$\Delta_1 r$, the difference of refraction; and

$\Delta_1 M$, the difference of M, for the distance of the star in declination from the middle of the field, or $-(m - 30^r)$:

$$d_1 = -[\Delta C + \Delta r - \Delta M + n']$$

$$d_2 = -[(R_0 - 62''.75)(m - 30^r) + (\Delta R - 0''.0025)(m - 30^r)^2 + \Delta_1 r - \Delta_1 M + n']$$

ΔR and R_0 are given on pages XI and XIII–XVIII.

The declination of the star is

$$\delta = D_0 + i + d_1 + d_2$$

The preliminary work for each zone consisted in computing D_0 and preparing tables of d_1 for each 10^m of clock-time, and of d_2 for each 5^r or 10^r of m, and at such intervals of time as was requisite. These columns were then readily filled by interpolation.

The columns i and of right ascension and declination include also corrections for errors of exact revolutions of the micrometer, and of minutes or exact seconds in the times of transit, which Dr. Gould, in the thorough scrutiny which he made, detected by comparison with other zones or catalogues. Such cases are noted in the margin. Some of the few errors of the copyist were detected by him in the same way and corrected.

Notes by the observers of doubtful observations are indicated in the text by a ?; but the degree of doubt, as 1^s or 10^s in a transit, or of 1^r of the micrometer, are omitted; so also are notes of other stars seen whose positions were only estimated. The numbers of stars identified in the British Association Catalogue, and in Oeltzen's Catalogue of Argelander's southern zones, which were added by Dr. Gould, are also omitted, as it was inconvenient to print them; and, moreover, these catalogues and the zones being referred to the same epoch, the stars which are common to them may be recognized with little trouble.

The quantities of reduction and the deduced positions of the stars have been printed as in the completed copy returned by Dr. Gould.

It having been decided to publish the Zones observed with the Mural Circle and Transit Instrument, the supervision of the work was put into my hands by Admiral Sands, Superintendent of the Naval Observatory, in April, 1871. It has been my endeavor to give, in the first place, an exact copy of the observations. For this purpose the proofs were compared, as has been already mentioned, with the hand-books of the observers. The results deduced by Dr. Gould, and his notes to the observations, have been printed without any change. A few cases occur where the results will be changed on account of changes in the copy, but in nearly every case the correction will be indicated by a comparison of the notes and the observations. It was also the intention to print the tables of reduction which had been prepared for each zone, but, unfortunately, up to the present time, these tables cannot be found; should they be found hereafter they will be published either with the Transit Zones or in a separate Appendix.

In reading the proofs I have been assisted from page 1 to 57 by Mr. O. Stone, from page 57 to 73 by Mr. Harrison, and from page 96 to the end by Mr. A. N. Skinner.

I am much indebted to Professor J. H. C. Coffin, Superintendent of the Nautical Almanac, for information concerning the Zones, and for assistance in preparing the Introduction.

A. HALL,

Professor of Mathematics, United States Navy.

FEBRUARY 10, 1872.

INDEX OF ZONES.

In the following Index, D denotes the declination of the middle of the zone, and the following columns give the extent in right ascension, and the number of the zone, the page on which it will be found, and the number of stars it contains.

The whole number of observations of stars in these zones is 14,804; of which—

Professor Coffin made 6,796
Lieutenant Page made 4,721
Lieutenant Steedman made 3,287

D = −40° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
16 9 to 18 10	34	39	41
21 29 to 22 2	72	77	10
21 9 to 23 28	74	78	33
9 36 to 13 31	247	299	123

D = −39° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
14 3 to 16 3	1	3	25
8 44 to 11 19	2	3	35
10 7 to 12 3	3	4	49
9 22 to 10 32	4	5	19

D = −38° 50′.

Right Ascension.	Zone.	Page.	No. Stars.
9 11 to 11 2	5	6	25
13 30 to 17 39	15	17	70
20 25 to 0 6	57	63	50
19 19 to 20 25	62	69	13

D = −38° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
12 45 to 14 22	245	297	51

D = −37° 35′.

Right Ascension.	Zone.	Page.	No. Stars.
9 55 to 11 50	6	6	41
14 11 to 15 23	7	7	24
13 34 to 15 27	17	20	42
19 25 to 19 34	18	21	3
14 57 to 18 8	24	27	67
19 41 to 21 6	60	66	52
22 5 to 0 11	69	75	19
7 32 to 10 6	234	278	97
18 3 to 19 42	48	55	42

D = −37° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
11 39 to 14 46	242	290	114

D = −36° 20′.

Right Ascension.	Zone.	Page.	No. Stars.
9 4 to 12 6	8	8	42
13 9 to 18 19	16	18	80
18 17 to 21 3	49	56	57
20 57 to 23 2	55	60	40
23 2 to 0 30	71	76	29
0 44 to 1 44	80	83	6

D = −35° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
17 30 to 17 44	35	40	11
8 10 to 10 58	237	282	111

D = −35° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
9 28 to 11 30	9	9	48
13 36 to 16 59	14	15	82
17 4 to 18 53	33	38	62
19 25 to 23 57	53	58	57
18 19 to 20 15	54	59	26
0 1 to 1 51	83	84	27
7 47 to 9 53	232	275	95
11 18 to 12 40	235	280	40
9 59 to 13 19	243	292	125

D = −34° 30′.

Right Ascension.	Zone.	Page.	No. Stars.
12 24 to 14 17	238	284	62

D = −34° 10′.

Right Ascension.	Zone.	Page.	No. Stars.
15 0 to 18 8	22	24	114

D = −33° 50′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
9 39 to 12 44	10	10	114
14 32 to 15 13	20	23	13
17 5 to 17 34	26	31	13
17 59 to 20 31	36	41	75
20 29 to 0 1	59	65	47
0 0 to 0 13	82	83	7
23 49 to 0 23	84	84	15
0 3 to 2 7	85	85	30

D = −33° 15′.

Right Ascension.	Zone.	Page.	No. Stars.
9 32 to 11 12	239	285	66
12 39 to 14 47	240	287	75

D = −32° 35′.

Right Ascension.	Zone.	Page.	No. Stars.
9 51 to 11 59	11	12	41
13 30 to 14 16	21	24	18
14 15 to 15 27	23	27	18
15 26 to 21 1	25	28	110
19 26 to 20 11	51	57	14
20 55 to 22 6	52	58	25
22 41 to 23 30	67	74	12
22 3 to 23 8	68	74	25
23 11 to 23 34	73	77	11
22 59 to 0 16	77	80	32
1 49 to 4 2	78	81	38
7 50 to 10 3	223	262	113
11 43 to 13 41	224	264	81

D = −31° 20′.

Right Ascension.	Zone.	Page.	No. Stars.
10 43 to 12 45	12	13	57
12 52 to 17 23	19	21	118
21 30 to 23 6	38	44	24
18 0 to 18 43	39	45	30
19 46 to 20 47	40	46	31
17 22 to 21 39	44	49	89
23 0 to 0 29	75	78	27
2 3 to 3 28	81	83	23
3 54 to 4 31	87	87	14
3 29 to 5 36	89	89	44
8 36 to 11 3	107	113	100
12 22 to 14 8	108	115	63
5 22 to 9 2	225	266	88
6 12 to 7 21	227	268	42
7 27 to 8 40	230	271	65
6 0 to 8 27	231	273	101
17 9 to 17 30	266	330	21

D = −30° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
2 3 to 5 6	86	86	62
5 30 to 7 2	95	98	50
7 55 to 9 7	96	99	51
10 20 to 11 22	97	101	39
6 58 to 7 10	100	104	9
7 11 to 9 7	101	104	23
15 3 to 19 1	120	133	143
19 47 to 21 1	121	136	21
22 1 to 0 31	139	160	100
11 1 to 12 11	236	281	42
11 55 to 12 8	246	298	12

D = −30° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
13 30 to 15 27	13	14	34
15 30 to 16 47	28	33	45
16 21 to 16 52	32	37	17
16 44 to 19 53	37	42	104
19 31 to 20 22	58	65	19
20 0 to 23 5	61	67	89
22 51 to 2 20	76	79	53
4 9 to 8 0	88	87	100
6 22 to 6 43	92	94	11
8 37 to 9 45	93	94	34
7 53 to 12 4	103	106	116
18 39 to 23 59	131	147	142
2 1 to 2 9	214	252	5
6 19 to 7 52	216	253	77
11 52 to 13 50	241	288	80

D = −29° 45′.

Right Ascension.	Zone.	Page.	No. Stars.
15 48 to 16 25	262	326	25

D = −29° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
7 28 to 11 42	90	90	75
4 1 to 7 41	91	92	90
9 41 to 10 23	109	117	24
12 8 to 13 30	115	124	19
18 56 to 0 1	132	150	198
1 49 to 3 0	133	154	37
5 22 to 5 59	215	253	25
5 46 to 6 42	229	270	35
18 1 to 19 10	261	325	58
15 50 to 16 26	263	327	26

D=−28° 50′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
14 31 to 18 58	27	31	64
17 59 to 21 4	47	53	79
21 1 to 0 31	63	70	75
1 42 to 3 39	79	82	42
7 32 to 9 9	102	105	68
17 28 to 18 5	124	139	20
19 3 to 21 8	130	146	68
14 5 to 14 49	168	193	20
15 50 to 16 59	173	200	36
17 49 to 19 27	182	213	69
6 1 to 7 41	210	246	86
9 2 to 10 0	217	255	47
4 42 to 6 31	220	258	75
3 36 to 5 2	222	261	50

D=−28° 10′.

6 9 to 8 18	98	102	95
10 26 to 11 1	99	104	10
8 15 to 10 31	104	109	52
14 16 to 18 14	117	126	139
18 18 to 21 44	128	142	136
22 56 to 2 26	140	162	85
3 56 to 5 6	141	164	19
10 59 to 12 20	158	181	30
12 16 to 15 0	164	188	70
2 19 to 5 52	213	250	125

D=−27° 35′.

15 35 to 17 17	29	34	55
19 41 to 21 1	30	35	26
17 16 to 17 45	41	46	8
17 53 to 19 48	45	51	60
21 0 to 21 31	65	72	14
21 30 to 0 29	66	72	66
4 44 to 9 15	94	95	159
9 7 to 12 38	105	110	125
15 6 to 16 3	106	112	28
10 5 to 10 52	110	117	24
13 0 to 15 0	116	125	70
16 0 to 17 24	118	129	53
18 10 to 20 59	119	130	107
2 9 to 4 1	151	173	44
0 27 to 4 25	209	243	108

D=−26° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
10 26 to 10 42	111	118	5
11 47 to 14 24	112	118	84
20 31 to 21 0	136	158	9
22 58 to 0 6	138	159	33
6 34 to 7 5	152	174	18
9 59 to 12 4	162	185	64
14 31 to 16 22	172	199	48
16 33 to 20 4	176	204	95
7 42 to 9 1	221	259	64
8 25 to 9 19	233	277	33

D=−26° 20′.

15 51 to 19 13	31	35	98
19 12 to 19 24	50	57	3
19 12 to 0 0	56	61	117
23 59 to 2 25	70	75	53
11 31 to 15 0	113	120	125
16 0 to 18 19	114	122	75
18 14 to 19 29	127	140	55
19 18 to 21 6	129	145	47
4 20 to 5 36	153	174	25
5 37 to 7 3	154	175	32
4 59 to 9 2	157	179	97
9 13 to 12 55	161	183	66
14 48 to 16 37	169	194	54
20 42 to 21 44	191	223	24
9 11 to 11 47	244	295	101

D=−25° 40′.

15 58 to 17 4	122	136	38
17 2 to 21 33	123	137	96
23 48 to 2 2	149	171	60
9 4 to 10 26	159	182	32
9 14 to 10 49	160	182	41
10 42 to 14 5	163	186	99
14 48 to 17 3	167	192	70
20 31 to 23 59	208	241	106
4 57 to 5 58	226	267	40
14 14 to 15 49	253	311	66

D = −25° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
17 38 to 19 49	42	47	72
21 23 to 22 28	43	48	20
20 1 to 20 47	64	71	25
20 1 to 0 1	134	155	125
13 2 to 15 46	165	190	67
16 12 to 17 46	166	191	37
17 44 to 19 16	190	221	56
10 49 to 13 3	251	308	97

D = −24° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
23 33 to 0 6	147	170	17
15 39 to 19 52	170	195	97
19 32 to 20 10	198	227	6
19 32 to 22 7	202	232	60
9 40 to 14 23	248	301	107
10 30 to 12 22	249	304	54

D = −23° 45′.

Right Ascension.	Zone.	Page.	No. Stars.
20 3 to 22 2	46	52	38
21 0 to 21 24	142	164	9
1 58 to 3 50	143	165	59
21 23 to 0 0	144	166	96
1 33 to 1 53	145	168	7
23 52 to 0 56	148	171	22
1 49 to 2 9	150	173	7
2 2 to 4 0	155	176	44
4 47 to 8 49	156	177	108
16 55 to 19 12	171	197	60
15 1 to 17 23	174	201	78
20 12 to 22 52	183	214	44
19 7 to 20 21	195	225	36
3 59 to 4 50	218	256	32
6 19 to 7 4	219	257	50
8 1 to 9 0	228	269	42

D = −23° 10′.

Right Ascension.	Zone.	Page.	No. Stars.
21 31 to 0 2	146	168	77
15 1 to 18 4	175	202	91
17 41 to 18 9	178	206	15
18 3 to 18 23	179	207	10
18 7 to 19 24	180	207	30
19 7 to 21 48	192	223	66
9 52 to 13 38	250	305	136

D = −22° 35′.

Right Ascension.	Zone.	Page.	No. Stars.
h. m. h. m.			
16 13 to 16 29	177	206	5
15 51 to 20 6	180–181	208	120
20 2 to 22 0	186	216	39
23 20 to 1 23	211	248	75

D = −21° 55′.

Right Ascension.	Zone.	Page.	No. Stars.
17 41 to 21 9	181	210	123
23 1 to 23 31	194	225	11
21 4 to 23 9	203	233	41
14 48 to 16 6	252	310	62
15 47 to 17 36	256	316	48
17 29 to 18 2	267	331	28

D = −21° 20′.

Right Ascension.	Zone.	Page.	No. Stars.
20 14 to 21 48	184	215	35
17 50 to 18 5	185	216	11
3 15 to 4 2	212	249	23
14 43 to 17 1	255	314	99
16 54 to 17 18	264	328	25
17 3 to 19 2	265	328	100

D = −20° 40′.

Right Ascension.	Zone.	Page.	No. Stars.
18 29 to 22 27	187	217	99
22 26 to 23 16	193	225	14
22 26 to 0 52	199	228	31
23 12 to 0 59	201	231	44
16 4 to 18 41	257	317	100
15 3 to 16 34	259	322	47

D = −20° 5′.

Right Ascension.	Zone.	Page.	No. Stars.
18 58 to 20 44	188	219	42
20 43 to 22 1	196	226	29
22 43 to 23 41	197	227	25
15 33 to 17 12	254	313	62
16 58 to 19 4	260	323	107

D = −19° 25′.

Right Ascension.	Zone.	Page.	No. Stars.
18 0 to 19 9	189	220	51
19 13 to 22 1	200	229	94
16 11 to 19 28	258	319	124

D=−18° 45'.			
Right Ascension.	Zone.	Page.	No. Star.
h. m. h. m. 19 19 to 22 10	204	234	73
D=−18° 10'.			
22 49 to 3 24	206	236	139
D=−16° 55'.			
22 35 to 0 0	205	236	27
20 32 to 22 42	207	239	86

D=−14° 30'.			
Right Ascension.	Zone.	Page.	No. Star.
h. m. h. m. 19 41 to 20 4	135	158	10
19 45 to 20 6	137	158	11
D=−5° 50'.			
16 32 to 16 49	125	140	7
D=−4° 35'.			
16 45 to 17 15	126	140	12

ERRATA.

In printing the "seconds of transit" in the zones observed by Lieutenant Page in 1846 the ciphers should have been omitted, as they do not occur in the observing-book. It appears that both Lieutenant Page and Lieutenant Steedman at first were inexperienced in observing transits, and in their earlier zones only the even second was observed.

In the case of Zone 107 several circle readings were omitted by the copyist, and in the single one copied an error of $-20''$ was made in copying the reading of microscope F, thus introducing an error of $-3''.3$ into this circle reading. It is probable that all the declinations of this zone are systematically in error by this amount.

In numbering the zones the number 180 is repeated at the end of Zone 181, and Zone 182 is called 181, and so on to the end.

Page 3, under "Remarks" in the last note, omit the 25.

Pages 11 and 12, under micrometer, for E. W. read F. W., which denotes the fixed wire.

Page 72, for September 24 read September 28.

Pages 173 to 217, under the head of corrections, the 0^h should have been omitted.

ZONES OF STARS

OBSERVED AT THE NAVAL OBSERVATORY

WITH

THE MURAL CIRCLE

IN THE

YEARS 1846–'47–'48–'49.

ZONES OF STARS

OBSERVED WITH THE

MURAL CIRCLE AT THE NAVAL OBSERVATORY IN THE YEARS 1846–'47–'48–'49.

ZONE 1. APRIL 6. C. $D_0 = -38° 56' 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	41.0	1.2	. .	. .	. .	. .	14 2 20.92	+71.22	+1.52	III.	4	44.128	−15 11.9	−20.1	− 4.5	14 3 33.66	−39 12 . 6.5
2	9	. .	. .	. .	. .	. .	40.0	59.5	3 0.08	71.24	1.46	VI.	4	40.102	19 23.7	20.0	6.1	4 12.78	16 19.8
3	7	19.5	. .	59.5	19.2	39.0	58.9	18.9	16 19.21	71.46	1.65	IV.	4	40.592	14 44.5	18.9	4.8	17 32.32	11 38.2
4	7	36.5	56.2	16.2	37.0	57.0	16.8	36.5	20 36.60	71.54	1.22	IV.	2	14.874	45 50.5	18.5	16.3	21 49.36	42 55.3
5	7	6.7	26.5	. .	. .	26.7	46.2	6.4	26 6.50	71.63	1.49	IV.	3	24.129	36 8.4	17.9	12.4	27 19.62	33 8.7
6	9	5.0	. .	. .	. .	. .	. .	. .	31 4.50	71.71	1.95	II.	4	42.886	16 29.7	17.3	5.0	32 18.16	13 22.0
7	7	. .	24.5	44.0	4.0	24.0	43.8	. .	37 4.09	71.82	1.96	IV.	3	38.868	20 43.4	16.6	6.6	38 17.87	17 36.6
8	8	1.2	21.0	. .	0.8	20.5	40.0	0.0	43 0.61	71.91	2.22	IV.	4	48.185	10 57.1	15.9	3.0	44 14.74	7 46.0
9	7	. .	8.2	. .	48.0	8.2	27.9	. .	47 48.13	72.00	2.10	IV.	3	38.605	21 0.1	15.2	6.7	49 2.23	17 52.0
10	8	. .	. .	. .	. .	. .	54.5	14.5	49 14.89	72.02	2.25	VI.	4	44.400	14 53.8	15.0	4.4	50 29.16	11 43.2
11	8	10.0	30.0	. .	10.0	. .	49.7	9.5	14 54 9.85	72.10	2.10	IV.	3	33.162	26 41.7	14.3	8.8	14 55 24.05	23 34.8
12	10	. .	. .	. .	. .	. .	. .	. .	15 4 . .	72.27	2.50	III.	4	46.712	12 29.5	12.8	3.5	15 5 . .	9 15.0
13	9	. .	. .	. .	. .	4.5	24.5	44.0	6 44.60	72.31	2.41	V.	3	41.000	18 29.5	12.4	5.7	7 59.32	15 17.6
14	9	. .	. .	. .	. .	6.5	. .	. .	10 46.53	72.38	2.25	V.	3	29.260	30 46.5	11.7	10.4	12 1.16	27 38.6
15	8	. .	. .	23.5	43.4	. .	23.0	. .	13 43.37	72.42	2.63	IV.	4	45.768	13 28.7	11.2	3.9	14 58.42	10 13.8
16	9	. .	. .	. .	. .	. .	43.0?	3.0?	15 3.26	72.45	2.44	VI.	3	35.282	24 28.3	11.0	8.0	16 18.15	21 17.3
17	9	. .	. .	. .	. .	. .	3.0	23.0	17 23.32	72.48	2.59	VI.	3	40.661	18 50.6	10.6	5.9	18 38.39	15 37.1
18	10	27.0	. .	. .	. .	. .	. .	. .	22 26.88	72.57	. .	.	.	. .	. . .	. .	. .	23 . .	30 . .
19	7	. .	. .	. .	4.0	24.5	44.0	. .	23 4.23	72.57	2.34	IV.	2	23.941	36 22.1	9.5	12.6	24 19.14	33 14.2
20	9	49.8	9.8	. .	. .	. .	. .	. .	26 49.71	72.64	2.33	II.	2	20.776	39 40.3	8.8	13.9	28 4.68	36 33.0
21	9	. .	. .	. .	. .	12.0	33.0	54.0	26 53.20	72.64	2.61	V.	3	34.961	24 48.6	8.7	8.1	28 8.45	21 35.4
22	8	. .	16.2	36.0	56.0	16.0	36.0	. .	29 56.05	72.68	2.50	IV.	3	27.506	32 36.6	8.1	11.1	31 11.23	29 25.8
23	9	10.0	30.0	. .	10.0	. .	. .	. .	34 9.81	72.75	2.80	IV.	3	38.650	20 57.2	7.2	6.7	35 25.36	17 41.1
24	9	5.5	. .	. .	. .	24.0	. .	. .	15 44 4.53	72.90	3.14	IV.	4	48.360	10 46.2	5.2	2.9	15 45 20.57	7 24.3
25	9	. .	37.0	. .	. .	37.8	. .	18.0	16 1 17.66	+73.16	+3.12	IV.	4	35.564	−24 9.4	− 1.8	− 7.9	16 2 33.94	−39 20 49.1

ZONE 2. APRIL 9. P. $D_0 = -39° 1' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	54.0	. .	34.0	54.0	. .	. .	. .	8 42 54.02	+70.41	+0.25	IV.	2	16.326	−44 19.7	− 5.6	−17.7	8 44 4.68	−39 45 53.0
2	8	56.0	. .	36.0	56.0	. .	. .	. .	9 9 55.89	70.53	0.22	IV.	3	31.936	27 58.5	12.5	11.2	9 11 6.64	29 32.2
3	6	. .	57.0	17.0	37.0	. .	. .	37.5	23 37.18	70.61	0.19	IV.	2	13.765	47 0.0	15.8	18.7	24 47.98	48 44.5
4	8	. .	30.0	. .	10.0	. .	. .	. .	33 9.96	70.68	0.18	IV.	4	38.460	21 7.7	18.0	8.6	34 20.82	22 44.3
5	.	. .	26.0	. .	7.0	. .	. .	. .	38 6.46	70.71	0.17	IV.	3	33.860	25 57.7	19.1	10.5	39 17.34	27 37.3
6	8	42.0	2.0	22.0	42.0	. .	. .	. .	42 41.90	70.75	0.17	IV.	3	33.260	26 35.6	20.1	10.8	43 52.82	28 16.5
7	8	. .	45.0	5.0	25.0	. .	. .	. .	45 24.91	70.77	0.16	IV.	4	43.197	16 10.3	20.7	6.7	46 35.84	17 47.7
8	8	. .	. .	57.0	16.0	. .	. .	. .	47 16.50	70.78	0.17	IV.	3	31.285	28 39.5	21.2	11.5	48 27.45	30 22.2
9	10	55.0	15.0	35.0	56.0?	. .	. .	. .	50 54.85	70.81	0.16	IV.	3	33.885	25 56.2	21.9	10.4	52 5.82	27 38.5
10	7	. .	14.0	34.0	54.0	. .	. .	. .	9 56 53.91	+70.86	+0.16	IV.	4	45.867	−13 22.5	−23.2	− 5.7	9 58 4.93	−39 15 1.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 6,	12	+ 63.261	+ 0.014	+ 0.521	− 0.342	+ 0.246	359 59 59.55	30.003
9,	10	+ 65.036	+ 0.025	+ 0.521	− 0.342	+ 0.246	359 59 60.37	29.998

REMARKS.

April 6. At 14^h clear; bright moonlight.
April 9. 9^h to 10^h, thin clouds. Suspended work from $10^h 42^m$ to $10^h 50^m$.
(1) 3. Mic. reading assumed as $44^r.592$, to agree with Transit Z., 1846, April 6, and Mural, May 21.
(1) 24. At $15\frac{3}{4}^h$ clouds rising.
(1) 25. Illumination of wires at times very unsteady.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 1	April 6,	14	78 14 59.0	59.0	62.0	57.0	66.7	63.9	61.27	30.408	54.0	50.1	52.8	53.0	53.0
		14 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.9			
		14 43	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.5			
		15	58.7	59.4	62.0	57.8	66.6	64.2	61.45	30.386	52.6	48.0	52.0	51.8	
		15 22	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.5	. .		
		15 44	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.2	. .		
		16	58.0	59.9	62.0	57.1	66.9	62.9	61.13	30.372	52.0	46.5	51.3	51.2	53.0

ZONE 2. APRIL 9. P. $D_\circ = -39°\ 1'\ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
11	8	. .	. .	9.0	29.0	. .	. .	. .	9 58 28.98	+70.88	+0.15	IV.	4	40.633	−18 51.2	−23.6	− 7.8	9 59 40.01	−39 20 32.6
12	9	56.0	. .	37.0	. .	17.0	. .	. .	10 1 56.55	70.91	0.13	IV.	2	17.985	42 35.5	24.2	16.9	10 3 7.59	44 26.6
13	.	. .	. .	9.0	. .	49.0	. .	. .	4 28.95	70.93	0.12	III.	2	14.440	46 18.0	24.8	18.4	5 40.00	48 11.2
14	7	. .	. .	. .	. .	32.0	. .	. .	6 11.98	70.95	0.13	V.	3	25.710	34 29.0	25.2	13.7	7 23.06	36 7.9
15	7	. .	. .	. .	. .	. .	. .	. .	6 . .	70.95	. .	VII+	3	27.760	32 19.2	25.3	12.9	8 . .	34 7.4
16	9	. .	. .	. .	. .	. .	. .	12.0	8 12.10	70.97	0.13	VII.	3	26.216	33 56.7	25.5	13.6	9 23.20	35 45.8
17	10	. .	. .	. .	. .	48.0	. .	28.0	10 28.10	70.99	0.12	V.	3	32.245	27 39.2	26.0	11.2	11 39.21	29 26.4
18	10	. .	. .	19.0	. .	. .	. .	. .	13 38.99	71.02	0.11	III.	2	19.933	40 33.4	26.6	16.1	14 50.12	42 26.1
19	12	15.0	. .	55.0	15.0	. .	. .	. .	17 14.91	71.05	0.11	IV.	3	32.430	27 27.7	27.5	11.1	18 26.07	29 16.3
20	12	7.0	27.0	47.0	. .	. .	. .	. .	21 6.85	71.09	0.10	IV.	3	32.544	27 20.5	28.0	11.0	22 18.04	29 9.5
21	10	39.0	. .	19.0	39.0	. .	. .	. .	23 38.92	71.12	0.10	IV.	3	31.925	27 59.2	28.4	11.2	24 50.14	29 48.8
22	7	43.0	2.5	23.0	42.5	. .	. .	. .	25 42.64	71.14	0.10	IV.	3	33.783	27 2.6	28.8	10.5	26 53.88	27 51.9
23	8	58.0	. .	38.0	58.0	. .	. .	. .	30 58.07	71.19	0.08	IV.	1	9.338	51 34.5	29.8	20.5	32 9.34	53 34.8
24	12	11.0	. .	51.0	. .	. .	. .	. .	36 10.75	71.25	0.09	IV.	4	42.930	16 26.9	30.7	6.8	37 22.09	18 14.4
25	12	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	IV.	3	33.260	26 35.5	30.9	10.6	(43) . .	28 27.0
26	10	. .	. .	. .	25.0	. .	. .	. .	50 24.97	71.41	0.08	IV.	5	53.077	5 51.5	33.0	3.0	51 36.46	7 37.5
27	8	. .	. .	. .	. .	. .	7.0	. .	52 27.05	71.44	0.05	VI.	2	20.770	39 40.3	33.3	15.8	53 38.54	41 39.4
28	9	. .	. .	. .	. .	18.0	. .	58.5	10 55 58.35	71.48	0.06	V.	3	31.770	28 8.8	33.8	11.3	10 57 9.89	30 3.9
29	12	53.0	. .	. .	53.0	. .	. .	. .	11 0 52.97	71.54	0.04	I.	3	23.922	36 20.2	34.5	14.5	11 2 4.55	38 19.2
30	10	37.0	. .	18.0	38.0	. .	. .	. .	9 38.00	71.65	0.02	I.	2	17.62	42 57.9	35.8	17.1	10 49.67	45 0.8
31	9	57.0	. .	. .	. .	. .	. .	50.0	11 5. .	71.67	0.03	VII.	3	34.24	25 33.2	36.1	10.3	12 16. .	27 29.6
32	8	. .	. .	. .	. .	. .	. .	. .	12 . .	. .	. .	VII.	2	21.58	38 49.0	36.1	15.4	13 . .	40 50.5
33	.	28.0	. .	9.0	29.0	. .	. .	. .	15 29.02	71.72	0.01	I.	2	21.26	39 9.7	36.5	15.5	16 40.75	41 11.7
34	.	. .	53.0	. .	. .	. .	. .	. .	17 32.85	71.75	0.02	II.	3	35.345	24 24.3	36.8	9.9	18 44.62	26 21.0
35	10	. .	. .	. .	. .	55.0	. .	35.0	11 17 35.09	+71.75	+0.02	V.	3	31.035	−28 55.0	−36.8	−11.6	11 18 46.86	−39 30 53.4

ZONE 3. APRIL 13. C. $D_\circ = -39°\ 1'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	8.5	29.0	49.0	. .	28.0	48.2	9.0	10 6 8.61	+73.97	+0.41	IV.	3	25.745	−34 26.9	− 7.6	−11.9	10 7 22.99	−39 36 16.4
2	7	19.0	38.8	58.5	18.5	39.0	58.7	18.5	6 18.71	73.97	0.40	V.	3	27.827	32 16.2	7.6	11.1	7 33.08	34 4.9
3	8	. .	. .	. .	. .	29.0	49.0	. .	8 9.05	73.99	0.41	V.	3	26.259	33 54.8	8.0	11.7	9 23.45	35 44.5
4	8.9	. .	45.0	5.0	. .	. .	. .	. .	10 24.91	74.01	0.40	III.	3	32.306	27 35.4	8.5	9.2	11 39.32	29 23.1
5	7	. .	55.5	14.7	35.0	55.5	15.0	. .	13 35.15	74.03	0.43	IV.	2	19.926	40 33.7	9.2	14.3	14 49.61	42 27.2
6	9	. .	32.0	. .	12.0	. .	. .	. .	17 11.96	74.07	0.42	IV.	3	32.462	27 25.7	10.0	9.2	18 26.45	29 14.9
7	9	. .	. .	. .	. .	. .	31.5	. .	20 51.54	74.10	0.44	VI.	2	19.491	41 0.7	10.8	14.5	22 6.08	42 56.0
8	8	. .	. .	. .	35.0	. .	15.0	. .	22 35.10	74.12	0.42	IV.	3	32.915	26 57.0	11.1	9.0	24 49.64	28 47.1
9	7	. .	59.2	19.0	39.0	59.5	19.0	. .	25 39.15	74.15	0.42	IV.	3	33.767	26 3.6	11.8	8.7	26 53.72	27 54.1
10	9	. .	. .	. .	40.0	. .	20.0	. .	31 40.11	74.21	0.42	IV.	3	33.799	26 1.6	13.0	8.7	32 54.74	27 53.3
11	9	. .	. .	. .	7.0	27.0	47.0	. .	36 6.97	74.26	0.41	IV.	4	42.959	16 25.1	13.9	4.7	37 21.64	18 13.7
12	9	. .	. .	. .	. .	. .	. .	8.5	37 8.69	74.27	0.43	VII.	3	33.389	26 26.6	14.2	8.8	38 23.39	28 19.6
13	7	. .	. .	. .	39.5	. .	. .	39.0	44 39.31	74.35	0.47	IV.	2	20.745	39 42.5	15.8	14.0	45 54.13	41 42.3
14	7	. .	. .	. .	0.5	. .	41.0	. .	45 0.82	74.36	0.47	VII.+	3	24.919	35 17.2	15.9	12.2	46 15.65	37 15.3
15	8.9	. .	. .	. .	. .	21.0	41.0	1.0	48 1.24	74.39	9.43	V.	4	44.206	15 6.5	16.6	4.5	49 16.06	16 57.6
16	9	. .	. .	. .	. .	. .	2.0	. .	48 42.27	74.40	0.40	VI.	4	42. .	17 . .	. .	. .	49 57.07	19 . .
17	7	11.7	31.8	52.0	11.7	31.0?	51.2	. .	52 11.53	74.44	0.46	IV.	3	35.039	24 43.8	17.5	8.2	53 26.43	26 39.5
18	9	. .	43.0	3.0	23.0	43.0	. .	. .	54 22.96	74.46	0.44	IV.	3	43.390	15 59.7	18.0	4.9	55 37.86	17 52.6
19	7	. .	. .	. .	55.0	15.0	35.0	54.9	55 55.07	74.48	0.47	IV.	3	31.844	28 4.3	18.3	9.4	10 57 10.02	30 2.0
20	9	. .	. .	. .	28.0	48.0	. .	. .	10 59 28.06	+74.52	+0.46	IV.	3	37.853	−21 47.1	19.2	− 7.0	11 0 43.04	−39 23 43.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 9,	10	+ 65.036	+ 0.025	+ 0.521	− 0.342	+ 0.246	359 59 60.37	29.998
13,	12	+ 67.851	+ 0.032	+ 0.521	− 0.342	+ 0.246	359 59 59.77	30.007

REMARKS.

April 13. Night clear; numerous faint stars which would not bear illumination.

(3) 8. Minute assumed as 23, not 22.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 2	April 9, 8	78 19 61.0	59.0	63.5	58.3	67.0	65.5	62.38	30.536	61.5	48.0	. .	. .	50.0
	11 20	78 19 59.0	60.0	62.7	57.6	65.0	62.3	61.10	30.370	51.0	46.0	53.0	. .	50.0
Zone 3	13, 10 6	78 19 60.2	61.9	62.9	60.9	65.4	65.4	62.78	30.014	50.5	41.0	49.4	50.9	57.5
	10 37	. . . .	. .	. .	. .	. .	. .	. .	. . .	. .	39.8			
	11 2	. . . .	. .	. .	. .	. .	. .	. .	. . .	. .	37.8			

ZONE 3. APRIL 13. C. $D_0 = -39°$ 1′ 30″—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9	58.0	. .	39.0	. .	. .	. .	. .	11 2 58.47	+74.56	+0.50	III.	3	19.060	−41 26.0	−19.7	−14.7	11 4 13.53	−39 43 30.4
22	9	. .	. .	. .	. .	. .	. .	30.0	3 30.33	74.57	0.45	VII.	4	43.978	15 19.4	19.8	4.6	4 45.35	17 13.8
23	9.10	. .	. .	. .	. .	. .	. .	13.0	6 13.36	74.60	0.46	VII.	4	46.568	12 36.8	20.3	3.6	7 28.42	14 30.7
24	8	. .	. .	14.0	34.0	. .	. .	. .	9 34.02	74.64	0.52	IV.	2	17.682	42 54.6	20.7	15.3	10 49.18	45 0.6
25	6.7	. .	. .	. .	47.0	7.0	26.5	46.5	10 46.78	74.66	0.52	IV.	3	21.662	38 43.0	20.9	13.6	12 1.96	40 47.5
26	9	25.5	45.0	5.0	25.0	. .	. .	. .	15 25.11	74.72	0.52	IV.	3	21.258	39 8.5	21.5	13.8	16 40.35	41 13.8
27	8.9	. .	1.8	21.7	41.7	. .	. .	. .	16 41.72	74.73	0.52	IV.	3	25.012	35 12.9	21.7	12.2	17 56.97	37 16.8
28	8	. .	. .	. .	. .	49.0	9.0	29.0	17 29.15	74.74	0.50	V.	3	35.415	24 20.3	21.8	8.0	18 44.39	26 20.1
29	9	. .	. .	. .	. .	. .	12.0	32.2	17 32.25	74.74	0.51	VII.+	3	31.111	28 47.9	21.8	9.7	18 47.50	30 49.4
30	9	. .	38.0	58.0	. .	. .	. .	. .	21 17.85	74.79	0.48	III.	4	48.619	10 30.0	22.3	2.8	22 33.12	12 25.1
31	8	. .	48.5	8.0	28.5	. .	. .	. .	24 28.27	74.83	0.50	IV.	3	40.329	19 11.9	22.7	6.1	25 43.60	21 10.7
32	5	. .	. .	. .	3.0	23.0	43.5	3.5	25 3.24	74.84	0.54	IV.	2	17.166	43 26.9	22.8	15.5	26 18.62	45 35.2
33	9	. .	. .	9.0?	. .	. .	. .	. .	27 28.98	74.87	0.54	III.	3	21.502	38 53.0	24.4	13.7	28 44.39	41 1.1
34	7	9.0	29.5	49.5	9.5	29.5	49.5	. .	30 9.52	74.91	0.51	IV.	3	33.572	26 16.0	23.5	8.7	31 24.94	28 18.2
35	9	11.0	31.0	. .	. .	. .	. .	. .	32 11.00	74.94	0.54	II.	3	18.375	37 10.1	23.7	15.0	33 26.48	39 18.8
36	9	. .	. .	. .	. .	15.0	35.0	. .	33 55.05	74.96	0.54	V.	3	26.629	33 31.5	23.9	11.6	35 10.55	35 37.0
37	7	. .	. .	22.8	. .	2.5	. .	42.5	36 42.60	75.00	0.55	IV.	3	21.498	38 53.4	24.2	13.7	37 58.15	41 1.3
38	5	. .	. .	48.0	7.5	. .	47.5	. .	38 7.70	75.01	0.55	IV.	3	21.471	38 55.1	24.4	13.7	39 23.26	41 3.2
39	8	. .	. .	. .	. .	. .	54.5	14.7	39 14.80	75.03	0.53	VI.	3	34.451	25 20.5	24.6	8.4	40 30.36	27 23.5
40	8	. .	. .	. .	13.5	33.0	53.0	. .	41 13.27	75.06	0.53	IV.	3	35.274	24 29.2	24.8	8.1	42 28.86	26 32.1
41	8	. .	. .	34.0	53.7	14.0	. .	. .	43 53.91	75.15	0.53	IV.	3	33.572	26 16.0	25.1	8.8	44 9.59	28 19.9
42	8	. .	3.7	23.0	. .	. .	. .	. .	47 43.27	75.15	0.55	III.	3	30.484	29 29.6	25.6	10.0	48 58.97	31 35.2
43	9	. .	. .	. .	. .	. .	37.0	. .	47 57.12	75.15	0.55	VI.	3	29.169	30 51.9	25.6	10.5	49 12.82	32 58.0
44	9	. .	. .	. .	. .	. .	36.0?	. .	47 56.10	75.15	0.56	VI.	3	27. .	33 . .	. .	. .	49 11.81	34 . .
45	8.9	. .	. .	. .	28.7	48.7	. .	. .	50 28.70	75.19	0.57	IV.	3	20.092	40 21.5	25.9	14.2	51 44.46	42 31.6
46	9.10	. .	. .	. .	. .	. .	. .	. .	52 . .	75.22	. .	IV.	3	20.574	39 51.3	26.1	14.0	53 . .	42 1.4
47	9	27.0	47.0	. .	. .	. .	. .	. .	56 26.83	75.27	0.56	II.	3	. .748	32 21.3	26.6	10.2	57 42.66	34 28.1
48	9	. .	8.0	27.0	. .	. .	. .	8.0	11 57 7.58	75.28	0.55	III.	4	37.291	22 21.3	26.7	7.3	11 59 23.41	24 25.3
49	9	43.5	. .	. .	. .	4.0	. .	. .	12 1 43.71	+75.32	+0.59	III.	3	18.723	−41 47.2	−27.2	−14.8	12 2 59.62	−39 43 59.2

ZONE 4. APRIL 14. P. $D_0 = -39°$ 1′ 10″.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	17.0	37.0	57.0	17.0	. .	. .	. .	9 22 16.89	+12.52	+1.67	IV.	3	34.068	−25 44.8	− 6.8	− 9.2	9 22 31.08	−39 27 10.8
2	9	. .	. .	. .	. .	48.0	8.0	. .	23 28.18	12.53	1.88	VI.	4	41.820	17 35.6	7.1	6.2	23 42.59	18 58.9
3	.	. .	. .	. .	. .	. .	. .	16.0	25 16 .	12.54	. .	.	.	. .	. . .	. .	. .	25 (38)	
4	10	16.0	36.0	56.0	16.0	. .	. .	. .	29 15.92	12.56	1.53	IV.	3	29.615	30 24.2	8.5	10.9	29 30.01	31 53.6
5	9	. .	. .	41.0	2.0	. .	. .	. .	33 1.50?	12.58	1.47	IV.	3	27.780	32 19.3	9.4	11.7	33 15.55?	33 50.4
6	9	. .	. .	. .	34.0	. .	. .	. .	37 34.04	12.61	1.73	IV.	4	37.730	21 53.4	10.5	7.8	37 48.38	23 21.7
7	7	39.0	59.0	18.5	39.0	. .	. .	. .	43 38.78	12.65	1.59	IV.	3	32.730	26 37.3	12.0	9.7	43 53.02	28 9.0
8	8	22.0	. .	1.0	21.0	. .	. .	. .	46 21.17	12.67	1.87	IV.	4	43.103	16 16.1	12.6	5.7	46 35.71	17 44.4
9	8	. .	33.0	. .	13.0	. .	. .	. .	48 12.97	12.68	1.54	IV.	3	31.203	28 44.6	13.0	10.3	48 27.19	30 17.9
10	9	. .	. .	. .	. .	25.0	. .	4.0	49 4.49?	12.69	1.21	VI.	2	18.690	41 50.8	13.2	15.3	49 18.39?	43 29.3
11	8	. .	46.0	6.0	25.0	. .	. .	. .	9 59 25.60?	12.77	1.80	IV.	4	40.720	18 45.7	15.5	6.6	9 59 40.17?	20 17.8
12	9	25.0	. .	. .	25.0	. .	. .	. .	10 5 25.05	12.81	1.05	IV.	2	14.376	46 22.0	16.8	17.1	10 5 38.91	48 5.9
13	7	. .	29.0	49.0	9.0	. .	. .	. .	7 8.99	12.83	1.37	IV.	3	25.650	34 32.9	17.2	12.5	7 23.19	36 12.6
14	7	. .	. .	59.0	19.0	. .	. .	. .	7 19.01	12.83	1.43	VII.	3	27.685	32 24.4	17.2	11.7	7 33.27	34 3.3
15	8	. .	. .	6.0	26.0	. .	. .	. .	11 26.00	12.87	1.54	IV.	3	32.125	27 46.7	18.1	9.9	11 40.41	29 24.7
16	8	. .	. .	. .	35.0	. .	. .	. .	10 14 35.05	+12.89	+1.20	IV.	2	19.835	−40 39.5	−18.8	−14.9	10 14 49.14	−39 42 23.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 14.	12	+ 8.139	+ 0.001	+ 0.521	− 0.342	+ 0.246	0 0 1.42	29.999

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°		°
Zone 3	April 13, 11 43	. . .	. .	. .	. .	. .	. .	. .	. .	. .	37.5			
	12 1	78 19 59.6	62.9	64.4	61.3	67.1	63.3	63.10	30.056	46.5	36.8	46.0	46.5	57.0
Zone 4	14, 9 22	78 19 57.7	58.4	63.0	57.0	65.0	61.0	60.35	29.990	53.0	50.5	51.5	53.0	
	10 31	. . .	. .	. .	. .	. .	. .	. .	29.994	53.0	49.2			

REMARKS.

(3) 39. Min. of T. one smaller than Transit Z., April 13.
(3) 41. Minute assumed as 42 instead of 43.
(3) 48. Transits probably over I and II, and minute 56 instead of 57.

April 14. At 10[h] clouds forming; some stars may have been missed in consequence; missed none that were seen above the 9th mag.
(4) 7. Micrometer reading assumed as 33″.230 instead of 32″.730. (See Zone 2, No. 6.)

ZONE 4. APRIL 14. P. $D_0 = -39° 1' 10''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
17	8	. .	. .	. .	35.0	. .	. .	. .	10 24 35.05	+12.98	+1.51	IV.	3	31.774	−28 8.7	−20.7	−10.1	10 24 49.54	−39 29 49.5
18	8	39.0	59.0	19.0	39.0	. .	. .	. .	26 38.90	13.00	1.56	IV.	3	33.595	26 14.5	21.2	9.4	26 53.46	27 55.1
19	8	. .	. .	. .	. .	. .	. .	54.0	10 31 53.88	+13.05	+0.89	IV.	1	9.270	−51 38.7	−22.4	−19.2	10 32 7.82	−39 53 30.3

ZONE 5. APRIL 15. P. $D_0 = -38° 21' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
1	6	51.0	11.0	30.5	50.5	. .	. .	49.5	9 10 50.34	+13.32	+0.96	IV.	3	34.545	−25 14.9	− 5.6	− 8.4	9 11 4.62	−38 46 28.9
2	10	. .	. .	21.0	24.0	. .	. .	. .	15 23.92	13.34	0.52	IV.	2	18.303	42 15.8	6.7	14.2	15 37.78	39 3 36.7
3	9	. .	. .	. .	. .	49.0	. .	. .	16 29.10	13.35	0.40	IV.	1	13.753	46 57.8	7.0	16.1	16 42.85	39 8 20.9
4	6	. .	. .	. .	5.0	. .	44.0	. .	18 4.78	13.35	0.92	IV.	3	34.155	25 39.4	7.4	8.5	18 19.05	38 46 55.3
5	6	. .	. .	. .	. .	11.0	. .	50.0	26 51.15	13.40	1.22	V.	5	51.985	7 6.6	9.6	1.9	27 5.77	28 12.2
6	7	23.5	43.5	3.5	. .	. .	. .	. .	32 23.04	13.44	0.63	III.	3	25.377	34 50.1	11.0	11.7	32 37.11	56 12.8
7	5	. .	. .	. .	. .	27.0	26.5	47.0	33 47.31	13.44	0.74	V.	3	30.105	29 53.3	11.3	10.0	34 1.49	51 14.6
8	7	55.0	15.0	34.5	54.3	. .	. .	. .	37 54.35	13.47	0.69	IV.	3	28.363	31 42.9	12.3	10.5	38 8.51	53 5.7
9	8	26.0	45.5	5.0	24.5	. .	. .	. .	40 24.66	13.48	1.05	IV.	4	42.833	16 33.0	12.9	5.2	40 39.19	37 51.1
10	7	31.0	51.0	10.5	30.0	. .	. .	29.5	49 30.26	13.55	0.70	IV.	3	30.870	29 5.4	15.0	9.7	49 44.51	50 30.1
11	6	. .	3.0	22.5	42.0	. .	. .	. .	54 42.26	13.58	0.84	IV.	3	37.155	22 31.1	16.2	7.4	54 56.78	43 54.7
12	5	. .	. .	. .	. .	. .	15.0	35.0	54 35.76	13.58	0.95	V.	3	41.125	18 21.7	16.2	5.9	54 50.29	39 43.8
13	6	. .	. .	. .	32.0	52.0	. .	. .	56 32.16	13.60	0.89	IV.	3	38.895	20 41.7	16.6	6.8	56 46.65	42 5.1
14	7	. .	. .	. .	. .	. .	50.0	9.5	9 57 10.56	13.60	1.08	VI.	4	47.193	11 58.5	16.7	3.8	9 57 25.24	38 33 19.0
15	9	. .	. .	23.5	43.0	. .	. .	. .	10 2 43.17	13.64	0.26	IV.	2	16.100	44 33.7	17.9	15.0	10 2 57.07	39 6 6.6
16	9	. .	. .	. .	50.0	. .	. .	. .	4 50.04	13.66	0.90	IV.	4	40.973	18 29.8	18.4	6.0	5 4.60	38 39 54.2
17	7	33.0	52.5	12.5	32.0	. .	. .	. .	7 32.03	13.68	0.98	IV.	4	44.600	14 42.1	19.0	4.8	7 46.69	36 5.9
18	8	. .	. .	. .	57.0	. .	. .	. .	8 57.00	13.69	1.05	IV.	4	47.730	11 25.5	19.3	3.7	9 11.74	32 48.5
19	6	22.0	42.0	2.0	22.0	. .	. .	. .	13 21.67	13.73	0.44	IV.	3	24.707	35 32.1	20.2	11.9	13 35.84	57 4.2
20	9	. .	36.5	. .	16.0	. .	. .	. .	24 15.97	13.82	0.95	IV.	4	46.330	12 53.6	22.3	4.2	24 30.74	34 20.1
21	9	. .	. .	. .	19.0	. .	. .	. .	26 19.05	13.84	0.42	IV.	2	26.310	33 53.7	22.8	11.4	26 33.31	55 27.9
22	5	. .	. .	59.0	19.0	. .	58.5	18.0	28 18.91	13.86	0.60	IV.	3	34.005	25 48.7	23.2	8.5	28 33.37	47 20.4
23	9	. .	. .	46.0	6.0	. .	. .	. .	35 5.91	13.92	0.53	IV.	3	32.385	27 30.5	24.5	9.1	35 20.36	38 49 4.1
24	9	13.0	33.0	53.0	12.5	. .	. .	. .	10 57 12.58	14.15	0.08	IV.	2	21.323	39 6.5	28.1	13.2	10 57 26.81	39 0 48.1
25	7	53.5?	13.0	33.0	52.5	. .	. .	. .	11 1 52.70	+14.20	+0.58	IV.	4	41.410	−18 2.5	−29.1	− 5.9	11 2 7.48	−38 39 37.5

ZONE 6. APRIL 16. C. $D_0 = -37° 5' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
1	7	. .	. .	. .	47.0	6.5	26.0	45.7	9 54 47.26	+14.68	+0.05	IV.	4	42.721	−16 40.0	− 0.9	−10.0	9 55 1.99	−37 22 40.9
2	7	17.5	36.5	55.0	. .	35.0	. .	. .	10 1 15.53	14.73	−0.03	IV.	3	28.479	31 35.6	2.3	14.3	10 1 30.23	37 42.2
3	9.10	. .	. .	. .	41.0?	. .	. .	30.0?	3 41.43?	14.75	+0.05	IV.	3	37.384	12 16.8	2.8	11.6	3 56.23	18 20.2
4	7	. .	. .	. .	. .	. .	. .	30.0	5 31.74	14.76	0.00	VII.	3	29.309	30 42.7	3.2	14.0	5 46.50	36 49.9
5	8	. .	. .	. .	. .	. .	16.0	36.5	7 37.71	14.78	0.01	VI.	3	29.615	30 23.9	3.6	13.9	7 52.50	36 31.4
6	7	37.2	57.0?	16.5	. .	54.7	. .	33.5	37 35.48	15.03	0.26	IV.	4	44.112	15 12.8	9.2	9.6	37 50.77	21 21.6
7	8	. .	26.0	. .	4.5	. .	. .	. .	41 4.77	15.06	0.06	IV.	2	16.336	44 19.1	9.8	18.0	41 19.09	50 36.9
8	7	. .	. .	. .	. .	23.0	. .	1.2	42 3.28	15.07	0.21	V.	3	34.807	24 58.2	10.0	12.4	42 18.56	31 10.6
9	8	. .	17.0	. .	55.5?	. .	34.5	. .	46 55.70	15.11	0.30	IV.	4	42.526	16 52.4	10.8	10.0	47 11.11	23 3.2
10	7	. .	. .	. .	. .	. .	. .	. .	47 . .	15.12	. .	.	2	12. .	49 . .	. .	. .	48 . .	55 . .
11	7.8	. .	. .	35.7	55.7	. .	35.5	55.0	50 56.00	15.15	0.08	IV.	2	12.436	48 23.4	11.4	19.2	51 11.23	54 44.0
12	7.8	. .	. .	. .	. .	. .	33.5	53.5	52 55.03	15.17	0.29	VI.	3	37.097	22 34.4	11.7	11.7	53 10.49	28 47.8
13	9	. .	. .	. .	. .	. .	. .	. .	10 57 . .	+15.22	+0.26	IV.	3	30.561	−29 24.9	−12.4	−13.6	10 58 . .	−37 35 40.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 15,	12	+ 8.214	+ 0.004	+ 0.521	− 0.342	+ 0.246	0 0 0.47	30.007

REMARKS.

April 15. Very clear.
April 16. Clear, except cloud bank near horizon; wind fresh, causing the lamp to flare, and rendering the illumination of the wires very unsteady; magnitudes consequently doubtful, and several stars missed.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 5	April 15, 9 11	77 39 57.5	59.5	63.5	57.5	66.8	62.5	61.22	30.235	56.0	50.0			
	10	77 39 56	58	62	56	65.3	61	59.72						
	11 1	55	57	61	55	64.3	60	58.72	30.282	52.0	43.0	54.0	50.0	
Zone 6	16, 9 50	76 24 60.6	61.1	64.0	60.1	67.9	63.0	62.78	30.324	52.0	46.7	50.0	50.3	52.2
	10 30	60.1	61.3	64.0	60.0	67.5	62.7	62.60	30.334	51.0	46.1	49.7	49.8	

ZONE 6. APRIL 16. C. $D_{\circ} = -37^{\circ}\ 5'\ 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
14	6	35.0	54.0	13.5	. .	52.5	. .	. .	11 0 33.00	+15.25	+0.26	IV.	3	30.461	−29 31.2	−12.8	−13.7	11 0 48.51	−37 35 47.7
15	9	. .	. .	. .	. .	. .	. .	48.7	0 50.40	15.25	0.23	IV.	3	26.066	34 6.9	12.9	15.0	1 5.88	40 24.8
16	8	. .	. .	. .	9.2	. .	. .	7.5	3 9.25	15.27	0.28	IV.	3	31.660	28 15.9	13.2	13.3	3 24.80	34 32.4
17	8.9	. .	. .	. .	. .	. .	. .	. .	3 . .	15.27	0.30	IV.	3	33.551	26 17.3	13.2	12.7	4 . .	32 33.2
18	8	53.7	12.5	. .	. .	. .	. .	. .	7 51.52	15.32	0.36	II.	3	38.862	20 43.3	13.9	11.2	8 7.20	26 58.4
19	7	. .	. .	50.6	10.0	. .	. .	. .	8 10.01	15.33	0.36	IV.	3	39.350	20 13.4	13.9	11.0	8 25.70	26 28.3
20	7	. .	. .	9.0	28.2	47.5	. .	7.0?	9 28.23?	15.34	0.31	IV.	3	31.321	28 37.3	14.1	13.4	9 43.88?	34 54.8
21	8	. .	. .	. .	12.7	33.0	. .	11.0	10 13.01	15.35	0.33	IV.	3	32.338	27 33.5	14.2	13.1	10 28.70	33 50.8
22	7	. .	20.7	40.0	59.2	18.7	. .	. .	13 59.35	15.39	0.37	IV.	3	36.692	23 0.1	14.7	11.8	14 15.11	29 16.6
23	8	. .	. .	58.3	. .	37.6	. .	. .	16 17.93	15.41	0.32	IV.	3	26.831	33 18.8	15.0	14.8	16 33.66	39 38.6
24	7	. .	. .	32.0	51.7	. .	30.0	49.2	18 51.39	15.44	0.46	IV.	4	45.490	13 46.3	15.3	9.2	19 7.29	20 0.8
25	8	. .	. .	. .	. .	. .	39.0	58.2	19 0.16	15.44	0.41	VI.	3	38.388	21 13.5	15.4	11.3	19 16.01	27 30.2
26	6	. .	30.3	49.3	8.7	. .	47.5	7.0	22 8.81	15.48	0.36	IV.	3	28.549	31 31.2	15.7	14.2	22 24.65	37 51.1
27	8	. .	. .	36.0	. .	16.0	. .	. .	26 55.94	15.53	0.21	IV.	2	10.398	50 31.1	16.3	19.9	27 11.68	56 57.3
28	8.9	. .	. .	. .	. .	. .	. .	44.7	27 46.18	15.54	0.22	IV.	2	8.882	52 5.7	16.4	20.4	28 1.94	58 32.5
29	8	. .	4.5	24.0	. .	3.2	. .	. .	30 43.54	15.57	0.38	IV.	3	27.578	32 32.0	16.7	14.6	30 59.49	38 53.3
30	7	. .	. .	59.0	18.7	. .	57.0	16.2	32 18.30	15.59	0.56	IV.	4	48.771	10 20.2	16.9	8.2	32 34.45	16 35.3
31	8	. .	. .	. .	29.2	49.0	. .	. .	34 29.40	15.62	0.46	IV.	3	35.420	24 20.1	17.1	12.2	34 45.48	30 39.4
32	8.9	. .	. .	. .	. .	. .	. .	7.5	34 9.33	15.61	0.49	VII.	3	38.419	21 11.0	17.0	11.3	34 25.43	27 29.3
33	8	. .	. .	. .	. .	38.0	. .	. .	37 18.57	15.65	0.47	V.	3	35.244	24 31.0	17.4	12.2	37 34.69	30 50.6
34	8	. .	. .	. .	. .	37.5	. .	14.0	38 17. ?	15.66	0.57	V.	4	46.970	12 12.8	17.5	8.7	38 (33.)?	18 29.0
35	9	. .	. .	. .	. .	. .	. .	47.5	38 49.44	15.67	0.56	VII.	4	46.234	12 57.9	17.5	9.0	39 5.67	19 14.4
36	9	. .	. .	. .	57.5	. .	. .	. .	41 57.50	15.70	0.58	IV.	4	45.841	13 24.1	17.8	9.1	42 13.78	19 41.0
37	8	41.5	. .	. .	. .	. .	. .	35.0	44 ? ?	15.71	0.61	IV.	4	49.598	9 28.4	18.0	8.0	44 . .	15 44.4
38	6.7	. .	. .	. .	58.2	17.5	36.2	. .	44 57.93	15.74	0.51	IV.	3	35.762	23 58.4	18.1	12.1	45 14.18	30 18.6
39	7	. .	. .	. .	. .	19.7	38.5	58.5	46 0.03	15.75	0.48	IV.	3	29.763	30 14.8	18.2	13.9	46 16.26	36 36.9
40	8	. .	. .	36.0	55.7	. .	. .	. .	48 55.57	15.79	0.53	.	3	36. .	24 . .	. .	. .	49 11.89	30 . .
41	6.7	. .	. .	. .	38.0	. .	17.0	36.2	11 49 38.04	+15.79	+0.46	IV.	3	26.799	−33 20.8	−18.6	−14.8	11 49 54.29	−37 39 44.2

ZONE 7. APRIL 16. C. $D_{\circ} = -37^{\circ}\ 5'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	11.1	30.5	49.5	9.0	28.2	47.7	6.5	14 11 8.94	+17.76	+0.81	IV.	4	53.630	− 5 15.2	−17.0	− 6.4	14 11 27.51	−37 11 28.7
2	8	. .	. .	. .	57.0?	. .	. .	. .	18 57.05	17.87	0.36	IV.	1	14.181	46 31.2	16.3	18.6	19 15.28	52 56.1
3	7	. .	. .	. .	44.5	4.0	23.7	. .	21 44.57	17.91	0.36	IV.	2	13.811	46 57.1	16.0	18.9	22 2.84	53 22.0
4	7	. .	4.2	. .	43.2	. .	22.0	. .	25 43.17	17.97	0.38	IV.	2	16.414	44 14.2	15.5	18.1	26 1.52	50 37.8
5	8.9	. .	. .	. .	. .	. .	. .	6.0	29 8.04	18.02	0.83	VII.	4	54.885	3 54.7	15.2	6.3	29 26.89	10 6.2
6	5.6	. .	. .	1.5	21.2	. .	59.9	19.1	32 21.11	18.07	0.84	IV.	4	56.204	2 33.7	14.7	6.0	32 40.02	8 44.4
7	9.10	. .	. .	. .	. .	53.0	. .	. .	34 33.58	18.10	0.61	V.	3	35.972	23 45.1	14.5	12.0	34 52.29	30 1.6
8	7	. .	44.2	. .	23.2	43.0	2.3	21.8	37 23.36	18.14	0.51	IV.	3	27.267	32 51.6	14.2	14.6	37 42.01	39 10.4
9	9	23.0	42.2	. .	. .	. .	. .	. .	40 21.36	18.19	0.34	IV.	2	12.665	48 9.0	13.8	19.2	40 39.89	54 32.0
10	9	. .	. .	. .	37.5	57.0	. .	. .	41 37.53	18.20	0.44	IV.	2	21.904	38 29.8	13.6	16.4	41 56.17	44 49.8
11	7	. .	. .	. .	32.7	52.2	. .	30.8	43 32.67	18.23	0.51	IV.	3	28.261	31 49.3	13.4	14.3	43 51.41	38 7.0
12	9	. .	. .	. .	. .	. .	35.5	. .	44 56.66	18.25	0.51	V.	3	27.888	32 12.3	13.2	14.5	45 15.42	38 30.0
13	9	. .	. .	. .	. .	. .	. .	4.0?	45 15.73	18.25	0.52	VII.	3	29.150	30 52.6	13.1	14.1	45 34.50	37 9.8
14	9	. .	. .	. .	5.7	25.6	. .	4.2	49 15.90	18.31	0.46	IV.	3	23.796	36 29.1	12.6	15.8	49 34.67	42 47.4
15	7	. .	. .	. .	. .	. .	. .	25.7	49 27.66	18.32	0.75	VII.	4	48.746	10 20.1	12.6	8.1	49 46.73	16 30.8
16	7.8	. .	. .	. .	. .	44.0	3.5	22.8	51 24.67	18.35	0.62	IV.	3	38.377	21 14.5	12.3	11.3	51 43.64	27 28.1
17	7.8	. .	37.0	56.6	15.7	. .	54.6	13.7	14 57 15.80	18.43	0.69	IV.	4	43.920	15 24.7	11.4	9.6	14 57 34.92	21 35.7
18	9	. .	. .	24.0	43.7	2.2	. .	. .	15 0 43.56?	18.48	0.64	IV.	3	39.669	19 53.2	11.0	10.9	15 1 2.68?	26 5.1
19	7.8	. .	. .	. .	14.7	34.5	53.0	. .	15 4 14.58	+18.53	+0.31	IV.	2	11.691	−49 10.0	−10.5	−19.5	15 4 33.42	−37 55 30.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 16,	12	+ 8.190	+ 0.006	+ 0.521	− 0.342	+ 0.246	0 0 0.60	30.005
16,	15	. .	. .	. .	. .	. .	0 0 0.47	30.005

REMARKS.

April 16. 12^h moved circle for other observations.
$14^h\ 0^m$ to $14^h\ 22^m$ cap on.
$15^h\ 20^m$ cloud bank rising; soon after obscured.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 6	April 16, 11 49	76 24 59.6	60.3	64.1	60.1	67.5	62.0	62.27	30.320	50.7	45.6	49.9	50.0	52.2
	13 55	57.0	59.3	61.2	58.6	65.0	59.2	60.05	. .	. .	. .	47.8	48.5	52.2
Zone 7	14 11	. . . .	. .	. .	. .	. .	. .	. .	30.302	49.0	43.2			
	14 57	. . . .	. .	. .	. .	. .	. .	. .	. .	. .	43.3			
	15 22	. . . .	. .	. .	. .	. .	. .	. .	30.300	48.0	42.1			
	15 30	55.9	60.0	61.3	57.9	65.7	58.0	59.80	. .	. .	. .	48.1	48.2	52.0

ZONE 7. APRIL 16. C. $D_\circ = -37^\circ\ 5'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	7.8	. .	24.2	43.4	3.5	. .	. .	2.5	15 7 3.41?	+18.57	+0.35	IV.	2	13.804	−46 57.5	−10.1	−18.8	15 7 22.33?	−37 53 16.4
21	7	34.5	53.3	12.7	31.7	50.3	9.8	29.7	11 31.85	18.63	0.49	IV.	3	26.132	34 2.7	9.5	15.0	11 50.97	40 17.2
22	7.8	. .	27.7	47.7	7.0	. .	. .	5.7	15 7.04	18.68	0.51	IV.	3	28.389	31 41.3	9.0	14.2	15 26.23	37 54.5
23	8	18.5	38.	. .	16.5	36.5	. .	15.3	15 16.83	18.68	0.32	IV.	3	28.969	31 4.7	9.0	14.1	15 36.03	37 17.8
24	7	. .	49.5	9.0	28.2	. .	. .	26.5	15 22 28.31	+18.79	+0.56	IV.	3	32.748	−27 7.5	−8.0	−12.9	15 22 47.66	−37 33 18.4

ZONE 8. APRIL 17. P. $D_\circ = -35^\circ\ 50'\ 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	22.0	41.0	. .	19.0	. .	. .	. .	9 4 19.13	+13.94	+0.88	IV.	3	35.955	−23 47.5	−1.4	−10.3	9 4 33.95	−36 14 9.2
2	8	. .	. .	. .	54.0	. .	. .	. .	13 54.06	13.98	0.87	IV.	3	31.000	28 57.3	3.0	11.5	14 8.91	19 22.6
3	8	. .	. .	. .	. .	52.0	. .	. .	18 32.90	14.00	0.90	IV.	3	36.280	23 26.1	4.9	10.2	18 47.80	13 51.2
4	9.10	. .	. .	. .	0.0	. .	. .	. .	21 0.00	14.01	. .	.	.	. .	. . .	. .	. .	21 (14).	. . .
5	8	. .	. .	32.5	51.5	. .	. .	. .	23 51.59	14.02	0.87	IV.	3	24.703	35 32.3	6.2	13.1	24 6.48	26 1.6
6	7	. .	. .	. .	. .	25.0	. .	. .	25 5.94	14.03	0.95	IV.	3	44.250	15 5.7	6.5	8.2	25 20.92	5 30.4
7	8	. .	. .	. .	55.0	. .	. .	52.0	27 54.91	14.04	0.93	IV.	4	39.960	19 33.4	7.2	9.3	28 9.88	9 59.9
8	7	32.0	51:0	10.0	29.0	. .	. .	. .	31 29.13	14.06	0.92	IV.	3	34.880	24 53.7	8.1	10.5	31 44.11	15 22.3
9	7	17.5	36.5	56.0	15.0	. .	. .	. .	34 14.95	14.07	0.88	IV.	3	22.850	37 28.5	8.6	13.6	34 29.90	28 0.7
10	8	. .	. .	13.0	32.5	. .	. .	. .	35 32.32	14.08	0.89	IV.	3	26.610	33 32.8	8.9	12.7	35 47.29	24 4.4
11	6	58.5	17.0	37.0	56.0	. .	. .	53.0	42 55.78	14.11	0.88	IV.	2	21.566	38 51.1	10.6	13.9	43 10.77	29 25.6
12	7	56.0	. .	34.0	53.5	. .	. .	. .	47 53.38	14.14	0.87	IV.	2	16.365	44 17.2	11.7	15.3	48 8.39	34 54.2
13	8	. .	. .	18.0	37.0	. .	. .	15.0?	52 37.30	14.17	1.01	IV.	5	48.240	10 55.6	12.8	7.1	52 52.48	36 1 25.5
14	8	. .	. .	24.5	44.0	3.0	. .	. .	9 58 43.82	14.21	1.03	IV.	5	52.753	6 12.5	14.1	5.9	9 58 59.06	35 56 42.5
15	7	21.0	40.5	59.5	18.5	. .	. .	16.0	10 1 18.67	14.22	0.89	IV.	2	15.205	45 30.0	14.6	15.5	10 1 33.78	36 36 10.1
16	8	. .	. .	. .	7.0	. .	. .	. .	3 7.00	14.24	1.01	IV.	4	47.590	11 34.4	15.0	7.4	3 22.25	36 2 6.8
17	8	. .	. .	. .	53.0	. .	. .	. .	7 52.97	14.27	0.05	IV.	5	54.870	3 59.7	16.0	5.4	8 8.29	35 54 31.1
18	7	. .	. .	. .	. .	52.0	11.0	30.0	8 32.80	14.28	0.00	V.	4	40.203	19 17.9	16.1	9.2	8 48.08	36 9 53.2
19	6	. .	. .	28.0	47.0	6.0	. .	. .	11 47.00	14.30	0.03	IV.	5	46.350	12 54.2	16.8	7.6	12 2.33	3 28.6
20	9	. .	. .	5.0	. .	. .	. .	. .	14 24.12	14.32	0.96	IV.	3	27.955	32 8.3	17.3	12.3	14 39.40	22 47.9
21	8	18.0	37.0	56.0	15.0	. .	. .	. .	20 15.19	14.36	0.95	IV.	3	23.674	36 36.8	18.5	13.4	20 30.50	27 18.7
22	9	. .	. .	. .	. .	. .	. .	6.0	22 8.80	14.37	1.03	VII.	4	41.570	17 50.8	18.8	8.9	22 24.20	8 28.5
23	6	21.0	40.0	59.5	18.0	. .	. .	. .	27 18.38	14.42	0.93	IV.	2	14.624	46 6.4	19.8	15.7	27 33.73	36 51.9
24	7	. .	. .	9.0?	28.0	47.5	. .	. .	28 28.16	14.43	0.94	IV.	2	16.185	44 28.4	20.0	15.3	28 43.53	35 13.7
25	8	13.0	32.0	. .	. .	. .	. .	. .	37 10.08	14.50	1.08	II.	4	47.291	11 53.4	21.6	7.5	37 25.66	2 32.5
26	6	35.0	. .	. .	. .	. .	10.0	29.0	37 31.95	14.50	1.05	IV.	4	41.507	17 56.5	21.6	8.9	37 47.50	8 37.0
27	8	. .	. .	. .	. .	. .	21.0	40.0	38 42.86	14.51	1.05	VI.	4	40.764	18 42.1	21.8	9.1	38 58.42	9 23.0
28	8	. .	24.0	. .	2.0	. .	. .	. .	44 2.09	14.55	1.06	IV.	4	40.440	19 3.4	22.8	9.2	44 17.70	9 45.4
29	3	31.0	50.0	9.5	28.5	47.5	6.5	25.7	49 28.38	14.60	1.03	IV.	3	30.756	29 12.5	23.7	11.6	49 44.01	36 19 57.8
30	7	. .	. .	39.0	58.0	17.0	. .	. .	10 56 57.98	14.67	1.13	IV.	5	54.530	4 21.0	24.9	5.5	10 57 13.78	35 55 1.4
31	9	. .	. .	. .	30.0	. .	8.0	27.0	11 10 29.85	14.80	1.06	VII.	3	28.600	31 27.2	26.9	12.1	11 10 45.71	36 22 16.2
32	9	. .	2.5	21.6	40.5	. .	. .	. .	18 40.67	14.88	1.06	IV.	3	26.458	33 42.0	28.0	12.7	18 56.61	24 32.7
33	8	. .	. .	. .	. .	. .	13.0	32.0	20 34.82	14.90	1.09	VII.	3	34.950	24 48.6	28.2	10.5	20 50.81	15 37.3
34	10	. .	. .	. .	. .	. .	47.0	. .	29 8.90	14.97	1.12	VI.	3	37.880	21 45.2	29.0	9.8	29 24.99	12 34.0
35	8	4.6	24.0	43.0	. .	21.0	. .	. .	29 2.02	14.99	1.08	IV.	3	26.300	33 52.3	29.3	12.7	29 18.09	24 44.3
36	9	. .	. .	. .	. .	8.5	. .	47.0	31 49.40	15.02	1.04	VII.	1	15.474	45 9.2	29.6	15.5	32 5.46	36 4.3
37	6	46.5	5.5	24.7	43.5	2.5	22.0	41.0	35 43.77	15.06	1.10	V.	3	29.454	30 34.4	30.1	11.9	35 59.93	21 26.4
38	9	25.4	44.6	. .	. .	41.0	. .	. .	43 22.28	15.15	1.17	V.	4	44.026	15 17.8	30.9	8.3	43 38.60	6 7.0
39	10	. .	. .	. .	54.0	. .	. .	. .	52 54.04	15.26	1.06	IV.	2	12.970	47 49.2	31.9	16.1	53 10.36	38 47.2
40	9°	. .	52.0	. .	30.0	. .	. .	. .	11 57 30.25	15.31	1.05	IV.	1	8.890	52 2.3	32.3	17.2	11 57 46.61	43 1.8
41	10	. .	. .	55.0	. .	. .	. .	12.0	12 2 14.40	15.37	1.14	VII.	3	29.390	30 37.7	32.7	11.9	12 2 30.91	21 32.3
42	9	. .	. .	45.0	4.0	. .	. .	. .	12 5 4.10	+15.40	+1.07	IV.	1	10.220	−50 39.2	−33.0	−16.8	12 5 20.57	−36 41 39.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 17,	12	+ 8.564	+ 0.008	+ 0.521	− 0.342	+ 0.246	0 0 1.04	30.008

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 8	April 17,	9 4	75 9 61.4	57.6	64.2	56.7	66.4	63.4	61.62	30.200	61.0	64.5			
		10 38	. .	. .	. .	. .	. .	. .	. .	30.220	61.5	63.5			
		12 5	75 9 61.4	57.6	64.2	56.7	66.4	63.4	61.62	30.222	63.5	61.5			

ZONE 9. APRIL 18. C. $D_0 = -34° 35' 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	4.8	22.7	41.7	0.7	. .	38.2	9 28 41.75	+15.71	+0.31	IV.	3	25.865	−34 19.4	− 0.5	− 6.2	9 28 57.77	−35 9 26.1
2	7	. .	. .	38.0	. .	16.8	. .	53.5	30 57.18	15.72	0.18	IV.	2	10.621	50 17.0	1.1	9.4	31 13.08	25 27.5
3	9	. .	26.0?	57.0?	. .	. .	. .	. .	34 5. .	15.73	0.28	III.	3	20.778	39 38.3	1.9	7.2	34 (20).	14 47.4
4	8	. .	. .	19.5	. .	57.0	15.6	34.5	34 38.06	15.74	0.23	IV.	3	14.646	46 2.9	2.0	8.5	34 54.03	21 13.4
5	8	. .	. .	. .	. .	. .	. .	4.0?	36 7.52	15.74	0.32	VII.	3	25.022	35 11.5	2.4	6.3	36 23.58	10 20.2
6	7.8	. .	. .	4.9	22.8	42.0	0.8	. .	39 23.22	15.76	0.32	IV.	3	25.071	35 9.3	3.3	6.3	39 39.30	10 18.9
7	9	. .	3.2	. .	43.0	. .	19.2	. .	42 41.22	15.78	0.29	IV.	2	19.802	40 41.6	4.1	7.4	42 57.29	15 53.1
8	9	. .	. .	7.0	. .	41.6	. .	20.0	46 22.10	15.80	0.30	IV.	2	19.849	40 38.6	5.0	7.4	46 38.20	35 15 51.0
9	9	. .	. .	. .	. .	35.0	53.0	. .	49 15.87	15.81	0.46	V.	4	39.300	20 14.6	5.7	3.3	49 32.14	34 55 23.6
10	6.7	. .	32.6	. .	10.0	. .	48.0	6.7	52 10.22	15.83	0.36	IV.	3	24.915	35 18.9	6.3	6.4	52 26.41	35 10 31.6
11	9	. .	. .	. .	25.0	44.5	2.8	21.3	53 25.12	15.83	0.29	IV.	3	16.163	44 27.8	6.6	8.2	53 41.24	19 42.6
12	9	. .	. .	40.0	. .	18.5	. .	. .	58 59.22	15.86	0.35	IV.	3	20.829	39 35.2	7.9	7.2	59 15.43	14 50.3
13	9	. .	. .	. .	. .	. .	. .	55.0	9 58 58.58	15.86	0.43	VII.	3	31.035	28 54.3	7.9	5.0	9 59 14.87	4 7.2
14	9	. .	. .	. .	. .	. .	17.3	36.0	10 0 39.69	15.87	0.45	VI.	3	33.579	26 15.2	8.2	4.5	10 0 56.01	1 27.9
15	7	. .	. .	29.0	48.0	6.7	25.1	44.0	2 47.75	15.89	0.40	IV.	3	27.949	32 8.7	8.6	5.7	3 4.04	7 23.0
16	9	. .	37.0	56.0	. .	. .	. .	. .	6 14.79	15.91	0.31	III.	2	16.112	44 33.0	9.4	8.2	6 31.01	35 19 50.6
17	9	. .	2.8	22.0	41.0	. .	18.5	. .	8 40.80	15.93	0.60	IV.	4	50.056	8 59.6	9.9	1.1	8 57.33	34 44 10.6
18	8	. .	. .	22.0	40.5	59.2	18.2	36.6	11 40.52	15.95	0.48	IV.	3	34.369	25 26.0	10.5	4.3	11 56.95	35 0 40.8
19	9	. .	42.0	1.0	. .	48.7	. .	. .	17 19.76	15.98	0.55	IV.	3	41.341	18 8.4	11.5	2.9	17 36.29	34 53 22.8
20	7.8	. .	37.0?	. .	15.7	35.2	. .	12.7	21 15.96	16.01	0.29	IV.	2	9.031	51 56.4	12.3	9.8	21 32.26	35 27 18.5
21	8	. .	49.7	8.6	. .	46.7	. .	. .	26 27.55	16.05	0.38	IV.	3	18.162	42 22.5	13.2	7.8	26 43.98	35 17 43.5
22	7	. .	. .	18.0	36.5	55.0	14.5	32.7	30 36.58	16.08	0.56	IV.	3	38.342	21 16.7	13.9	3.5	30 53.22	34 56 34.1
23	7.8	. .	7.0	25.5	44.2	. .	22.0	41.0	33 44.45	16.10	0.56	IV.	3	37.324	22 20.6	14.5	3.7	34 1.11	57 38.8
24	7	. .	55.0	14.0	32.2	41.2	. .	19.2	34 32.58	16.11	0.57	IV.	3	38.011	21 37.3	14.6	3.6	34 49.26	34 56 55.5
25	8.9	. .	12.0	30.2	49.3	. .	27.0	46.0	39 49.38	16.15	0.40	IV.	2	17.505	43 5.8	15.5	7.9	40 5.93	35 18 29.2
26	8.9	. .	. .	25.0	44.2	. .	. .	. .	40 44.04	16.16	0.40	IV.	3	15.839	44 48.1	15.6	8.3	41 0.60	20 12.0
27	8	. .	. .	34.0	. .	12.0	. .	48.7	42 52.77	16.17	0.55	IV.	3	34.432	25 22.1	16.0	4.3	43 9.49	35 0 42.4
28	9	. .	. .	. .	. .	. .	17.5	35.5	43 39.54	16.18	0.57	VI.	3	35.954	23 46.0	16.1	4.0	43 56.29	34 59 6.1
29	7	. .	. .	. .	46.2	5.0	23.5	42.5	45 46.21	16.20	0.72	VI.	4	52.641	6 16.4	16.5	0.6	46 3.13	41 33.5
30	9	. .	. .	. .	. .	. .	40.0	59.4	48 2.91	16.22	0.73	VI.	4	52.334	6 35.9	16.8	0.6	48 19.86	41 53.3
31	9	. .	. .	. .	. .	. .	10.2	29.0	50 32.75	16.24	0.66	VI.	3	44.256	15 5.0	17.2	2.3	50 49.65	50 24.5
32	9	. .	17.0	. .	. .	13.0	. .	. .	50 54.40	16.24	0.65	IV.	3	42.630	16 47.3	17.2	2.6	51 11.29	52 7.1
33	9	. .	. .	. .	. .	50.0	. .	27.7	53 31.36	16.26	0.71	V.	3	49.100	10 1.1	17.6	1.3	53 48.33	45 20.0
34	9	17.5?	. .	. .	. .	. .	. .	. .	56 13.69	16.29	0.67	I.	3	43.844	15 30.1	18.0	2.1	56 30.65	50 50.5
35	5.6	. .	55.0	14.0	32.8	. .	10.6	29.2	10 57 32.83	16.30	0.60	IV.	3	35.311	24 26.9	18.2	4.1	10 57 49.73	34 59 49.2
36	9	. .	19.8	38.0	42.0	. .	. .	41.2	11 2 43. .	16.34	0.48	IV.	2	18.981	41 33.1	18.9	7.6	11 2 (59)	35 16 59.6
37	9	. .	. .	. .	. .	. .	. .	36.0	2 39.21	16.34	0.53	VII.	2	24.381	35 53.6	18.9	6.4	2 56.08	11 18.9
38	9	18.2	. .	. .	14.7	. .	52.8	. .	7 14.87	16.38	0.49	IV.	2	18.208	42 21.7	19.5	7.7	7 31.74	35 17 48.9
39	9	. .	. .	. .	. .	27.0	. .	. .	8 8.25	16.39	0.78	V.	4	52.544	6 23.1	19.6	0.6	8 25.42	34 41 43.3
40	7.8	14.7	33.0	52.0	. .	. .	29.0	48.2	12 51.80	16.44	0.53	IV.	3	21.046	39 21.6	20.3	7.2	13 8.77	35 14 49.1
41	7.8	. .	0.1	. .	38.0	. .	. .	15.0	13 37.75	16.44	0.79	IV.	4	52.072	6 53.1	20.3	0.7	13 54.98	34 42 14.1
42	6.7	. .	. .	. .	. .	. .	. .	38.0	15 41.41	16.46	0.48	V.	1	15.569	45 4.0	20.6	8.3	15 58.35	35 20 32.9
43	7	. .	. .	38.0	57.2	16.0	34.2	53.2	17 56.89	16.48	0.54	IV.	2	21.469	38 57.3	20.8	7.1	18 13.91	35 14 25.2
44	9	. .	43.0	1.2	. .	39.0	57.5	16.5	20 20.23	16.50	0.80	IV.	4	50.884	8 7.5	21.2	0.9	20 37.53	34 43 29.6
45	9	. .	58.0	. .	35.7	. .	13.0	. .	23 35.61	16.54	0.75	IV.	4	45.402	13 51.9	21.5	2.1	23 52.90	34 49 15.5
46	7	. .	37.2	56.8	. .	34.2	53.5	. .	25 15.41	16.55	0.50	IV.	3	13.471	47 16.6	21.7	8.8	25 32.46	35 22 47.1
47	8.9	. .	. .	. .	23.5	42.8	. .	1.2	26 23.31	16.56	0.50	IV.	3	13.761	46 58.2	21.8	8.7	26 40.37	22 28.7
48	8	. .	16.8	35.5	54.3	. .	32.1	51.2	11 28 54.46	+16.59	+0.55	IV.	3	18.529	−41 59.6	−22.1	− 7.7	11 29 11.60	−35 17 29.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 18,	12	+ 9.100	+ 0.009	+ 0.521	− 0.342	+ 0.246	0 0 2.02	30.006

REMARKS.

April 18. Cloudy near horizon; lamp flaring badly at times, rendering transits of small stars doubtful.

(9) 36. Transits discordant.

(9) 41.47. Transits over T. VI assumed as recorded over T. VII.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 9	April 18,	9 28	73 54 60.4	57.1	61.4	58.9	59.8	55.8	58.90	30.076	67.2	70.0	69.4	65.4	61.3
		10 6	. . . .	. .	. .	. .	. .	. .	. .	. .	. .	67.6			
		10 15	73 54 60.9	67.4	61.9	69.3	60.3	65.0	59.13	. .	. .	. .	69	66	
		10 30	. . . .	. .	. .	. .	. .	. .	. .	30.088	68.8	67.6			
		11 2	. . . .	. .	. .	. .	. .	. .	. .	. .	. .	67.6			
		11 28	60.6	67.0	61.1	69.0	60.1	66.1	58.98	30.082	69.0	67.5	68.4	66.4	62.0

ZONE 10. APRIL 20. P. $D_0 = -33° 19' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	13.0	. .	50.0	8.5	. .	. .	. .	9 39 8.57	+16.16	−0.02	IV.	3	22.540	−37 48.0	− 7.2	− 6.9	9 39 24.71	−33 57 52.1
2	9	. .	31.0	. .	14.0	. .	. .	. .	42 14.00	16.17	+0.13	IV.	4	42.600	16 47.7	7.8	3.1	42 30.30	36 48.6
3	8	. .	. .	. .	19.0	. .	. .	. .	43 19.06	16.18	0.04	IV.	3	28.490	31 34.9	8.1	5.8	43 35.28	51 38.8
4	9	. .	. .	. .	37.0	. .	. .	. .	46 37.05	16.20	0.05	IV.	3	27.810	32 17.4	8.8	5.9	46 53.30	52 22.1
5	8	. .	. .	. .	8.0	. .	. .	3.0	49 7.75	16.21	+0.08	IV.	3	33.800	26 1.5	9.4	4.8	49 24.04	33 46 5.7
6	7	. .	. .	. .	. .	32.0	51.0	9.5	50 13.70	16.21	−0.04	V.	2	18.960	41 34.2	9.6	7.6	50 29.87	34 1 41.4
7	7	27.0	46.0	4.0	22.0	. .	. .	. .	54 22.56	16.23	+0.04	IV.	3	25.625	34 34.5	10.5	6.3	54 38.83	33 54 41.3
8	6	. .	. .	41.0	. .	. .	36.0	55.0	54 59.31	16.24	0.10	IV.	3	33.810	26 0.9	10.6	4.8	55 15.65	46 6.3
9	7	57.0	. .	35.0	. .	. .	. .	. .	57 53.02	16.25	+0.06	III.	3	28.040	32 3.0	11.2	5.9	58 9.33	33 52 10.1
10	6	. .	. .	. .	37.5	56.0	14.0	33.0	9 58 37.23	16.25	−0.07	V.	2	11.690	49 9.8	11.4	9.1	9 58 53.41	34 9 20.3
11	8	10.0	29.0	47.0	. .	. .	. .	. .	10 2 5.86	16.27	−0.09	III.	1	9.315	51 35.9	12.2	9.5	10 2 22.04	34 11 47.6
12	8	. .	. .	. .	. .	. .	41.0	0.0	2 4.25	16.27	+0.13	VI.	3	36.407	23 17.8	12.1	4.3	2 20.65	33 43 24.2
13	8	58.0	16.0	35.0	. .	. .	. .	. .	4 53.28	16.29	+0.20	III.	3	43.800	15 33.7	12.7	2.9	5 9.77	33 35 39.5
14	8	. .	. .	. .	. .	. .	8.0	27.0	4 31.09	16.29	0.00	IV.	2	17.630	42 57.9	12.6	7.9	4 47.38	34 3 8.4
15	6	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	IV.	4	43.800	15 32.2	13.	2.9	(6)	33 35 (38)
16	8	. .	. .	43.0	. .	. .	. .	. .	8 1.56	16.31	−0.06	III.	1	9.210	51 42.5	13.3	9.6	8 17.81	34 11 55.4
17	8	. .	. .	. .	. .	2.0	21.0	. .	8 43.74	16.31	+0.13	V.	3	34.340	25 27.8	13.5	4.7	8 0.18	33 45 35.0
18	8	. .	. .	. .	. .	. .	5.0	. .	9 28.01	16.32	0.12	VI.	3	33.100	26 45.2	13.7	4.9	9 44.45	46 53.8
19	7	. .	. .	. .	. .	45.0	3.0	. .	10 26.28	16.32	0.18	V.	3	39.650	19 54.4	13.9	3.7	10 42.78	40 2.0
20	7	. .	37.0	55.0	13.5	. .	. .	. .	12 13.72	16.33	0.09	IV.	3	28.220	31 51.8	14.2	5.8	12 30.14	52 1.8
21	8	. .	. .	. .	. .	47.0	. .	. .	11 28.50	16.33	0.19	V.	4	39.600	19 55.5	14.0	3.7	11 45.02	40 3.2
22	8	. .	. .	. .	. .	27.0	45.0	. .	13 8.24	16.34	0.14	V.	4	34.280	25 29.7	14.4	4.7	13 24.72	33 45 38.8
23	8	. .	. .	. .	. .	. .	47.5	6.0	14 10.36	16.34	0.02	VI.	3	18.595	41 55.1	14.6	7.7	14 26.72	34 2 7.4
24	8	. .	. .	. .	. .	58.0	. .	34.0	16 39.07	16.36	0.24	V.	4	48.490	10 37.6	15.1	2.0	16 55.67	33 30 44.7
25	8	37.0	. .	15.0	. .	. .	10.0	. .	20 33.02	16.38	0.07	IV.	3	24.110	36 9.5	15.8	6.6	20 49.47	56 21.9
26	8	38.0	. .	16.0	. .	. .	. .	. .	20 34.02	16.38	0.12	III.	3	30.440	29 32.5	15.8	5.4	20 50.52	49 43.7
27	6	. .	. .	. .	. .	5.0	23.0	. .	20 46.29	16.38	0.21	V.	4	41.540	17 53.9	15.9	3.3	21 2.88	38 3.1
28	8	. .	. .	. .	. .	. .	56.0	. .	21 19.13	16.39	0.26	V.	5	47.750	11 26.4	16.0	2.2	21 35.78	31 34.6
29	8	. .	. .	. .	. .	. .	. .	52.0	21 56.56	16.39	0.24	VII.	5	44.890	14 25.8	16.1	2.7	22 13.19	34 34.6
30	7	. .	19.0	38.0	. .	. .	. .	. .	24 56.25	16.41	+0.23	III.	4	42.180	17 14.4	16.6	3.2	25 12.89	33 37 24.2
31	9	. .	14.0	. .	. .	. .	. .	. .	25 51.25	16.42	−0.04	II.	1	8.800	52 7.7	16.8	9.6	26 7.63	34 12 24.1
32	9	. .	. .	. .	. .	39.0	. .	. .	28 20.37	16.43	+0.02	V.	2	14.710	46 0.7	17.3	8.4	28 36.82	34 6 16.4
33	7	. .	. .	. .	54.0	12.0	. .	. .	29 53.74	16.44	0.10	IV.	3	25.200	35 1.3	17.6	6.4	30 10.28	33 55 15.3
34	8	58.0	. .	35.0	. .	. .	. .	. .	31 53.57	16.46	0.10	III.	3	22.890	37 25.9	18.0	6.9	32 10.13	57 40.8
35	8	. .	. .	. .	. .	. .	12.0	31.0	31 35.26	16.46	+0.21	VI.	4	37.30	22 19.7	17.9	4.1	31 51.93	33 42 31.7
36	7	4.0	22.0	. .	. .	. .	. .	. .	31 59.52	16.46	−0.02	II.	1	8.185	52 46.4	18.	9.8	32 15.96	34 13 (4.)
37	8	. .	42.0	. .	19.0	. .	. .	. .	37 18.99	16.49	+0.30	IV.	5	50.780	8 16.3	18.9	1.8	37 35.78	33 28 27.0
38	7	. .	29.0	. .	. .	. .	. .	. .	39 6.13	16.51	0.09	II.	2	20.390	40 4.7	19.3	7.3	39 22.73	34 0 21.3
39	7	52.0	11.0	30.0	. .	. .	. .	. .	39 48.02	16.51	0.15	III.	3	28.300	31 46.8	19.4	5.8	40 14.68	33 52 2.0
40	7	. .	. .	. .	43.0	. .	19.0	. .	40 42.52	16.52	0.18	IV.	3	31.750	28 10.2	19.5	5.2	40 59.22	33 48 24.9
41	8	. .	. .	11.0	. .	. .	. .	. .	42 29.56	16.53	0.03	III.	1	11.940	48 51.4	19.8	9.0	42 46.12	34 9 10.2
42	7	. .	. .	. .	29.0	. .	. .	. .	43 29.02	16.54	0.23	IV.	3	37.400	22 15.8	20.0	4.1	43 45.79	33 42 29.9
43	7	. .	. .	. .	17.0	36.0	. .	. .	44 17.25	16.54	0.21	IV.	3	35.420	24 20.1	20.1	4.5	44 34.00	44 34.7
44	6	44.0	2.5	21.0	. .	. .	. .	. .	46 39.49	16.56	0.23	III.	3	36.930	22 45.1	20.6	4.2	46 56.28	33 42 59.9
45	7	. .	. .	. .	. .	20.0	38.0	. .	47 1.08	16.57	0.03	V.	1	11.220	49 36.5	20.6	9.2	47 17.68	34 9 56.3
46	7	. .	. .	55.5	. .	32.0	. .	. .	49 13.75	16.58	0.21	IV.	3	34.140	25 40.3	21.0	4.7	49 30.54	33 45 56.0
47	7	42.0	0.0	. .	. .	. .	. .	. .	51 37.20	16.60	0.25	II.	3	38.180	21 26.3	21.1	3.9	51 54.05	41 41.6
48	7	45.0	4.0	. .	. .	. .	. .	. .	51 40.78	16.60	0.20	IV.	3	30.800	29 9.8	21.4	5.3	51 57.58	49 26.5
49	8	. .	. .	. .	. .	. .	23.0	41.0	10 51 45.84	+16.60	+0.31	VI.	4	45.550	−13 41.6	−21.4	− 2.6	10 52 2.75	−33 33 55.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 20,	12	+ 9.353	+ 0.008	+ 0.521	− 0.342	+ 0.246	0 0 2.10	30.005

REMARKS.

April 20. Readings of Bar. and Thers., opposite (309) made at $9^h 20^m$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 10	April 20,	9 30	72 39 64.0	63.0	66.5	64.3	62.4	57.0	62.87	30.340	66.0	60.0			
		10 29	. . . . .	. .	. .	. .	. .	. .	. .	30.332	64.4	58.5			
		11 44	. . . . .	. .	. .	. .	. .	. .	. .	30.304	62.0	55.1			
		12 43	72 39 64.4	63.0	66.5	64.3	62.4	57.0	62.93	30.286	60.6	54.2			

ZONE 10. APRIL 20. P. $D_0 = -33° 19' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	. .	24.0	42.5	10 51 47.12	+16.60	+0.33	VI.	5	49.020	−10 6.7	−21.4	− 1.9	10 52 4.05	−33 30 20.0
51	9	. .	51.0	. .	. .	. .	. .	. .	58 28.01	16.65	0.34	II.	5	52.710	6 15.2	22.5	1.3	58 45.00	33 26 29.0
52	8	. .	. .	. .	. .	. .	. .	46.0	10 58 50.28	16.66	0.11	IV.	2	16.955	43 40.0	22.5	8.0	10 59 7.05	34 4 0.5
53	.	. .	. .	1.0	. .	. .	. .	. .	11 1 19. .	16.68	. .	.	.	. .	. . .	. .	. .	11 1 (35.)	
54	9	. .	. .	. .	. .	. .	. .	35.0	1 39.47	16.68	0.26	VII.	3	35.610	24 7.4	23.0	4.4	1 56.41	33 44 24.8
55	7	26.0	45.0	3.5	. .	. .	. .	. .	4 21.94	16.70	0.14	III.	2	20.580	39 53.0	23.4	7.3	4 38.78	34 0 13.7
56	7	. .	. .	4.0	22.0	. .	. .	. .	4 22.25	16.70	0.32	IV.	3	44.270	15 4.5	23.4	2.8	4 39.27	33 35 20.7
57	7	. .	8.0	27.0	45.0	. .	. .	. .	6 45.21	16.72	0.23	IV.	3	31.300	28 38.6	23.8	5.2	7 2.16	33 48 57.6
58	7	. .	. .	. .	. .	. .	32.0	. .	6 54.84	16.72	0.07	VI.	1	11.325	49 29.6	23.8	9.1	7 11.63	34 9 52.5
59	6	. .	13.0	31.5	50.5	. .	. .	46.0	8 50.26	16.74	0.22	IV.	3	29.330	30 42.2	24.1	5.6	9 7.22	33 51 1.9
60	6	13.0	32.0	51.0	9.0	. .	46.0	4.0	10 8.93	16.75	0.19	IV.	3	25.420	34 47.5	24.2	6.1	10 25.87	55 8.1
61	8	. .	41.0	. .	. .	. .	. .	. .	14 18.02	16.79	0.41	II.	5	53.120	5 49.	24.8	1.0	14 35.22	26 (5.)
62	7	. .	. .	. .	21.0	. .	. .	. .	15 21.06	16.79	0.23	IV.	3	29.845	30 9.7	25.0	5.5	15 38.08	50 30.2
63	7	. .	2.5	21.0	39.5	. .	. .	. .	16 39.55	16.81	0.24	IV.	3	29.660	30 21.4	25.1	5.6	16 56.60	50 42.1
64	6	. .	. .	. .	. .	14.5	33.0	51.0	16 55.94	16.81	0.40	V.	5	51.400	7 37.4	25.1	2.2	17 13.15	33 27 54.7
65	7	. .	. .	. .	49.0	. .	. .	. .	18 49.04	16.82	0.09	IV.	1	9.950	50 55.9	25.1	9.4	19 5.95	34 11 20.7
66	8	. .	9.0	. .	46.0	. .	. .	. .	23 46.00	16.87	0.40	IV.	5	48.730	10 24.9	26.1	1.7	24 3.27	33 30 42.7
67	8	. .	56.0	. .	33.0	. .	. .	. .	25 33.07	16.89	0.21	IV.	3	24.320	35 56.5	26.3	6.6	25 50.17	33 56 19.4
68	8	. .	. .	. .	27.0	. .	. .	24.0	24 27.68	16.88	0.18	VII.	3	19.655	40 46.3	26.2	7.5	24 44.74	34 1 10.0
69	7	. .	. .	49.0	. .	26.0	. .	. .	29 7.49	16.92	0.21	IV.	3	23.240	37 4.2	26.7	6.8	29 24.62	33 57 27.7
70	7	. .	. .	. .	. .	. .	. .	. .	29 . .	. .	. .	. . .	3	33.190	26 40.	27.	4.9	29	47 (2.)
71	7	. .	. .	. .	. .	. .	35.0	53.0	28 57.70	16.92	0.28	VI.	3	31.000	28 56.9	26.7	5.3	29 14.90	49 18.9
72	8	. .	. .	. .	. .	6.0	24.0	. .	30 47.37	16.93	0.46	VI.	5	55.280	3 33.9	27.0	0.6	31 4.76	23 51.5
73	5	. .	. .	11.0	29.0	. .	. .	. .	32 29.30	16.95	0.24	IV.	3	25.755	34 26.3	27.1	6.3	32 46.49	54 49.7
74	7	. .	. .	14.0	33.0	. .	. .	. .	33 32.75	16.96	0.34	IV.	4	39.780	19 44.7	27.3	3.6	33 50.05	40 5.6
75	8	. .	. .	. .	. .	. .	26.0	. .	33 49.03	16.96	0.34	IV.	4	36.710	22 57.4	27.3	4.2	34 6.33	43 18.9
76	8	. .	52.0	. .	29.0	. .	. .	. .	36 29.00	16.99	0.37	IV.	5	41.570	17 54.1	27.6	3.2	36 46.36	38 14.9
77	8	. .	. .	. .	. .	50.0	. .	. .	37 31.40	17.00	0.23	V.	3	22.110	38 15.0	27.7	7.0	37 48.63	58 39.7
78	6	. .	. .	. .	. .	52.5	10.5	29.0	38 33.58	17.01	0.25	V.	3	25.470	34 44.3	27.8	6.1	38 50.84	55 8.5
79	8	. .	. .	. .	. .	. .	. .	44.5	39 49.03	17.02	0.38	VII.	4	42.670	16 41.7	27.9	3.1	40 6.43	33 37 2.7
80	8	. .	0.0	. .	. .	. .	. .	. .	44 37.20	17.06	0.16	II.	1	12.020	48 46.1	28.4	9.0	44 54.42	34 9 13.5
81	6	. .	. .	17.5	36.0	. .	. .	. .	45 36.05	17.07	0.12	IV.	1	7.610	53 22.5	28.5	9.9	45 53.24	34 13 50.9
82	8	. .	. .	. .	. .	. .	51.0	10.0	46 14.20	17.08	0.32	VI.	3	31.150	28 47.6	28.6	5.3	46 31.60	33 49 11.5
83	8	. .	7.5	26.0	. .	. .	. .	. .	47 44.52	17.10	0.34	III.	3	34.310	25 29.7	28.7	4.7	48 1.96	33 45 53.1
84	8	. .	. .	. .	12.0	. .	. .	. .	49 12.05	17.11	0.21	IV.	2	17.140	43 28.6	28.9	8.0	49 29.37	34 3 55.5
85	8	. .	. .	10.0	. .	. .	. .	. .	52 28.51	17.14	0.28	III.	3	24.365	35 53.6	29.1	6.6	52 45.93	33 56 19.3
86	6	. .	14.0	33.0	51.5	. .	. .	. .	53 51.38	17 16	0.32	IV.	3	31.400	28 32.3	29.3	5.2	54 8.86	48 56.8
87	7	. .	. .	. .	48.0	. .	. .	. .	54 48.02	17.17	0.37	IV.	3	37.360	22 18.3	29.3	4.1	55 5.56	42 41.7
88	7	. .	. .	36.0	54.0	. .	. .	. .	55 54.30	17.18	0.26	IV.	2	22.410	37 58.3	29.4	7.0	56 11.74	58 24.7
89	7	. .	. .	. .	52.0	10.5	. .	. .	56 51.99	17.19	0.28	IV.	2	24.120	36 10.9	29.5	6.6	57 9.46	56 37.0
90	8	. .	. .	. .	. .	34.0	53.0	. .	11 58 15.79	17.20	0.42	V.	4	41.590	17 50.7	29.6	3.3	11 58 33.41	38 13.6
91	6	. .	42.0	0.5	19.0	38.0	. .	. .	12 0 19.14	17.22	0.33	IV.	E W	30.004	29 59.7	29.8	5.5	12 0 36.69	50 25.0
92	6	5.0	24.0	42.5	1.0	. .	. .	. .	2 0.92	17.24	0.31	IV.	3	28.355	31 43.4	29.9	5.8	2 18.47	52 9.1
93	8	. .	. .	. .	. .	. .	2.0	. .	2 25.01	17.24	0.36	VI.	3	34.190	25 36.9	29.9	4.7	2 42.61	46 1.5
94	8	. .	. .	. .	19.0	. .	56.0	. .	4 19.06	17.26	0.52	VI.	5	52.390	6 35.2	30.1	1.1	4 36.84	26 56.4
95	8	17.0	35.0	54.0	. .	. .	. .	. .	8 12.23	17.30	0.54	III.	5	54.270	5 40.0	30.3	0.8	8 30.07	26 1.1
96	8	. .	46.0	. .	23.0	. .	. .	. .	9 23.00	17.31	0.43	IV.	4	39.660	19 52.3	30.4	3.7	9 40.74	40 16.4
97	8	. .	30.5	. .	8.0	. .	. .	. .	15 7.75	17.38	0.48	IV.	5	45.060	14 15.1	30.7	2.5	15 25.61	34 38.3
98	8	. .	10.0	29.0	47.5	. .	. .	. .	12 16 47.32	+17.39	+0.51	IV.	5	49.220	− 9 54.1	−30.9	− 1.7	12 17 5.22	−33 30 16.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(10) 56. Min. of T. 1 smaller than Transit Z., April 20.

(10) 95. Micrometer reading assumed as 53.270 instead of 54.270.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 10. APRIL 20. P. $D_\circ = -33° 19' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	8	. .	. .	. .	. .	. .	52.0	. .	12 17 15.17	+17.40	+0.54	VI.	5	52.680	− 6 17.1	−30.9	− 1.0	12 17 33.11	−33 26 39.0
100	8	. .	. .	. .	. .	9.0	. .	47.0	18 50.79	17.41	0.24	V.	1	12.790	47 58.0	31.0	8.8	19 8.44	34 8 27.8
101	6	. .	. .	36.0	54.5	. .	. .	. .	20 54.55	17.44	0.31	IV.	2	20.735	39 43.1	31.0	7.3	21 12.30	34 0 11.4
102	7	. .	. .	32.0	51.0	. .	. .	. .	21 50.80	17.45	0.33	IV.	2	22.600	37 46.3	31.1	6.9	22 8.58	33 58 14.3
103	8	. .	. .	. .	. .	. .	. .	45.0	21 49.50	17.45	0.45	VII.	3	39.750	19 47.4	31.1	3.7	22 7.40	40 12.2
104	7	10.5	28.5	47.5	4.0	. .	. .	. .	25 5.91	17.48	0.38	IV.	3	30.350	29 38.2	31.2	5.4	25 23.77	50 4.8
105	8	. .	. .	. .	. .	41.0	. .	. .	26 22.43	17.50	0.36	V.	3	26.180	33 59.7	31.3	6.2	26 40.29	33 54 27.2
106	8	. .	. .	. .	19.0	. .	56.0	. .	27 18.98	17.51	0.30	IV.	3	18.900	41 36.1	31.3	7.6	27 36.79	34 2 5.0
107	8	. .	. .	. .	. .	. .	33.0	. .	28 55.79	17.52	0.21	IV.	1	5.750	55 18.9	31.4	10.2	29 13.52	34 15 50.5
108	9	30.5	49.0	7.5	. .	. .	. .	. .	34 26.00	17.54	0.45	III.	3	35.090	24 40.6	31.5	4.5	34 43.99	33 45 6.6
109	9	. .	. .	. .	. .	. .	7.0	. .	34 29.91	17.59	0.33	VI.	2	19.130	41 23.2	31.6	7.6	34 47.83	34 1 52.4
110	9	46.5	5.0	23.5	. .	. .	. .	. .	38 42.05	17.63	0.40	IV.	3	27.135	32 59.8	31.7	6.1	39 0.08	33 53 27.6
111	9	42.0	9.0	. .	. .	. .	. .	. .	40 46.00	17.66	0.46	IV.	3	36.255	23 27.6	31.7	4.3	41 4.12	53 53.6
112	7	. .	. .	48.0	6.5	25.5	. .	. .	41 6.67	17.66	0.37	IV.	2	22.475	37 54.2	31.7	6.9	41 24.70	58 22.8
113	9	. .	. .	. .	. .	. .	6.0	25.0	41 29.38	17.66	0.58	VII.	4	50.215	8 48.2	31.7	1.7	41 47.62	33 29 11.6
114	6	. .	. .	. .	30.0	48.5	7.0	. .	12 43 29.88	+17.69	+0.24	IV.	1	5.630	−55 26.5	−31.8	−10.3	12 43 47.81	−34 15 58.6

ZONE 11. APRIL 27. P. $D_\circ = -31° 59' 40''$.

1	.	. .	. .	40.0	58.0	. .	. .	. .	9 50 58.17	+15.90	+2.00	IV.	3	26.630	−33 31.5	− 0.3	− 6.9	9 51 16.07	−32 33 18.7
2	9	. .	. .	55.0	. .	32.0	. .	. .	54 13.49	15.91	1.96	V.	4	35.650	24 3.7	0.9	5.4	54 31.36	23 50.0
3	6	. .	53.0	11.0	30.0	. .	. .	. .	56 29.63	15.92	1.96	IV.	3	28.948	31 6.0	1.4	6.5	56 47.51	30 53.9
4	6	45.0	3.0	21.5	39.5	. .	. .	. .	9 58 40.72	15.93	1.94	IV.	2	20.443	40 1.6	1.8	8.0	9 58 58.59	39 51.4
5	9	44.0	4.0	. .	42.0	. .	. .	. .	10 0 40.	15.94	1.92	IV.	3	28.850	31 12.1	2.2	6.5	10 0 (57.)?	31 0.8
6	7	. .	. .	36.0	. .	. .	. .	. .	1 54.22	15.95	1.89	III.	5	50.400	8 40.1	2.4	2.8	2 12.06	8 25.3
7	7	. .	. .	. .	10.0	. .	. .	. .	2 10.00	15.95	1.88	IV.	4	44.750	14 32.6	2.5	3.8	2 27.83	14 18.9
8	7	. .	. .	. .	. .	54.0	. .	. .	2 35.78	15.95	1.87	V.	5	51.850	7 9.1	2.5	2.5	2 53.60	6 54.1
9	9	. .	. .	. .	. .	. .	. .	56.0	3 1.28	15.95	1.87	VII.	4	42.660	16 42.4	2.7	4.2	3 19.10	16 29.3
10	6	35.0	53.5	11.5	29.5	. .	. .	. .	6 29.73	15.97	1.84	IV.	4	41.620	17 49.2	3.3	4.3	6 47.54	17 36.8
11	8	10.0	28.5	47.0	. .	. .	. .	. .	8 5.07	15.98	1.86	III.	3	20.900	39 30.6	3.6	8.0	8 22.91	39 22.2
12	9	. .	. .	. .	. .	0.0	. .	36.0	8 41.41	15.98	1.84	VII.	3	27.880	32 13.8	3.8	6.7	8 59.23	32 4.3
13	8	56.0	. .	33.0	. .	. .	. .	. .	11 51.03	16.00	1.81	III.	E W	30.006	. . .	4.3	6.3	12 8.84	29 50.2
14	8	0.0	. .	37.0	. .	. .	. .	. .	11 55.02	16.00	1.81	III.	3	31.965	27 56.6	4.3	6.0	12 12.83	27 46.9
15	6	. .	35.0	53.0	11.5	. .	. .	. .	13 11.41	16.01	1.79	IV.	3	36.890	22 47.6	4.6	5.2	13 29.21	22 37.4
16	7	41.0	59.0	17.5	35.5	. .	. .	. .	17 35.74	16.03	1.77	IV.	2	16.690	43 56.7	5.4	8.7	17 53.54	43 50.8
17	7	27.5	46.0	4.5	. .	. .	. .	. .	22 22.60	16.06	1.73	III.	2	21.783	38 37.4	6.3	7.8	22 40.39	38 31.5
18	7	. .	. .	. .	31.0	49.0	. .	. .	24 30.88	16.07	1.67	IV.	4	41.463	17 59.2	6.6	4.1	24 48.62	17 50.2
19	8	. .	. .	. .	. .	0.5	. .	37.0	25 42.14	16.08	1.70	VII.	3	24.240	36 0.9	6.8	7.3	25 59.92	35 55.0
20	7	30.5	49.0	7.5	25.5	. .	. .	. .	29 25.54	16.10	1.65	IV.	3	30.160	29 50.1	7.5	6.1	29 43.29	29 43.7
21	7	46.0	4.0	22.5	41.0	. .	. .	. .	32 40.90	16.12	1.64	IV.	1	10.850	49 59.6	8.0	9.7	32 58.66	49 57.3
22	9	. .	. .	. .	9.0	. .	. .	. .	39 9.05	16.16	1.55	IV.	3	27.840	32 15.5	9.1	6.7	39 26.76	32 11.3
23	.	. .	. .	. .	. .	. .	. .	. .	. . .	16.16									
24	9	. .	. .	. .	31.0	. .	7.0	. .	47 30.77	16.22	1.46	VI.	3	35.640	24 5.9	10.4	5.4	47 48.45	24 1.7
25	6	15.0	34.0	52.0	. .	. .	46.0	. .	52 9.98	16.25	1.40	IV.	4	42.920	16 27.5	11.2	4.1	52 27.63	16 22.8
26	8	17.0	36.0	54.0	. .	. .	48.0	. .	52 11.98	16.25	1.40	IV.	4	44.625	14 40.5	11.2	3.8	52 29.63	14 35.5
27	7	33.0	. .	10.0	28.0	. .	. .	. .	56 28.08	16.28	1.40	IV.	3	22.170	38 11.3	11.8	7.7	10 56 45.76	38 10.8
28	6	51.0	9.0	28.0	45.5	. .	. .	. .	10 59 45.87	16.30	1.39	IV.	2	16.060	44 36.2	12.3	8.8	11 0 3.56	44 37.3
29	7	. .	. .	. .	. .	. .	. .	26.0	11 7 31.17	+16.36	+1.31	VII.	3	29.860	−30 8.2	−13.4	− 6.1	11 7 48.84	−32 30 8.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
April 27,	12	+ 11.051	+ 0.028	+ 0.521	− 0.342	+ 0.246	0 0 2.01	30.006

REMARKS.

April 27. Some stars may have been obscured by the light barely visible clouds.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 11	April 27, 9 50	. . .	. .	. .	. .	. .	. .	. .	29.914	62.0	57.5			
	10 52	. . .	. .	. .	. .	. .	. .	. .	29.914	61.2	57.0			
	11 30	. . .	. .	. .	. .	. .	. .	. .	29.910	60.0	54.2			
	11 58	71 19 60.6	59.2	64.2	61.2	59.2	52.5	59.48	29.912	60.0	53.0	62.0	62.0	60.0

ZONE 11. APRIL 27. P. $D_0 = -31° 59' 40''$.—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
30	7	. .	. .	. .	5.0	24.0	42.0	. .	11 9 5.36	+16.37	+1.30	V.	2	17.787	−42 47.8	−13.6	− 8.6	11 9 23.03	−32 42 50.0
31	7	21.0	40.0	57.5	16.0	. .	52.5	10.7	14 15.91	16.41	1.24	IV.	3	31.140	28 48.6	14.4	6.1	14 33.56	28 49.1
32	9	50.0	. .	28.3	47.0	. .	. .	. .	21 46.72	16.47	1.15	IV.	3	38.593	21 0.8	15.4	1.9	22 4.34	21 1.1
33	7	. .	. .	36.5	54.5	13.0	. .	. .	24 54.66	16.49	1.11	IV.	5	51.775	7 13.8	15.8	2.5	25 12.26	7 12.1
34	6	56.0	14.3	32.7	51.0	. .	. .	. .	28 51.00	16.52	1.13	IV.	2	16.400	44 15.1	16.4	8.7	29 8.65	44 20.2
35	7	42.0	00.0	18.5	37.0	. .	. .	. .	30 36.83	16.54	1.12	IV.	2	14.330	46 24.8	16.6	9.1	30 54.49	46 30.5
36	6	17.0	35.2	53.7	12.0	. .	. .	. .	32 11.92	16.55	1.09	IV.	3	23.290	37 1.1	16.8	7.5	32 29.56	37 5.4
37	8	. .	. .	. .	. .	17.5	. .	. .	32 59.19	16.56	1.08	VII.	3	23.020	37 17.3	16.8	7.6	33 16.83	37 21.7
38	7	57.0	15.0	33.5	52.0	. .	. .	. .	42 51.74	16.64	0.95	IV.	4	41.030	18 26.3	17.0	4.1	43 9.33	18 28.6
39	7	39.0	57.0	15 0	. .	52.0	. .	. .	47 33.57	16.68	0.94	IV.	3	23.470	36 49.0	18.4	7.5	47 51.19	36 55.7
40	7	. .	. .	50.5	8.5	27.0	. .	. .	49 8.68	16.70	0.91	IV.	3	31.200	29 16.3	18.5	6.1	49 26.29	29 20.9
41	7	10.5	28.7	47.0	5.5	. .	. .	. .	11 58 5.24	+16.78	+0.79	IV.	5	51.846	− 7 9.4	−19.3	− 3.5	11 58 22.81	−32 7 11.2

ZONE 12. MAY 4. P. $D_0 = -30° 49' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	55.0	. .	. .	. .	10 42 55.03	+23.80	+1.09	IV.	4	40.535	−18 57.4	− 9.0	− 2.4	10 43 19.92	−31 8 48.8
2	7	38.0	56.0	13.5	31.5	. .	. .	. .	45 31.74	23.81	1.10	IV.	3	37.440	22 13.3	9.4	2.8	45 56.65	12 5.5
3	7	. .	. .	. .	. .	38.0	56.0	14.0	46 19.90	23.82	1.12	VII.	2	18.680	41 51.1	9.5	5.8	46 44.84	31 31 46.4
4	6	. .	. .	. .	. .	39.5	57.5	15.5	48 21.59	23.83	1.07	V.	5	49.560	9 32.0	9.8	1.0	48 46.49	30 59 22.8
5	8	35.0	54.0	. .	. .	29.0	47.0	5.0	52 10.94	23.85	1.06	V.	3	23.880	36 23.8	10.4	5.0	52 35.85	31 26 19.2
6	6	. .	. .	. .	. .	. .	. .	. .	53	23.85	1.03	IV.	4	46.660	12 32.7	10.7	1.4	53	2 24.8
7	6	. .	7.0	25.0	43.0	1.0	. .	. .	10 55 43.01	23.87	1.03	IV.	3	40.225	19 18.4	10.9	2.4	10 56 7.91	9 11.7
8	8	45.5	. .	22.0	39.0	. .	. .	. .	11 0 39.53	23.90	1.06	IV.	3	33.245	26 36.5	11.6	3.5	11 1 4.49	16 31.6
9	9	. .	. .	. .	7.0	26.0	. .	. .	1 7.32	23.91	1.09	V.	2	19.670	40 49.8	11.6	5.6	1 32.32	30 46.0
10	5	. .	41.0	59.0	. .	35.0	. .	. .	2 17.03	23.91	1.09	IV.	2	17.290	43 19.3	11.8	6.0	2 42.03	33 17.1
11	6	. .	1.0	19.3	37.0	55.3	. .	. .	4 37.18	23.93	1.09	IV.	1	13.540	47 11.3	12.1	6.6	5 2.20	37 10.0
12	8	26.0	44.0	2.0	20.0	. .	. .	. .	8 20.08	23.95	1.08	IV.	2	17.406	43 12.0	12.6	6.0	8 45.11	31 33 10.6
13	6	34.0	52.0	10.0	28.0	. .	. .	. .	10 27.92	23.96	1.01	IV.	5	52.848	6 6.5	12.9	0.5	10 52.89	30 55 59.9
14	6	55.0	13.0	31.0	49.0	. .	. .	43.0	12 49.00	23.98	1.04	IV.	3	32.905	26 57.7	13.1	3.6	13 14.02	31 16 54.4
15	9	34.5	. .	10.0	. .	46.0	. .	. .	16 28.50	24.00	1.00	V.	5	51.945	7 3.2	13.6	0.6	16 52.50	30 56 57.4
16	8	. .	. .	. .	15.0	33.0	50.5	. .	17 14.81	24.01	1.04	IV.	3	24.180	36 5.2	13.7	4.8	17 39.86	31 26 3.7
17	7	1.0	19.0	37.0	55.0	. .	. .	. .	19 55.02	24.03	1.03	IV.	3	30.470	29 30.7	14.0	3.9	20 20.08	19 28.6
18	7	. .	. .	. .	43.5	1.5	19.0	. .	20 43.38	24.03	1.00	VI.	4	47.230	11 56.4	14.1	1.3	21 8.41	1 51.8
19	9	. .	32.0	. .	. .	. .	. .	. .	25 8.00	24.06	1.01	II.	3	34.890	24 52.7	14.6	3.2	25 33.07	14 50.5
20	4	. .	. .	55.0	13.0	. .	. .	7.0	25 13.02	24.06	0.99	IV.	4	47.428	11 44.7	14.6	1.3	25 38.07	1 40.6
21	9	. .	. .	. .	. .	. .	35.0	. .	26 59.08	24.08	0.99	VII.	4	42.950	16 24.3	14.8	2.0	27 24.15	6 21.1
22	9	. .	. .	6.0	. .	. .	. .	. .	29 24.05	24.09	1.03	III.	2	11.890	48 57.4	15.2	6.9	29 49.17	38 59.5
23	4	. .	. .	. .	. .	. .	. .	. .	34	24.13	1.02	VII.+	1	10.860	49 59.3	15.	7.0	34	31 40 (o.)
24	7	. .	. .	50.0	7.5	. .	. .	. .	37 7.71	24.15	0.96	IV.	5	52.175	6 48.7	15.8	0.6	37 32.82	30 56 45.1
25	7	. .	. .	. .	. .	. .	23.0	. .	37 46.97	24.15	1.00	VI.	3	24.440	35 48.8	15.9	4.9	38 12.12	31 25 49.6
26	7	. .	. .	. .	. .	. .	. .	31.0	38 36.87	24.16	1.01	VII.	3	20.890	39 30.9	16.0	5.4	39 2.04	29 32.3
27	7	52.0	10.0	28.0	. .	. .	22.0	40.0	41 46.01	24.18	1.00	III.	2	14.100	46 39.1	16.3	6.5	42 11.19	36 41.9
28	9	. .	. .	. .	58.0	. .	. .	. .	43 58.02	24.20	0.95	IV.	4	43.300	16 3.9	16.5	2.0	44 23.17	6 2.4
29	8	. .	1.0	19.0	37.0	. .	. .	. .	46 37.03	24.22	0.96	IV.	3	32.400	27 29.6	16.7	3.6	47 2.21	17 29.9
30	7	48.0	6.0	24.0	42.0	. .	. .	36.0	48 42.02	24.24	0.97	IV.	3	24.328	35 56.0	16.9	4.9	49 7.23	25 57.8
31	7	50.0	8.0	26.0	44.0	. .	. .	38.0	48 44.02	24.24	0.97	IV.	3	24.328	35 56.0	16.9	4.9	49 9.23	25 57.8
32	7	59.0	17.0	35.0	53.0	. .	. .	. .	52 52.98	24.27	0.93	IV.	3	38.345	21 16.5	17.2	2.7	53 18.18	11 16.4
33	7	33.0	51.0	9.5	. .	. .	. .	. .	11 55 27.21	+24.29	+0.96	III.	3	24.880	−35 21.0	−17.4	− 4.8	11 55 52.46	−31 25 23.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846. May 4,	h. 12	s. + 16.495	s. + 0.028	s. + 0.590	s. + 0.458	s. + 0.207	° ′ ″ 0 0 2.35	r. 30.002

REMARKS.

(11) 40. Mic. reading assumed as 30r.700 instead of 31r.200.

(12) 15. Transit over T. VI assumed as recorded over T. VII.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 12	May 4,	10 42	. . .	. .	. .	. .	. .	. .	. .	30.070	68.8	63.3			
		12 45	70 10 70.0	8.3	13.0	9.5	8.5	3.6	8.82	30.090	67.0	60.5	. .	. .	65.0

ZONE 12. MAY 4. P. $D_0=-30°\ 49'\ 40''$—Continued.

No,	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
34	8	. .	. .	52.0	10.0	28.0	. .	. .	11 56 9.96	+24.30	+0.94	IV.	3	33.570	−26 16.1	−17.5	− 3.4	11 56 35.20	−31 16 17.0
35	8	57.0	15.0	33.5	51.0	. .	. .	. .	12 5 51.21	24.37	0.94	IV.	2	17.540	43 3.6	18.1	6.0	12 6 16.52	33 7.7
36	8	47.0	. .	23.5	. .	. .	. .	. .	8 41.32	24.40	0.93	III.	2	19.540	40 58.2	18.3	5.6	9 6.65	31 2.1
37	7	55.5	13.0	31.0	49.0	. .	. .	. .	13 49.09	24.44	0.88	IV.	4	42.900	16 28.9	18.6	2.0	14 14.41	6 29.5
38	8	4.0	22.0	40.0	58.0	. .	. .	. .	15 58.07	24.45	0.92	IV.	2	20.730	39 43.5	18.7	5.4	16 23.44	29 47.6
39	8	4.0	22.0	40.0	. .	. .	. .	. .	17 57.94	24.47	0.89	III.	3	30.795	29 9.9	18.8	3.9	18 23.30	31 19 12.6
40	8	. .	. .	. .	. .	. .	. .	37.0	17 43.13	24.47	0.86	VII.	5	52.450	6 31.5	18.8	0.6	18 8.46	30 56 30.9
41	9	. .	. .	. .	. .	. .	57.0	. .	19 20.94	24.48	0.91	VI.	2	20.600	39 51.2	18.9	5.5	19 46.33	31 29 55.6
42	7	. .	7.5	25.7	43.0	. .	. .	. .	20 43.42	24.49	0.88	IV.	3	35.995	23 43.8	19.0	3.1	21 8.79	13 45.9
43	7	34.0	52.0	10.0	. .	. .	. .	. .	23 27.94	24.52	0.85	III.	4	44.250	15 4.3	19.1	1.8	23 53.31	5 5.2
44	5	. .	. .	. .	. .	2.0	19.5	. .	23 43.60	24.52	0.90	V.	1	8.760	52 10.4	19.1	7.3	24 9.02	42 16.8
45	8	. .	. .	. .	. .	. .	50.0	. .	24 13.88	24.52	0.90	VI.	2	12.760	48 2.5	19.1	6.7	24 39.30	38 8.3
46	7	. .	. .	. .	. .	8.0	26.0	. .	25 50.00	24.54	0.86	V.	3	33.940	25 52.7	19.2	3.4	26 15.40	15 55.3
47	8	. .	. .	. .	. .	. .	58.0	16.0	26 22.09	24.54	0.86	VI.	4	46.830	12 21.2	19.2	1.4	26 47.49	2 21.8
48	7	. .	. .	11.0	29.0	47.0	. .	. .	28 29.01	24.56	0.86	IV.	3	29.185	30 51.2	19.3	4.1	28 54.43	31 20 54.6
49	7	. .	59.0	17.0	35.0	. .	. .	. .	32 34.97	24.60	0.82	IV.	5	54.950	4 57.4	19.4	0.2	33 0.39	30 54 57.0
50	8	. .	. .	. .	42.0	1.0	. .	. .	33 42.50	24.61	0.82	IV.	4	49.470	9 36.5	19.4	1.0	34 7.93	59 36.9
51	9	. .	. .	. .	. .	. .	. .	59.0	34 5.15	24.61	0.81	VII.	5	55.525	3 18.6	19.2	0.1	34 30.57	30 53 17.9
52	8	34.0	52.0	. .	. .	. .	. .	. .	37 27.91	24.64	0.82	II.	4	45.090	14 11.5	19.5	1.7	37 53.37	31 4 12.7
53	7	. .	. .	. .	36.0	53.0	. .	. .	37 35.50	24.64	0.82	IV.	5	52.340	6 38.4	19.5	0.7	38 0.96	30 56 38.6
54	8	. .	. .	. .	. .	. .	33.0	51.0	37 57.13	24.64	0.82	VI.	5	50.245	8 49.8	19.5	0.9	38 22.59	30 58 50.2
55	7	. .	. .	. .	48.0	. .	24.0	. .	39 48.00	24.66	0.87	IV.	2	20.270	40 12.4	19.6	5.5	40 13.53	31 30 17.5
56	8	17.0	35.0	53.0	11.0	. .	. .	. .	43 10.99	24.69	0.82	IV.	3	36.137	23 35.0	19.6	3.0	43 36.50	13 37.6
57	8	. .	. .	. .	27.0	45.0	. .	. .	12 44 27.01	+24 70	+0.81	IV.	4	46.800	−12 23.9	−19.7	− 1.4	12 44 52.52	−31 2 25.0

ZONE 13. MAY 19. P. $D_0=-29°\ 34'\ 30'$.

No,	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	39.0	. .	. .	. .	. .	13 29 56.78	+37.84	+0.70	III.	3	35.635	−24 6.3	−18.5	− 4.2	13 30 35.32	−29 58 59.0
2	7	. .	. .	. .	20.5	. .	. .	. .	36 20.48	37.89	0.48	IV.	5	52.585	6 23.0	18.1	2.0	36 58.85	41 13.1
3	7	. .	. .	. .	. .	. .	. .	10.5	37 7.30	37.89	0.50	VII.	4	50.660	8 20.3	18.0	2.2	37 45.69	43 10.5
4	5	. .	. .	. .	. .	30.0	. .	. .	39 12.21	37.91	0.73	VII.	3	34.790	24 58.9	18.0	4.3	39 50.85	59 51.2
5	6	. .	. .	. .	. .	. .	24.0	42.0	39 48.59	37.91	0.70	VII.	3	36.903	22 46.3	17.9	4.0	40 27.20	57 38.2
6	8	. .	. .	. .	57.0	. .	. .	. .	41 57.00	37.93	0.59	V.	4	44.990	14 17.2	17.8	3.0	42 35.52	49 8.0
7	6	47.0	4.5	22.0	40.0	. .	. .	. .	46 39.98	37.96	0.62	IV.	4	43.788	15 33.0	17.4	3.1	47 18.56	29 50 23.5
8	7	. .	51.0	9.0	27.0	. .	. .	. .	48 26.84	37.98	1.02	IV.	2	15.625	45 3.6	17.3	7.0	49 5.84	30 19 57.9
9	8	. .	4.0	22.0	. .	. .	. .	33.0	13 48 39.67	37.98	0.94	VII.	3	21.580	38 47.7	17.3	6.2	13 49 18.59	30 13 41.2
10	7	59.0	. .	35.0	53.0	. .	. .	. .	14 0 52.65	38.07	0.71	IV.	4	39.935	19 35.0	16.3	3.6	14 1 31.43	29 54 24.9
11	7	. .	44.0	. .	20.0	. .	. .	. .	5 19.85	38.11	1.07	IV.	2	14.860	45 51.4	16.0	7.1	5 59.03	30 20 44.5
12	8	. .	44.0	. .	20.0	. .	. .	. .	7 19.84	38.12	1.00	IV.	2	19.860	40 37.9	15.8	6.4	7 58.96	15 30.1
13	8	41.0	59.0	17.0	. .	. .	. .	. .	15 34.55	38.19	0.90	III.	3	27.965	32 7.5	15.0	5.3	16 13.64	6 57.8
14	.	. .	. .	. .	. .	. .	43.0	. .	16 7. .	38.20	. .	.	.	. .	. .	. .	. .	16 (45.)	
15	4	45.0	2.5	20.3	38.3	. .	. .	31.5	23 38.19	38.25	0.86	IV.	3	31.900	28 0.7	14.1	4.7	24 17.30	30 2 49.5
16	7	58.0	. .	33.5	51.0	. .	. .	. .	30 51.15	38.30	0.74	IV.	4	41.080	18 23.1	13.3	3.5	31 30.19	29 53 9.9
17	6	. .	41.0	59.0	16.0	. .	. .	. .	32 16.49	38.32	1.08	IV.	2	18.220	42 20.9	13.1	6.6	32 55.89	30 17 10.6
18	8	. .	. .	17.0	35.0	. .	. .	. .	33 34.84	38.33	0.61	IV.	4	50.900	8 6.5	13.0	2.2	34 13.78	29 42 51.7
19	8	. .	. .	. .	. .	5.0	. .	. .	34 47.18	38.34	0.97	V.	3	25.470	34 44.3	12.8	5.6	35 26.49	30 9 32.7
20	9	. .	. .	. .	. .	6.0	. .	. .	34 48.15	38.34	1.04	V.	3	21.190	39 12.7	12.8	6.2	35 27.53	14 1.7
21	8	8.0	26.0	. .	2.0	. .	. .	. .	14 42 1.69	+38.39	+1.07	IV.	2	20.190	−40 17.4	−12.0	− 6.3	14 42 41.15	−30 15 5.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 19.	12	+ 29.708	+ 0.026	+ 0.505	+ 0.353	+ 0.207	0 0 2.72	30.006

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 13	May 19,	13 29	68 55 8.0	8.7	15.5	7.0	9.7	0.0	8.15	30.046	59.5	50.5			
		14 59	. . . .	. .	. .	. .	. .	. .	. .	30.058	58.5	50.7			
		15 26	. . . .	. .	. .	. .	. .	. .	. .	30.052	58.5	51.0			

REMARKS.

(12) 49. Mic. reading assumed as 53.r950, not 54r.950.

May 19. Interrupted at times by very faint clouds, barely visible.

(13) 3. Transit over T. VII assumed as 0s.5 instead of 10s.5.

ZONE 13. MAY 19. P. $D_0 = -29° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.				′ ″	″	″	h. m. s.	° ′ ″
22	8	. .	. .	53.0	11.0	. .	. .	. .	14 43 10.92	+38.40	+1.22	IV.	1	10.380	−50 29.3	−11.8	− 7.7	14 43 50.54	−30 25 18.8
23	5	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	.	3	37.120	22 33.3	11.5	4.0	45 . .	29 57 18.8
24	7	47.0	4.0	. .	. .	58.0	. .	. .	46 40.06	38.43	1.08	II.	2	19.420	41 5.6	11.3	6.5	47 19.57	30 15 53.4
25	4	54.5	. .	29.7	47.5	. .	. .	41.0	49 47.61	38.45	0.92	IV.	3	28.445	31 37.7	10.9	5.2	50 26.98	30 6 23.8
26	7	12.3	29.5	47.5	5.5	. .	. .	. .	53 5.32	38.48	0.78	IV.	4	41.363	18 5.5	10.4	3.4	53 44.58	29 52 49.3
27	6	57.0	15.0	33.0	50.5	. .	. .	. .	55 50.52	38.50	0.86	IV.	3	36.470	23 14.1	10.0	4.1	56 29.88	57 58.2
28	8	35.0	53.0	. .	. .	45.0	. .	. .	56 28.30	38.50	0.74	IV.	4	44.095	15 13.8	9.9	3.1	57 7.54	29 49 56.8
29	4	. .	. .	. .	. .	. .	. .	42.0	56 48.52	38.51	1.16	VII.	2	15.550	45 7.4	9.9	7.0	14 57 28.19	30 19 54.3
30	7	. .	45.5	3.0	21.0	. .	. .	14.5	14 59 21.01	38.53	0.98	IV.	3	28.730	31 19.7	9.5	5.2	15 0 0.52	6 4.4
31	8	. .	46.5	5.0	22.0	. .	. .	. .	15 2 22.33	38.55	1.16	IV.	2	16.720	43 54.8	9.0	6.9	3 2.04	18 40.7
32	8	. .	. .	. .	. .	52.0	. .	. .	3 14.17	38.56	1.06	V.	3	24.270	35 59.6	8.9	5.8	3 53.79	10 44.3
33	7	23.0	41.0	. .	. .	. .	. .	. .	6 16.46	38.58	1.04	II.	3	24.955	35 16.0	8.3	5.7	6 56.08	10 0.0
34	8	. .	. .	6.0	. .	. .	. .	. .	15 26 23.79	+38.73	1.01	III.	3	30.240	−29 45.0	− 5.1	− 4.9	15 27 3.53	−30 4 25.0

ZONE 14. MAY 20. C. $D_0 = -34° 34' 50'$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	30.0	49.3	8.0	. .	45.5	4.5	13 36 7.94	+38.19	+1.15	IV.	3	25.607	−34 35.7	−31.6	− 8.0	13 36 47.28	−35 10 5.3
2	7	. .	. .	. .	33.0	52.0	11.5	31.0	37 33.58	38.20	0.97	IV.	1	6.690	54 20.1	31.5	12.3	38 12.75	35 29 53.9
3	7.8	. .	. .	20.0	38.5	57.2	16.0	35.0	39 38.58	38.22	1.26	IV.	3	38.271	21 21.1	31.5	5.2	40 18.06	34 56 47.8
4	7	. .	30.6	49.5	8.0	26.3	45.6	4.5	44 8.00	38.27	1.26	IV.	3	39.727	19 49.6	31.3	5.0	44 47.53	55 15.9
5	9	. .	. .	. .	. .	. .	. .	4.0	44 7.68	38.27	1.26	V.	3	40.740	18 45.9	31.3	4.7	44 47.21	34 54 11.9
6	9	. .	. .	. .	9.0	. .	46.0	5.0	46 8.67	38.28	1.16	IV.	F W	30.002	29 59.9	31.2	7.0	46 48.11	35 5 28.1
7	9	. .	. .	43.5	2.6	21.0	. .	. .	48 2.36	38.30	1.34	IV.	4	51.018	7 59.2	31.1	2.5	48 42.00	34 43 22.8
8	8	. .	6.5	. .	44.0	. .	22.4	41.0	50 44.40	38.33	1.17	IV.	3	32.501	27 23.2	30.9	6.4	51 23.90	35 2 50.5
9	8	. .	. .	41.0	. .	18.8	37.6	. .	50 59.94	38.33	1.17	IV.	3	32.060	27 50.8	30.9	6.5	51 39.44	3 18.2
10	7.8	. .	. .	. .	51.0	10.4	29.0	. .	52 51.24	38.35	0.92	IV.	1	8.352	52 36.2	30.8	12.0	53 30.51	35 28 9.0
11	8	. .	. .	46.5	5.5	24.0	43.0	. .	55 5.39	38.37	1.22	IV.	3	39.671	19 53.1	30.7	4.9	55 44.98	34 55 18.7
12	7.8	. .	58.0	17.0	35.7	54.0	13.0	31.5	57 35.50	38.39	1.30	IV.	4	48.119	11 1.2	30.5	3.0	58 15.19	46 24.7
13	9	. .	. .	. .	53.0	. .	31.5	. .	13 57 53.53	38.40	1.23	V.	3	40.648	18 51.8	30.5	4.7	13 58 33.16	54 17.0
14	9	. .	. .	18.0	37.5	. .	16.0	. .	14 10 37.60?	38.52	1.28	IV.	4	52.489	6 27.0	29.4	2.2	14 11 17.40?	41 48.6
15	9	. .	. .	. .	3.2	. .	37.5	. .	11 3.24	38.52	1.15	IV.	3	37.770	21 52.4	29.3	5.3	11 42.91	57 17.0
16	8.9	. .	. .	. .	29.0	48.4	7.0	. .	13 29.36	38.55	1.13	IV.	3	35.355	24 24.1	29.1	5.8	14 9.04	59 49.0
17	8	. .	. .	. .	48.0	7.0	25.5	. .	17 48.11	38.59	1.22	IV.	4	48.469	10 39.3	28.6	3.0	18 27.92	46 0.9
18	9.10	. .	. .	. .	. .	4.0	. .	. .	21 45.26	38.62	1.27	V.	4	53.938	4 55.5	28.2	1.8	22 25.15	40 15.5
19	7	. .	20.5	39.7	58.2	17.0	35.6	. .	24 58.23	38.66	1.20	IV.	4	46.629	12 34.7	27.9	3.4	25 38.09	47 56.0
20	8	. .	18.7	37.0	56.0	15.0	33.5	. .	27 56.06	38.68	1.15	IV.	4	42.991	16 23.1	27.6	4.2	28 35.89	51 44.9
21	7.8	. .	. .	48.0	7.0	26.0	. .	. .	29 7.01	38.69	1.10	IV.	3	38.649	20 57.3	27.5	5.1	29 46.80	34 56 19.9
22	6	. .	. .	51.5	10.0	29.0	. .	. .	31 10.13	38.71	0.80	IV.	1	7.304	53 41.8	27.2	12.1	31 49.64	35 29 11.1
23	7	. .	49.0	8.0	27.0	46.0	. .	. .	35 26.94	38.75	0.77	IV.	1	5.965	55 7.0	28.0	12.4	36 6.46	30 37.4
24	7	. .	0.0	19.0	37.6	56.5	15.7	. .	38 37.97	38.78	0.93	IV.	3	23.105	37 12.5	26.4	8.5	39 17.68	35 12 37.4
25	8	. .	. .	. .	. .	. .	45.0	4.0	39 7.60	38.79	1.08	VI.	4	39.702	19 48.7	26.3	4.9	39 47.47	34 55 9.9
26	9.10	. .	. .	. .	. .	32.0	. .	. .	46 13.23	38.86	1.13	V.	4	47.944	11 11.8	25.3	3.1	46 53.22	46 30.2
27	7.8	. .	. .	17.0	36.0	55.0	13.2	. .	47 35.94	38.87	1.12	IV.	4	47.971	11 10.4	25.2	3.1	48 15.93	34 46 28.7
28	7.8	. .	. .	. .	59.2	18.5	37.0	. .	49 59.35	38.89	0.78	IV.	2	10.772	50 7.4	24.8	11.3	49 39.02	35 25 33.5
29	9	. .	. .	. .	. .	. .	30.5	. .	50 52.84	38.90	0.88	VI.	3	22.092	38 15.8	24.7	8.8	51 32.62	13 39.3
30	7	. .	. .	14.0	32.5	51 6	10.0	. .	53 32.59	38.92	0.80	IV.	2	15.130	45 34.6	24.3	10.3	54 12.31	20 59.2
31	9	. .	. .	. .	45.0	. .	24.0	. .	54 45.67	38.94	0.81	VI.	2	15.940	44 43.2	24.1	10.2	14 55 25.42	20 7.5
32	7.8	. .	59.1	17.8	37.0	56.0	14.6	. .	14 59 36.90	+38.98	+0.82	IV.	2	18.659	−41 53.3	−23.4	− 9.6	15 0 16.70	−35 17 16.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 20,	16	+ 29.991	+ 0.018	+ 0.505	+ 0.353	+ 0.207	0 0 2.48	30.001

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″							in.	°	°	°	°	°
Zone 14	May 20,	13 30	73 54 60.4	60.2	65.1	63.8	59.8	50.6	59.98	. .	. .	. .	65.0	64.9	64.0
		13 36	. .	. .	. .	. .	. .	. .	. .	29.908	66.0	60.7			
		13 57	. .	. .	. .	. .	. .	. .	. .	. .	. .	60.0			
		14 10	. .	. .	. .	. .	. .	. .	. .	29.916	65.0				
		14 20	59.6	60.9	65.6	64.7	59.9	50.1	60.13	. .	. .	. .	63.5	63.5	
		14 31	. .	. .	. .	. .	. .	. .	. .	. .	. .	60.7			
		14 59	. .	. .	. .	. .	. .	. .	. .	29.928	64.0	60.1			
		15 20	58.9	60.8	65.0	63.6	59.1	50.0	59.57	. .	. .	. .	62.0	62.4	

REMARKS.

May 20. Night clear, bright, and beautiful.

(13) 26. Minutes assumed as 54 instead of 53.

(13) 32. Transit over T. V assumed as 22^s instead of 32^s to agree with Arg. Z. 384 : 23.

(14) 18. Discordant from Transit Zone of same date.

(14) 26. R. A. discordant from Transit Zone of same date.

(14) 28. Min. assumed as 48 instead of 49.

ZONE 14. MAY 20. C. $D_0 = -34° 34' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	8.9	. .	8.5	. .	45.7	. .	. .	. .	15 1 45.90	+39.00	+1.02	IV.	3	40.148	−19 23.2	−23.1	− 4.8	15 2 25.92	−34 54 41.1
34	9	. .	. .	. .	42.0	1.0	. .	. .	3 42.08	39.02	0.82	IV.	2	19.850	40 38.6	22.8	9.3	4 21.92	35 16 0.7
35	9	. .	. .	52.0	12.5	31.2	. .	. .	9 12.45	39.07	0.84	IV.	3	26.291	33 52.9	22.0	7.8	9 52.36	9 12.7
36	9	. .	. .	. .	. .	. .	13.0	. .	9 35.43	39.07	0.91	VI.	3	32.022	27 52.8	21.9	6.6	10 15.41	3 11.3
37	7.8	. .	52.8	11.4	30.7	49.7	8.0	. .	14 30.52	39.12	0.73	IV.	2	13.378	47 24.4	21.2	10.8	15 10.37	22 46.4
38	7.8	. .	58.0	16.8	35.6	54.5	13.1	. .	16 35.60	39.14	0.79	IV.	3	20.856	39 33.5	20.9	9.1	17 15.53	35 14 53.5
39	8.9	. .	38.0	56.2	15.2	34.0	53.0	. .	19 15.31	39.16	0.98	IV.	4	42.014	17 24.4	20.5	4.4	19 55.45	34 52 39.3
40	8	. .	13.0	32.0	51.5	10.4	29.0	. .	20 51.19	39.18	0.84	IV.	3	28.250	31 50.0	20.2	7.4	21 31.21	35 7 7.6
41	9	. .	. .	. .	. .	56.0	. .	. .	21 37.19	39.18	0.88	V.	3	33.396	26 27.1	20.1	6.3	22 17.25	35 1 43.5
42	8	. .	. .	13.7	32.5	52.1	. .	. .	30 32.78	39.26	0.91	IV.	3	38.869	20 43.4	18.7	5.1	31 12.95	34 55 57.2
43	8.9	. .	. .	. .	12.8	32.0	. .	. .	32 12.98	39.28	0.73	IV.	2	19.479	41 2.0	18.5	9.4	32 52.99	35 16 19.9
44	9	. .	. .	. .	. .	. .	20.0	38.9	32 42.65	39.28	1.00	VI.	4	48.831	10 15.5	18.4	2.9	33 22.93	34 45 26.8
45	8	. .	. .	32.0	50.5	9.0	28.0	. .	34 50.54	39.30	1.06	IV.	4	56.563	2 11.9	18.0	1.3	35 30.90	34 37 21.2
46	8	. .	8.2	27.0	46.2	5.4	23.8	42.5	35 46.13	39.31	0.83	IV.	3	32.916	26 57.0	17.9	6.1	36 26.27	35 2 11.3
47	8.9	. .	10.2	29.3	48.5	8.0	25.8	45.0	35 48.41	39.31	0.83	IV.	3	32.444	27 26.8	17.9	6.5	36 28.55	2 41.2
48	9	. .	. .	. .	31.5	. .	38.5	. .	44 1.21	39.38	0.75	IV.	3	26.151?	34 1.6	16.6	7.9	44 41.34	9 16.1
49	8	. .	. .	. .	28.7	. .	. .	25.5	45 28.86	39.40	0.70	IV.	3	21.822	38 32.9	16.4	8.8	46 8.96	13 48.1
50	8	. .	. .	. .	. .	41.3	0.0	19.4	49 22.68	39.43	0.60	V.	2	11.621	49 14.2	15.0	11.2	50 2.71	24 31.2
51	9.10	. .	. .	. .	. .	. .	. .	. .	52 . .	. .	0.60	IV.	2	13.132	47 39.8	15.4	10.8	52 . .	22 56.0
52	8	. .	. .	. .	45.0	4.0	22.5	. .	53 45.06	39.47	0.77	IV.	3	33.401	26 26.8	15.2	6.2	54 25.30	35 1 38.2
53	9	. .	30.0	. .	. .	26.0	. .	. .	58 7.40	39.51	0.92	IV.	4	48.869	10 14.0	14.5	2.9	58 47.83	34 45 21.4
54	9	. .	. .	. .	52.0	10.0	. .	. .	58 51.61	39.51	0.73	IV.	3	29. .	31 . .	. .	. .	15 59 31.85	35 6 . .
55	8.9	. .	. .	. .	34.0	52.1	. .	. .	15 59 33.63	39.52	0.65	IV.	3	21.389	39 0.3	14.2	9.0	16 0 13.80	14 13.5
56	9	. .	. .	7.0	25.6	44.5	3.5	. .	16 1 25.74	39.53	0.67	IV.	3	22.928	37 23.6	14.0	8.6	2 5.94	12 36.2
57	9.10	. .	. .	57.2	. .	. .	. .	. .	3 16.05	39.55	0.56	III.	2	11.652	49 12.4	13.6	11.2	3 56.16	24 27.2
58	9.10	. .	. .	. .	. .	. .	. .	34.0	3 37.40	39.55	0.57	VII.	2	13.489	47 16.4	13.6	10.7	4 17.52	22 30.7
59	7.8	. .	11.1	30.2	49.0	. .	26.5	. .	8 48.92	39.60	0.69	IV.	3	28.178	31 54.4	12.7	7.4	9 29.21	7 4.5
60	9	. .	. .	. .	. .	. .	. .	. .	8 . .	. .	0.74	VI.	3	33.000	26 51.4	12.8	6.3	9 . .	35 2 0.5
61	8	. .	25.0	43.5	2.5	21.0	. .	. .	14 2.40	39.64	0.83	IV.	4	45.159	14 7.1	11.7	3.7	14 42.87	34 49 12.5
62	8	. .	4.0	. .	. .	59.5	. .	. .	15 41.17	39.65	0.92	IV.	4	56.021	2 45.9	11.4	1.4	16 21.74	34 37 48.7
63	8	. .	36.0	55.0	14.0	33.0	. .	. .	18 13.93	39.67	0.54	IV.	2	14.957	45 45.4	10.9	10.4	18 54.14	35 20 56.7
64	8.9	. .	. .	24.0	. .	1.5	. .	38.0	18 42.69	39.68	0.65	IV.	3	27.279	32 50.9	10.9	7.6	19 23.02	7 59.4
65	8.9	. .	41.6	0.4	19.4	38.0	56.0	. .	23 19.29	39.71	0.58	IV.	3	22.352	37 59.9	10.0	8.7	23 59.58	13 8.6
66	7	. .	. .	21.0	39.8	. .	17.7	. .	24 39.88	39.72	0.49	IV.	2	11.752	49 6.1	9.7	11.1	25 20.09	35 24 16.9
67	6	. .	. .	. .	. .	. .	27.5	46.0	25 49.83	39.73	0.73	VI.	3	38.251	21 22.0	9.5	5.2	26 30.29	34 56 26.7
68	9	. .	41.2	0.6	19.0	38.0	. .	. .	29 19.10	39.76	0.70	IV.	3	37.521	22 8.2	8.8	5.3	29 59.56	34 57 12.3
69	7	. .	. .	. .	. .	21.5	40.1	. .	30 2.45	39.77	0.48	V.	2	12.804	48 0.1	8.7	10.9	30 42.70	35 23 9.7
70	9	. .	. .	16.0	34.5	. .	. .	. .	32 34.70	39.79	0.49	IV.	2	13.622	47 9.1	8.1	10.8	33 14.98	22 18.0
71	9	. .	. .	10.7	. .	. .	7.0	. .	35 29.42	39.81	0.49	IV.	2	15.802	44 52.4	7.6	10.2	36 9.72	20 0.2
72	9.10	. .	. .	52.0	. .	. .	. .	. .	39 10.81	39.84	0.63	III.	3	33.246	26 36.3	6.8	6.3	39 51.28	1 39.4
73	8	. .	. .	3.5	22.0	40.8	0.0	. .	41 22.17	39.85	0.54	IV.	3	23.551	36 44.6	6.4	8.5	42 2.56	11 49.5
74	9.10	. .	. .	22.2	40.7	. .	18.1	. .	45 40.74	39.89	0.50	IV.	3	21.344	39 3.1	5.5	9.0	46 21.13	14 7.6
75	8	. .	. .	. .	18.0	. .	. .	. .	47 18.05	39.90	0.36	IV.	2	6.389	54 42.0	5.1	12.3	47 58.31	29 49.4
76	9	. .	. .	. .	. .	. .	19.0	. .	47 41.26	39.90	0.38	IV.	2	9.188	51 46.7	5.1	11.7	48 21.54	26 53.5
77	8	. .	. .	. .	. .	35.5	. .	13.0	53 16.63	39.94	0.57	IV.	3	31.740	28 10.8	3.8	6.6	53 57.14	3 11.2
78	9	. .	. .	. .	6.0	. .	44.0	. .	54 6.23	39.95	0.54	IV.	3	29.034	31 0.6	3.7	7.2	54 46.72	6 1.5
79	7	. .	. .	30.0	48.5	7.5	26.1	. .	55 48.61	39.96	0.46	IV.	3	20.038	40 24.8	3.4	9.2	56 29.03	15 27.4
80	8.9	. .	. .	. .	. .	. .	56.0	. .	56 18.38	39.96	0.51	VI.	3	25.182	35 2.1	3.2	8.1	56 58.85	35 10 3.4
81	7.8	. .	. .	. .	. .	14.0	32.5	. .	56 55.07	39.96	0.60	V.	3	35.135	24 37.8	3.1	5.9	57 35.63	34 59 36.8
82	8	. .	. .	. .	. .	. .	. .	32.5	16 57 36.23	+39.97	+0.69	VII.	4	46.178	−13 1.5	− 3.0	− 3.4	16 58 16.39	34 47 57.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 14	May 20, 15 35	. . . .	. .	. .	. .	. .	. .	. .	. .	. .	59.0			
	16 3	. . . .	. .	. .	. .	. .	. .	. .	29.930	62.8	57.5			
	16 35	. . . .	. .	. .	. .	. .	. .	. .	. .	. .	56.0			
	16 57	. . . .	. .	. .	. .	. .	. .	. .	29.926	61.2	55.0			
	17 5	73 54 59.1	61.9	65.0	63.4	59.9	49.7	59.83	. .	. .	. .	60.2	60.2	64.0

ZONE 15. MAY 21. P. $D_\circ = -38° \; 20' \; 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	5	15.0	35.0	55.0	14.5	. .	. .	. .	13 30 14.58	+38.04	+0.93	IV.	3	22.930	−37 23.4	−38.3	−11.5	13 30 53.55	−38 59 3.2
2	7	. .	. .	10.0	30.0	. .	. .	. .	31 29.92	38.05	0.94	IV.	3	24.560	35 41.4	38.3	11.0	32 8.91	57 20.7
3	8	39.0	59.0	19.0	. .	. .	. .	. .	33 38.48	38.08	0.99	IV.	3	32.110	27 47.7	38.2	8.2	34 17.55	49 24.1
4	8	3.5	23.5	43.0	2.5	. .	. .	. .	36 2.66	38.10	1.04	III.	4	44.783	14 30.6	38.1	3.7	36 41.80	38 36 2.4
5	6	. .	5.5	25.5	45.5	. .	. .	45.0	40 45.39	38.16	0.90	IV.	2	13.280	47 30.6	37.8	15.2	41 24.45	39 9 13.6
6	7	23.0	42.7	2.5	22.0	. .	. .	. .	46 22.12	38.22	1.07	IV.	4	40.774	18 42.3	37.5	5.1	47 1.41	38 40 14.9
7	8	. .	. .	49.5	9.2	29.0	. .	. .	48 9.24	38.24	1.09	V.	4	44.845	14 26.2	37.4	3.7	48 48.57	35 57.3
8	7	39.0	58.5	18.0	. .	. .	. .	. .	51 37.84	38.28	1.11	III.	4	49.210	9 52.9	37.2	2.2	52 17.23	31 22.3
9	7	. .	. .	6.0	26.0	. .	. .	. .	52 25.89	38.29	1.06	IV.	4	38.590	20 59.5	37.1	6.0	53 5.24	42 32.6
10	8	. .	. .	. .	30.0	. .	9.3	. .	13 53 29.90	38.30	0.98	IV.	3	23.300	37 0.4	37.0	11.5	13 54 9.18	38 58 38.9
11	9	57.0	17.0	. .	58.0	. .	. .	. .	14 0 56.68	38.38	0.99	IV.	3	21.725	38 39.0	36.5	12.0	14 1 36.05	39 0 17.5
12	7	59.0	19.0	39.0	. .	. .	. .	. .	12 58.59	38.52	1.02	III.	3	25.620	34 34.6	35.6	10.6	13 38.13	38 51 10.8
13	4	. .	30.0	49.5	. .	. .	48.5	. .	13 9.26	38.52	1.06	VI.	3	32.950	27 57.2	35.6	8.3	13 48.84	49 31.1
14	7	43.0	3.0	22.5	. .	. .	. .	. .	16 42.31	38.56	1.06	III.	3	30.900	29 3.3	35.3	8.7	17 21.93	38 50 37.3
15	6	. .	. .	. .	. .	13.5	33.5	. .	16 53.69	38.56	0.97	VI.	1	10.855	49 58.7	35.3	16.1	17 33.22	39 11 40.1
16	6	24.0	43.5	3.5	23.0	. .	. .	22.5	26 23.17	38.66	1.05	IV.	3	25.490	34 43.1	34.4	10.7	27 2.88	38 56 18.2
17	7	34.5	54.0	14.0	34.0	. .	. .	. .	29 33.79	38.70	1.07	IV.	3	26.945	33 11.6	34.1	10.1	30 13.56	54 45.8
18	7	33.0	53.0	. .	. .	. .	. .	. .	33 33.34	38.74	1.10	II.	3	32.070	27 49.6	33.7	8.3	34 13.18	38 49 21.6
19	9	. .	. .	. .	. .	53.0	13.0	33.0	33 33.38	38.74	1.05	VII.	3	21.620	38 44.8	33.7	12.1	34 13.17	39 0 20.6
20	8	. .	1.0	21.0	. .	. .	. .	. .	40 40.62	38.82	1.13	III.	3	35.230	24 31.8	33.0	7.1	41 20.57	38 46 1.9
21	7	. .	. .	. .	35.0	. .	. .	. .	43 35.04	38.85	1.03	IV.	1	14.505	46 10.9	32.6	14.7	44 14.92	39 7 48.2
22	8	. .	. .	. .	22.0	. .	. .	. .	44 22.06	38.86	1.16	IV.	3	37.350	22 18.9	32.6	6.3	45 2.08	38 43 47.8
23	8	. .	. .	. .	27.0	. .	. .	. .	44 27.04	38.86	1.17	VII.	3	39.495	20 3.4	32.6	5.6	45 7.07	41 31.6
24	7	. .	. .	4.5	24.0	. .	. .	. .	46 24.16	38.89	1.14	IV.	3	33.100	26 45.5	32.4	7.9	47 4.19	38 48 15.8
25	8	. .	. .	. .	. .	. .	. .	13.0	46 13.59	38.88	1.08	VII.	2	21.020	39 24.0	32.4	12.3	46 53.55	39 0 58.7
26	9	50.0	10.0	30.0	49.5	. .	. .	. .	14 49 49.42	38.92	1.03	IV.	1	10.780	50 4.0	31.9	16.2	14 50 29.37	11 42.1
27	8	10.0	29.5	49.5	9.5	. .	. .	. .	15 6 9.33	39.10	1.12	IV.	3	21.823	38 32.9	29.8	12.0	15 6 49.55	39 0 4.7
28	9	. .	. .	. .	. .	55.0	. .	. .	11 35.27	39.16	1.23	V.	4	40.165	19 20.3	29.1	5.3	12 15.66	38 40 44.7
29	4	18.3	38.5	58.3	18.0	. .	. .	. .	14 18.07	39.19	1.08	IV.	1	12.120	48 40.2	28.7	15.6	14 58.34	39 10 14.5
30	6	51.5	11.5	30.7	50.5	. .	. .	50.0	23 50.69	39.28	1.20	IV.	3	31.090	28 51.7	27.3	8.6	24 31.17	38 50 17.6
31	8	. .	. .	45.0	. .	. .	. .	. .	27 4.71	39.32	1.28	III.	4	45.250	14 1.5	26.8	3.5	27 45.31	35 21.8
32	8	. .	. .	. .	. .	36.0	. .	. .	27 16.28	39.32	1.23	V.	3	35.170	24 35.6	26.7	7.1	27 56.83	45 59.4
33	6	. .	. .	. .	. .	21.0	. .	. .	28 1.28	39.33	1.26	V.	4	41.095	18 21.8	26.6	5.0	28 41.87	39 43.4
34	6	. .	. .	. .	. .	31.0	. .	. .	28 11.28	39.33	1.27	V.	4	42.850	16 31.5	26.6	4.4	28 51.88	37 52.5
35	8	. .	35.0	55.0	15.0	. .	. .	. .	33 14.80	39.38	1.18	IV.	3	23.130	37 11.0	25.0	11.5	33 55.36	38 58 38.3
36	9	. .	. .	. .	40.0	. .	. .	. .	41 40.04	39.47	1.17	VII.	2	18.530	42 0.2	24.4	13.2	42 20.68	39 3 27.8
37	.	. .	57.0	. .	. .	. .	. .	. .	44 37. .	39.50	. .	.	.	. .	. . .	. .	. .	45 (16.) .	
38	8	. .	33.5	54.0	13.5	. .	. .	. .	48 13.38	39.53	1.34	IV.	4	47.180	12 0.2	23.3	2.9	48 54.25	38 33 16.4
39	8	. .	0.0	. .	43.0	. .	. .	42.0	49 42.95	39.55	1.34	IV.	4	46.600	12 36.5	23.0	3.1	50 23.84	33 52.6
40	7	8.0	27.0	47.0	. .	. .	46.0	. .	50 6.71	39.55	1.32	VI.	4	41.370	18 4.1	23.0	4.9	50 47.58	38 39 22.0
41	7	2.0	22.0	42.0	. .	. .	. .	. .	53 1.59	39.58	1.21	III.	2	20.890	39 33.3	22.5	12.3	53 42.38	39 0 58.1
42	9	21.0	. .	. .	. .	39.0	. .	18.5	53 19.22	39.58	1.28	VII.	3	33.340	26 29.7	22.4	7.8	54 0.08	38 47 49.9
43	8	. .	. .	. .	. .	10.0	29.0	. .	55 49.85	39.61	1.26	V.	3	30.665	29 18.2	22.0	8.8	56 30.72	50 39.0
44	7	. .	12.0	31.0	51.0	. .	. .	50.0	57 51.01	39.63	1.33	IV.	4	38.990	20 34.3	21.6	5.8	58 31.97	41 51.7
45	7	. .	12.0	31.5	51.5	. .	. .	50.5	15 57 51.37	39.63	1.33	VII.	4	39.650	19 51.2	21.6	5.5	15 58 32.33	41 8.3
46	8	58.5	18.0	38.0	. .	. .	. .	. .	16 3 57.62	39.68	1.31	III.	3	36.410	23 17.7	20.5	6.7	16 4 38.61	38 44 34.9
47	7	24.0	44.0	3.5	23.0	. .	. .	. .	9 23.37	39.74	1.21	IV.	2	14.300	46 26.7	19.5	14.8	10 4.32	39 7 51.0
48	6	45.0	4.0	24.0	. .	4.0	. .	. .	9 43.98	39.74	1.22	IV.	2	18.280	42 17.2	19.4	13.4	10 24.94	39 3 40.0
49	4	12.0	32.0	51.5	11.3	. .	. .	10.3	16 13 11.27	+39.77	+1.30	IV.	3	31.025	−28 55.7	−18.8	− 8.6	16 13 52.34	−38 50 13.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 21,	16	+ 30.231	+ 0.021	+ 0.505	− 0.353	+ 0.207	0 0 2.18	30.000

REMARKS.

(15) 13. Mic. reading assumed as $31^r.950$ instead of $32^r.950$.

May 21. Very clear; observed all stars which would bear illumination.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 15	May 21, 13 30	77 39 68.0	68.3	73.7	69.7	68.5	58.3	67.75	30.104	65.3	60.7			
	14 29	. .	. .	. .	. .	. .	. .	. .	30.140	64.8	60.9			
	15 11	. .	. .	. .	. .	. .	. .	. .	30.148	65.0	60.3			
	16 3	. .	. .	. .	. .	. .	. .	. .	30.152	64.8	59.8			
	17 1	. .	. .	. .	. .	. .	. .	. .	30.150	64.4	58.5			
	17 38	. .	. .	. .	. .	. .	. .	. .	30.158	64.0	57.5	65.0	62.5	

ZONE 15. MAY 21. P. $D_{\circ}=-38^{\circ}\ 20'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	6.0	26.0	. .	. .	. .	. .	16 20 45.59	+39.84	+1.37	III.	4	40.635	−18 51.1	−17.4	− 5.2	16 21 26.80	−38 40 3.7
51	9	. .	. .	. .	50.0	. .	. .	. .	24 50.05	39.88	1.31	IV.	3	28.890	31 9.6	16.5	9.4	25 31.24	52 25.5
52	7	39.0	58.5	18.3	38.0	. .	. .	. .	27 38.08	39.90	1.33	IV.	3	30.584	29 23.4	16.0	8.8	28 19.31	50 38.2
53	8	. .	24.0	. .	3.0	. .	. .	. .	34 3.24	39.96	1.41	IV.	4	42.180	17 14.1	14.7	4.6	34 44.61	38 23.4
54	7	23.0	. .	2.0	. .	. .	1.0	. .	34 21.79	39.96	1.40	VI.	4	41.455	17 58.7	14.6	4.9	35 3.15	38 39 8.2
55	7	. .	. .	32.0	52.0	. .	. .	51.0	35 51.79	39.97	1.27	IV.	2	16.195	44 27.8	14.3	14.1	36 33.03	39 5 46.2
56	8	. .	. .	. .	. .	25.5	. .	4.0	36 4.99	39.98	1.23	VII.	1	7.095	53 53.7	14.3	17.6	36 46.20	15 15.6
57	8	. .	. .	. .	. .	. .	22.0	. .	16 57 42.37	40.16	1.31	VI.	2	14.130	46 36.6	9.8	14.9	16 58 23.84	39 7 51.3
58	7	18.5	38.0	57.5	17.0	. .	. .	. .	17 1 17.32	40.18	1.47	IV.	4	42.677	16 42.8	9.0	4.4	17 1 58.97	38 37 46.2
59	8	. .	19.3	39.3	59.0	. .	. .	. .	3 58.94	40.20	1.45	IV.	3	40.050	19 29.3	8.4	3.4	4 40.59	38 40 33.1
60	8	. .	22.5	42.0	1.5	. .	. .	. .	6 1.89	40.22	1.29	IV.	1	7.000	54 0.7	8.0	17.6	6 43.40	39 15 16.3
61	9	. .	. .	57.0	16.5	. .	. .	. .	20 16.67	40.33	1.42	IV.	3	27.440	32 40.8	4.8	9.9	20 58.43	38 53 45.5
62	10	. .	. .	. .	. .	. .	. .	. .	20 16. .	40.33	1.37	VII.	2	19.020	41 29.4	4.8	13.1	20 (56.) .	39 2 37.3
63	8	. .	25.0	45.0	5.0	. .	. .	. .	24 4.74	40.35	1.49	IV.	4	39.070	25 43.0	4.0	5.7	24 46.58	38 46 42.7
64	4	. .	52.5	12.0	31.5	. .	. .	30.5	25 31.64	40.36	1.54	IV.	4	48.717	10 23.6	3.7	2.4	26 13.54	38 31 19.7
65	8	5.0	25.0	. .	. .	. .	. .	. .	29 4.57	40.39	1.37	II.	2	15.495	45 11.5	2.9	14.4	29 46.33	39 6 18.8
66	9	. .	. .	. .	. .	. .	. .	22.5	28 22.90	40.38	1.33	VII.	1	7.142	53 50.8	3.0	17.6	29 4.61	39 15 1.4
67	3	26.0	45.7	5.5	25.2	. .	. .	. .	31 25.27	40.40	1.42	IV.	3	24.530	35 43.3	2.3	11.0	32 7.09	38 56 46.6
68	7	4.0	23.0	43.0	3.0	. .	. .	. .	33 2.86	40.41	1.49	IV.	4	37.020	22 38.0	2.0	6.5	33 44.76	38 43 36.5
69	8	25.5	45.0	. .	. .	. .	. .	. .	35 24.90	40.43	1.36	II.	1	10.250	50 37.1	1.4	16.4	36 6.69	39 11 44.9
70	7	21.0	41.0	0.5	20.0	. .	. .	. .	17 38 20.29	+40.45	+1.44	IV.	3	25.660	−34 32.3	− 0.8	−10.6	17 39 2.18	−38 55 33.7

ZONE 16. MAY 25. P. $D_{\circ}=-35^{\circ}\ 49'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
1	8	31.0	. .	. .	28.0	. .	. .	. .	13 8 28.11	+41.20	+1.02	IV.	3	36.790	−22 53.9	−49.9	− 5.2	13 9 10.33	−36 13 29.0
2	3	31.0	50.5	9.5	28.5	. .	. .	. .	11 28.38	41.23	1.18	IV.	4	54.245	4 36.8	49.9	1.0	12 10.79	35 55 7.7
3	8	48.0	7.0	. .	45.0	. .	. .	. .	15 45.13	41.27	1.01	IV.	3	35.282	24 28.7	49.8	5.6	16 27.41	36 15 4.1
4	8	5.5	24.5	43.5	2.5	. .	. .	. .	21 2.59	41.32	1.07	IV.	4	41.680	17 45.4	49.7	4.0	21 44.98	36 8 19.1
5	9	. .	. .	. .	. .	. .	. .	53.0	21 55.95	41.33	1.19	VII.	4	54.880	3 55.1	49.7	0.8	22 38.47	35 54 25.6
6	7	. .	. .	. .	. .	. .	8.0	27.5	23 30.16	41.35	1.10	VI.	4	44.930	14 20.4	49.6	3.2	24 12.61	36 4 53.2
7	7	40.5	. .	18.5	37.7	. .	. .	. .	27 37.71	41.39	0.98	IV.	3	30.670	29 18.0	49.5	6.7	28 20.08	19 54.2
8	9	21.0	. .	59.5	. .	. .	. .	. .	30 18.47	41.41	0.93	III.	3	25.395	34 48.9	49.4	8.0	31 0.81	25 26.3
9	9	. .	. .	41.5	. .	. .	. .	. .	33 0.64	41.44	0.84	V.	2	14.500	46 14.0	49.3	10.8	33 42.92	36 54.1
10	9	. .	15.0	. .	52.0	. .	. .	. .	36 52.59	41.48	1.08	IV.	4	40.315	19 11.3	49.1	4.3	37 35.15	9 44.7
11	8	. .	. .	4.0	23.0	. .	. .	. .	38 23.08	41.49	1.04	IV.	4	36.330	23 21.4	49.1	5.3	39 5.61	13 55.8
12	5	. .	. .	. .	12.0	31.0	50.0	9.0	39 11.85	41.50	0.96	IV.	3	28.093	31 59.7	49.0	7.4	39 54.31	22 36.1
13	8	57.0	16.0	36.0	. .	. .	. .	. .	41 54.68	41.53	0.85	III.	2	12.740	48 4.2	48.9	11.2	42 37.06	38 44.3
14	8	. .	. .	. .	. .	17.0	36.0	. .	42 57.96	41.54	1.12	VI.	4	44.360	14 56.4	48.9	3.3	43 40.62	5 28.6
15	8	. .	. .	. .	38.0	57.0	15.5	. .	44 37.80	41.55	1.09	VI.	4	42.615	16 45.8	48.8	3.8	45 20.44	7 18.4
16	8	. .	. .	. .	. .	. .	25.0	44.0	47 46.70	41.59	0.95	VII.	3	25.080	35 8.0	48.6	8.1	48 29.24	25 44.7
17	7	. .	52.0	11.0	30.0	. .	. .	. .	51 30.23	41.62	0.81	IV.	1	7.330	53 40.2	48.4	12.6	52 12.66	44 21.2
18	8	. .	. .	. .	. .	. .	23.0	42.0	51 44.60	41.63	0.87	VI.	2	15.200	45 29.7	48.4	10.6	52 27.10	36 8.7
19	9	28.0	48.0	7.0	. .	. .	. .	. .	54 26.07	41.65	0.81	III.	2	7.700	53 19.8	48.2	12.5	55 8.53	44 0.5
20	7	31.0	50.0	9.0	. .	47.5	6.5	. .	54 28.27	41.65	0.90	VI.	2	18.810	41 43.2	48.2	9.7	55 10.82	32 21.1
21	8	. .	. .	. .	. .	. .	. .	16.0	13 55 18.87	41.66	1.14	VII.	4	47.210	11 56.8	48.1	2.7	13 56 1.67	2 27.6
22	7	24.5	. .	2.0	21.0	. .	. .	. .	14 0 21.28	41.71	1.04	IV.	3	33.585	26 15.1	47.8	6.0	14 1 4.03	36 16 48.9
23	9	. .	. .	45.0	. .	. .	. .	. .	4 4.00	41.75	1.23	VI.	4	54.550	4 16.6	47.6	0.9	4 46.98	35 54 45.1
24	7	40.0	59.0	18.0	37.0	. .	. .	. .	14 9 37.15	+41.80	+1.03	IV.	3	32.110	−27 47.7	−47.1	− 6.3	14 10 19.98	−36 18 21.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 25,	16	+ 33.686	+ 0.044	+ 0.505	+ 0.353	+ 0.207	0 0 2.25	29.999

REMARKS.

(15) 63. Micrometer assumed as $34^{r}.070$ instead of $39^{r}.070$.

May 25. Readings of Bar. and Ther. at $15^{h}\ 35^{m}$; no clouds apparent until $17^{h}\ 15^{m}$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 16	May 25,	13 8	. .	. .	. .	. .	. .	. .	. .	30.060	78.0	76.5			
		14 26	. .	. .	. .	. .	. .	. .	. .	30.056	76.0	74.5			
		15 51	. .	. .	. .	. .	. .	. .	. .	30.046	75.7	72.0			
		18 17	75 9 60.0	55.4	64.6	57.3	55.2	47.0	56.58	30.014	73.0	69.4	. .	. .	7.3

ZONE 16. MAY 25. P. $D_0 = -35° 49' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	9	. .	. .	. .	. .	. .	36.0	. .	14 9 57.93	+41.81	+1.11	VII.	4	40.210	−19 16.3	−47.1	− 4.3	14 10 40.85	−36 9 47.7
26	9	. .	. .	. .	. .	. .	29.0	. .	26 50.96	41.97	1.16	VI.	4	44.430	14 52.0	45.6	3.3	27 34.09	5 20.9
27	7	40.0	. .	18.3	37.0	. .	. .	. .	38 37.09	42.08	1.22	VII.	4	49.405	9 39.0	44.4	2.1	39 20.39	0 5.5
28	.	. .	57.0	. .	. .	. .	. .	. .	14 49 35. .	42.19	. .	.	.	. .	. . .	. .	. .	14 50 (17.) .	
29	8	18.0	37.0	56.0	15.3	. .	. .	. .	15 9 15.30	42.39	0.99	IV.	2	18.675	41 52.3	40.7	9.7	15 9 58.68	32 22.7
30	4	54.5	13.3	32.5	51.5	. .	. .	48.7	12 51.56	42.42	1.09	IV.	3	31.435	28 30.1	40.2	6.5	13 35.07	18 56.8
31	5	1.5	20.5	39.5	58.5	. .	. .	55.5	16 58.55	42.46	1.13	IV.	3	35.955	23 46.3	39.6	5.4	17 42.14	14 11.3
32	5	35.3	54.0	13.5	32.5	. .	. .	. .	51 32.48	42.78	1.13	IV.	3	31.265	28 40.8	34.1	6.6	52 16.39	19 1.5
33	7	. .	. .	. .	48.0	. .	26.7	46.0	52 48.28	42.79	0.94	VII.	1	8.723	52 11.8	33.9	12.3	53 32.01	42 38.0
34	4	4.0	. .	42.0	1.0	. .	. .	. .	56 1.16	42.82	1.09	IV.	3	27.175	32 57.3	33.4	7.6	56 45.07	23 18.3
35	5	44.0	3.0	. .	41.0	. .	. .	. .	56 41.17	42.82	1.12	IV.	3	29.760	30 15.0	33.3	6.9	57 25.11	20 35.2
36	6	. .	. .	. .	. .	19.0	38.0	57.0	15 56 59.79	42.82	1.13	VI.	3	31.613	28 18.5	33.2	6.5	15 57 43.74	18 38.2
37	7	46.0	5.0	24.0	43.3	. .	. .	. .	16 7 43.17	42.92	1.22	IV.	3	38.363	21 15.3	31.2	4.8	16 8 27.31	36 11 31.3
38	9	. .	. .	. .	32.0	. .	. .	31.0	9 32. .	42.93	1.36	VII.	4	54.300	4 31.7	30.9	0.9	10 (16.) .	35 54 43.5
39	9	12.0	31.0	50.0	. .	. .	. .	. .	13 9.08	42.96	1.26	IV.	4	43.925	15 24.4	30.2	3.4	13 53.30	36 5 38.0
40	9	. .	. .	. .	0.0	. .	. .	. .	28 0.05	43.08	1.07	IV.	2	18.100	42 28.4	27.2	9.9	28 44.20	32 45.5
41	8	. .	. .	. .	24.0	43.0	2.0	. .	29 23.96	43.10	1.24	VI.	3	38.990	20 35.5	27.0	4.6	30 8.30	10 47.1
42	8	. .	43.5	2.0	21.5	. .	. .	. .	32 21.46	43.12	1.16	IV.	F W	29.999	30 0.0	26.3	6.9	33 5.74	20 13.2
43	7	27.0	. .	6.0	. .	. .	. .	. .	37 24.80	43.16	1.03	III.	2	14.450	46 17.3	25.3	10.8	38 8.99	36 33.4
44	8	28.0	. .	7.0	. .	. .	4.0	23.0	37 25.70	43.16	1.04	VI.	2	14.133	46 36.5	25.3	10.9	38 9.90	36 52.7
45	8	. .	. .	. .	. .	. .	. .	37.5	38 40.29	43.17	1.27	VII.	4	41.410	18 1.0	25.0	4.0	39 24.73	8 10.0
46	8	. .	. .	. .	. .	. .	49.0	8.0	40 10.65	43.18	1.10	VII.	2	21.445	38 57.7	24.7	9.1	40 54.93	29 11.5
47	7	. .	. .	. .	. .	21.0	40.0	59.0	42 1.58	43.20	0.96	V.	1	6.273	54 46.3	24.3	13.0	42 45.74	36 45 3.6
48	7	. .	. .	. .	54.0	. .	32.0	. .	43 54.00	43.21	1.36	VI.	4	50.770	8 13.8	23.9	1.7	44 38.57	35 58 19.4
49	7	7.5	27.5	46.0	5.0	. .	. .	. .	52 5.29	43.27	1.03	IV.	2	12.777	48 1.9	22.1	11.3	52 49.59	36 38 15.3
50	7	55.0	15.0	. .	. .	. .	. .	. .	54 52.84	43.29	1.09	II.	2	19.160	41 21.8	21.5	9.6	55 37.22	31 32.9
51	8	. .	. .	. .	. .	23.0	. .	. .	55 3.84	43.29	1.17	V.	3	27.780	32 19.3	21.5	7.4	55 48.30	22 28.2
52	7	45.0	4.0	23.5	42.0	. .	. .	. .	57 42.31	43.31	1.13	IV.	3	24.285	35 58.7	20.9	8.3	16 58 26.75	26 7.9
53	8	2.0	. .	40.0	. .	. .	. .	. .	16 59 59.14	43.33	1.24	IV.	3	36.950	22 43.9	20.4	5.1	17 0 43.71	12 49.4
54	8	. .	12.0	31.0	50.0	. .	. .	. .	17 7 50.08	43.38	1.32	III.	4	43.843	15 29.7	18.6	3.4	8 34.78	55 1.6
55	9	43.0	2.0	21.0	40.0	. .	. .	. .	11 40.16	43.41	1.19	IV.	3	28.583	31 29.0	17.7	7.2	12 24.76	21 33.9
56	8	. .	. .	. .	. .	11.0	30.5	50.0	13 52.29	43.43	1.21	VII.	3	31.230	28 42.3	17.2	6.6	14 36.93	18 46.1
57	7	58.5	17.0	36.5	55.5	. .	. .	. .	16 55.56	43.45	1.17	IV.	3	26.837	33 18.4	16.5	7.7	17 40.18	23 22.6
58	6	. .	. .	44.0	3.0	22.0	. .	. .	18 2.97	43.46	1.05	IV.	2	12.173	48 39.8	16.3	11.5	18 47.48	38 47.6
59	7	. .	56.0	15.0	. .	. .	. .	. .	24 34.18	43.50	1.18	IV.	3	26.390	33 46.7	14.7	7.8	25 18.86	23 49.2
60	7	51.0	10.0	29.5	48.5	. .	. .	. .	40 48.43	43.60	1.19	IV.	3	25.100	35 7.4	10.8	8.1	41 33.22	25 6.3
61	7	39.0	58.0	17.0	36.0	. .	. .	. .	42 36.21	43.61	1.16	IV.	3	22.400	37 56.9	10.4	8.8	43 20.98	27 56.1
62	8	. .	. .	. .	26.0	. .	. .	. .	43 26.06	43.61	1.23	IV.	3	29.900	30 6.2	10.2	6.9	44 10.90	20 3.3
63	6	. .	. .	. .	14.0	33.3	. .	. .	44 14.09	43.62	1.18	IV.	3	23.860	36 25.1	10.0	8.4	44 58.89	36 26 23.5
64	7	8.0	27.0	46.0	5.0	. .	. .	. .	47 5.03	43.63	1.42	IV.	4	50.000	9 3.1	9.3	1.9	47 50.08	35 58 54.3
65	7	. .	. .	. .	17.0	. .	. .	. .	48 16.98	43.64	1.41	IV.	4	48.300	10 50.0	9.0	2.3	49 2.03	36 0 41.3
66	8	. .	. .	. .	. .	. .	. .	33.5	48 36.40	43.64	1.42	VII.	4	48.935	10 8.3	8.9	2.2	49 21.46	35 59 59.4
67	6.7	. .	. .	36.0	55.0	. .	. .	. .	50 55.09	43.66	1.23	IV.	3	28.850	32 2.3	8.4	7.4	51 39.98	36 21 58.1
68	8.9	. .	. .	57.5	. .	35.5	54.5	. .	51 16.43	43.66	1.23	VI.	3	29.025	31 0.9	8.3	7.1	52 1.32	36 20 56.3
69	5	2.5	. .	40.3	. .	. .	. .	. .	53 59.35	43.67	1.46	III.	4	54.690	4 9.6	7.6	0.8	54 44.48	35 53 (57.) .
70	4	34.0	52.5	11.5	30.7	. .	. .	. .	55 30.73	43.68	1.40	IV.	4	47.490	11 40.7	7.2	2.5	56 15.81	36 1 30.4
71	8	. .	. .	30.0	49.5	. .	. .	. .	56 49.33	43.69	1.29	IV.	3	35.750	23 59.2	6.9	5.4	57 34.31	13 51.5
72	7	. .	. .	8.0	27.5	. .	. .	. .	17 58 27.34	43.70	1.08	IV.	1	9.570	51 19.9	6.5	12.2	17 59 12.12	41 18.6
73	8	. .	10.0	29.0	. .	. .	. .	. .	18 1 48.21	+43.72	+1.17	III.	2	19.960	−40 31.7	− 5.6	− 9.5	18 2 33.10	−36 30 26.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(16) 54. Assumed an error of 10^r, making micrometer reading $53^r.843$.

(16) 67. Micrometer reading assumed as $28^r.050$ instead of $28^r.850$.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 16. MAY 25. P. $D_\circ = -35° \ 49' \ 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
74	6	59.0	18.0	37.3	56.5	. .	. .	. .	18 4 56.46	+43.73	+1.11	IV.	2	13.920	−46 50.3	− 4.9	−11.0	18 5 41.30	−36 36 46.2
75	8	29.3	48.0	7.0	. .	. .	. .	. .	9 26.36	43.76	1.18	III.	2	21.250	39 11.0	3.7	9.1	10 11.30	29 3.8
76	4	1.0	20.0	. .	. .	. .	. .	. .	11 58.55	43.77	1.07	II.	1	6.960	54 2.8	3.1	12.9	12 43.39	43 58.8
77	4	. .	58.0	17.0	36.3	. .	. .	. .	12 36.22	43.77	1.27	IV.	3	31.445	28 29.5	2.9	6.5	13 21.26	18 18.9
78	6	34.0	52.7	11.7	30.5	. .	. .	. .	14 30.79	43.78	1.39	IV.	4	45.060	14 13.2	2.5	3.1	15 15.96	3 58.8
79	7	. .	. .	13.0	32.0	. .	. .	. .	16 32.04	43.79	1.38	IV.	4	43.300	16 3.9	2.0	3.5	17 17.21	5 49.4
80	8	. .	. .	16.5	35.0	. .	. .	. .	18 17 35.28	+43.80	+1.40	IV.	4	45.650	−13 36.1	− 1.7	− 2.9	18 18 20.48	−36 3 20.7

ZONE 17. MAY 27. C. $D_\circ = -37° \ 5' \ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.10	. .	. .	. .	. .	48.0	. .	. .	13 33 28.54	+43.08	+0.99	V.	3	31.148	−28 48.0	−11.9	− 8.0	13 34 12.61	−37 34 37.9
2	9.10	. .	. .	. .	. .	. .	31.0	. .	33 52.24	43.08	1.01	VI.	3	35.620	24 7.1	11.9	6.8	34 36.33	29 55.8
3	9	. .	2.5	. .	41.0	. .	. .	. .	37 41.15	43.12	1.03	IV.	3	38.649	20 57.3	11.6	5.9	38 25.30	26 44.8
4	9	. .	3.0	22.0	41.2	0.5	20.5	. .	38 41.45	43.13	1.00	IV.	3	34.925	24 50.9	11.6	7.0	39 25.58	30 39.5
5	9	. .	36.0	55.0	14.3	. .	. .	. .	41 14.49	43.16	1.06	IV.	4	41.832	17 35.8	11.4	5.0	41 58.71	23 22.2
6	9.10	. .	. .	. .	3.2	22.0	. .	. .	42 2.85	43.17	0.89	IV.	2	14.129	46 37.3	11.3	13.1	42 46.91	52 31.7
7	9	. .	57.0	16.5	. .	. .	. .	. .	46 36.02	43.21	0.89	II.	2	11.249	49 37.5	10.9	14.0	47 20.12	55 32.4
8	9	. .	. .	52.0	. .	. .	50.0	9.5	47 11.25	43.22	0.98	IV.	3	26.351	33 49.1	10.9	9.4	47 55.45	39 39.4
9	8.9	. .	. .	. .	3.5	. .	43.0	2.0	47 3.82	43.22	1.01	IV.	3	30.898	29 3.6	10.9	8.1	47 48.05	34 52.6
10	9	. .	. .	45.2	. .	. .	43.0	. .	51 4.45	43.26	1.08	IV.	3	41.631	17 50.0	10.6	5.0	51 48.79	23 35.6
11	9	. .	. .	55.0	14.0	. .	. .	. .	51 14.17	43.26	1.12	IV.	3	47.884	11 17.3	10.6	3.3	51 58.55	17 1.2
12	9	. .	. .	. .	18.7	. .	. .	. .	54 18.75	43.29	0.96	IV.	3	22.082	38 16.7	10.3	10.7	55 3.00	44 7.7
13	9	. .	. .	53.0	12.0	. .	51.0	. .	55 12.22	43.30	1.02	IV.	3	32.280	27 37.1	10.2	7.7	55 56.54	33 25.0
14	9	. .	22.0	41.0	. .	. .	. .	. .	59 0.60	43.34	1.06	III.	3	35.935	23 47.3	9.9	6.7	13 59 45.00	29 33.9
15	9	. .	. .	21.2	41.0	0.0	. .	. .	13 59 40.73	43.35	0.98	IV.	2	23.111	37 14.2	9.9	10.4	14 0 25.06	43 4.5
16	9	. .	. .	3.2	22.8	42.0	. .	. .	14 1 22.64	43.36	1.16	IV.	4	53.046	5 51.9	9.8	1.8	2 7.16	11 33.5
17	9	. .	. .	. .	. .	. .	35.0	. .	4 56.14	43.40	0.99	IV.	3	25.431	34 46.8	9.5	9.7	5 40.53	40 36.0
18	9	. .	47.0	. .	. .	46.0	5.0	. .	7 26.27	43.43	1.15	IV.	4	49.800	9 15.6	9.2	2.7	8 10.85	14 57.5
19	5	. .	. .	23.1	42.5	1.8	21.0	40.5	10 42.45	43.46	1.17	IV.	4	53.061	5 51.0	9.0	1.8	11 27.08	11 31.8
20	9	. .	. .	. .	25.0	44.0	. .	. .	16 24.72	43.52	0.92	IV.	3	10.661	50 12.4	8.5	14.1	17 9.16	56 5.0
21	8.9	. .	. .	. .	28.5	48.0	8.0	. .	18 28.68	43.54	0.95	IV.	2	13.756	47 0.6	8.3	13.2	19 13.17	52 52.1
22	9	. .	. .	. .	48.0	. .	27.0	. .	21 48.05	43.57	0.95	IV.	2	13.311	47 28.6	8.0	13.3	22 32.57	53 19.9
23	9	. .	. .	57.0	16.0	36.1	55.0	. .	25 16.27	43.61	0.97	IV.	2	15.891	44 46.8	7.7	12.5	26 0.85	50 37.0
24	5	. .	16.0	. .	54.9	14.0	33.6	52.5	31 54.79	43.67	1.22	IV.	4	55.679	3 7.4	7.1	1.1	32 39.68	8 45.6
25	9	. .	. .	. .	26.0	. .	4.0	. .	35 25.67	43.71	1.17	IV.	3	45.960	13 18.1	6.7	3.8	36 10.55	18 58.6
26	7	. .	. .	. .	. .	16.5	35.7	55.0	36 56.84	43.72	1.05	V.	2	26.748	33 25.9	6.6	9.4	37 41.61	39 11.9
27	9	. .	. .	. .	11.0	. .	. .	. .	41 11.05	43.77	1.03	IV.	2	21.360	39 4.1	6.1	10.9	41 55.85	44 51.1
28	8	. .	. .	37.0	56.0	15.7	35.0	. .	42 56.22	43.78	1.07	IV.	3	27.681	32 25.5	6.0	9.0	43 41.07	38 10.5
29	9	. .	. .	18.5	. .	. .	. .	. .	48 37.94	43.84	1.05	IV.	3	23.551	36 44.6	5.3	10.3	49 22.83	42 30.2
30	7	. .	. .	. .	. .	. .	40.0	59.7	49 1.51	43.85	1.20	V.	4	48.231	10 53.9	5.2	3.2	49 46.56	16 32.4
31	7	. .	. .	39.1	58.5	18.0	37.0	56.7	50 58.47	43.86	1.14	IV.	3	37.885	21 45.1	5.1	6.1	51 43.47	27 26.3
32	9	. .	. .	. .	32.5	51.2	. .	. .	53 32.12	43.89	1.05	IV.	3	22.568	37 46.3	4.8	10.5	54 17.06	43 31.6
33	8.9	. .	10.0	. .	49.0	9.0	. .	47.5	14 56 49.20	43.92	1.18	IV.	4	43.390	15 58.2	4.4	4.5	14 57 34.30	21 37.1
34	9	. .	. .	57.0	. .	36.0	. .	. .	15 0 16.50	43.96	1.17	IV.	3	39.115	20 28.0	3.9	5.8	15 1 1.63	26 7.7
35	8	. .	9.3	29.0	48.5	. .	27.2	. .	3 48.39	43.99	1.00	IV.	2	11.131	49 45.0	3.5	14.0	4 33.38	55 32.5
36	8	. .	58.5	. .	37.4	57.0	16.0	. .	6 37.38	44.02	1.02	IV.	2	13.252	47 32.3	3.1	13.4	7 22.42	53 18.8
37	7.8	. .	27.5	46.7	6.0	25.6	44.8	4.5	11 6.15	44.06	1.10	IV.	3	25.595	34 36.4	2.5	9.6	11 51.31	40 18.5
38	7.8	. .	2.0	21.5	41.0	0.5	19.8	. .	15 14 40.98	+44.10	+1.12	IV.	3	27.872	+32 13.5	− 1.9	− 9.0	15 15 26.20	− 37 54.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 27,	16	+ 35.269	+ 0.038	+ 0.505	+ 0.353	+ 0.207	0 0 2.73	30.005

REMARKS.

May 27. Night poor; hazy horizon.
$14^h \ 50^m$, cloud bank rising; magnitudes doubtful.
$15^h \ 27^m$, stopped by clouds.
$19^h \ 20^m$, resumed sweep.
$19^h \ 33^m$, again interrupted by clouds.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 17	May 27,	13 33	76 24 58.8	52.1	62.9	56.0	52.1	46.0	54.65	29.739	78.0	75.5	78.0	77.0	77.5
		13 59	. .	. .	. .	. .	. .	. .	. .	29.738	78.0	75.9			
		14 31	57.6	52.2	62.2	56.0	52.7	45.1	54.30	29.732	77.2	75.0	76.8	76.4	
		15 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.0			
		15 26	. .	. .	. .	. .	. .	. .	. .	29.720	76.8	73.5			
		15 30	57.0	52.8	62.7	55.1	53.0	45.0	54.27	. .	. .	. .	76.5	75.6	77.5
		19 20	60.9	58.0	67.0	61.1	57.9	49.1	59.00	. .	. .	. .	74.0	74.4	77.5
		19 25	. .	. .	. .	. .	. .	. .	. .	29.704	74.5	69.4			

Zone 17. May 27. C. $D_\circ = -37^\circ\ 5'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
39	9.10	. .	. .	. .	. .	55.0	14.8	14.8	15 15 35.98	+44.10	+1.10	V.	3	25.531	−34 40.4	− 1.8	− 9.7	15 16 21.18	−37 40 21.9
40	9	. .	. .	. .	11.0	30.0	. .	. .	20 10.81	44.16	1.28	IV.	4	54.340	4 31.4	1.1	1.5	20 56.25	10 4.0
41	8.9	. .	. .	. .	2.5	22.0	41.0	. .	22 2.44	44.17	1.15	IV.	3	32.230	27 40.2	0.8	7.7	22 47.76	33 18.7
42	9	. .	. .	3.5	. .	43.0	2.0	. .	15 26 23.20	+44.21	+1.12	IV.	3	25.298	−34 55.1	− 0.1	− 9.8	15 27 8.53	−37 40 35.0

Zone 18. May 27. C. $D_\circ = -37^\circ\ 4'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	. .	. .	. .	28.0	. .	. .	19 25 10.68	+44.65	+1.66	V.	4	55.831	− 2 57.5	−12.3	− 1.0	19 25 56.99	−37 7 40.8
2	9	. .	37.0	. .	. .	35.0	. .	. .	29 15.71	44.66	1.45	IV.	3	20.981	39 25.7	11.2	11.1	30 1.82	44 18.0
3	8.9	. .	10.0	. .	49.0	. .	28.0	. .	19 32 49.03	+44.66	+1.44	IV.	2	17.521	−43 4.8	−10.3	−12.1	19 33 36.13	−37 47 57.2

Zone 19. June 3. P. $D_\circ = -30^\circ\ 49'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	27.0	45.0	. .	12 51 9.00	+50.29	+1.37	VI.	3	35.573	−24 10.1	−43.3	− 4.8	12 52 0.66	−31 13 58.2
2	8	. .	13.5	. .	49.5	. .	. .	. .	13 0 49.54	50.35	1.34	V.	3	32.095	27 48.6	43.2	5.3	13 1 41.23	17 37.1
3	5	. .	2.0	20.0	38.0	. .	. .	32.0	3 38.01	50.37	1.38	IV.	4	45.340	13 55.8	43.1	3.3	4 29.76	3 42.2
4	.	. .	. .	. .	. .	24.0	. .	. .	13 6.02	50.43	. .	.	.	. .	. . .	. .	. .	13 (56.) .	
5	7	50.0	. .	26.0	44.0	. .	. .	. .	20 44.04	50.48	1.27	IV.	3	25.360	34 51.3	42.9	6.4	21 35.79	24 40.6
6	6	. .	. .	. .	16.5	34.5	. .	. .	22 16.50	50.49	1.27	IV.	3	28.035	32 3.3	42.7	6.0	23 8.26	21 52.0
7	7	. .	. .	. .	. .	24.0	32.0	. .	22 55.94	50.49	1.29	VI.	3	32.703	27 10.2	42.6	5.2	23 57.72	16 58.0
8	6	58.7	16.5	34.5	53.0	. .	. .	. .	25 52.70	50.49	1.26	IV.	3	23.650	36 38.4	42.6	6.7	26 44.45	26 27.7
9	7	. .	. .	. .	. .	. .	. .	19.5	26 25.32	50.51	1.22	VII.	2	14.340	46 23.3	42.5	8.1	27 17.05	36 13.9
10	7	. .	. .	. .	. .	. .	1.0	19.0	27 24.82	50.52	1.21	VI.	2	12.335	48 29.3	42.4	8.5	28 16.55	38 20.2
11	8	. .	. .	. .	. .	. .	. .	11.0	28 16.82	50.53	1.20	VII.	2	14.965	45 43.9	42.4	8.0	29 8.55	35 34.3
12	8	52.0	. .	28.0	. .	4.0	. .	. .	34 45.94	50.57	1.29	VI.	4	45.480	13 46.4	42.1	3.2	35 37.80	31 3 31.7
13	.	49.0	. .	. .	. .	. .	. .	. .	38 42.82	50.59	. .	.	.	. .	. . .	. .	. .	39 (33.)	
14	4	. .	. .	16.0	34.0	. .	. .	. .	42 33.95	50.62	1.32	IV.	4	55.170	2 35.9	41.7	1.5	43 25.89	30 52 18.1
15	3	. .	. .	. .	. .	. .	. .	. .	44 . .	50.63	1.24	VII.	3	38.300	21 18.7	41.	4.3	45 . .	31 11 4.6
16	6	58.0	15.5	33.7	52.0	. .	. .	. .	49 51.73	50.66	1.26	IV.	4	48.230	10 54.3	41.2	2.8	50 43.65	31 0 38.3
17	5	1.0	19.0	37.0	55.0	. .	. .	. .	51 54.91	50.68	1.29	IV.	4	55.180	3 38.1	41.1	1.7	52 46.88	30 53 20.9
18	4	. .	52.5	10.0	28.5	. .	. .	. .	53 28.24	50.69	1.26	IV.	4	51.075	7 55.7	41.0	2.4	54 20.19	30 57 39.1
19	8	4.0	. .	41.0	. .	. .	. .	. .	13 57 58.43	50.72	1.21	III.	4	39.830	19 41.7	40.6	4.1	13 58 50.36	31 9 26.4
20	4	20.5	39.0	57.0	. .	. .	. .	. .	14 1 14.87	50.74	1.16	III.	3	27.990	32 6.0	40.4	6.0	14 2 6.77	21 52.4
21	8	52.0	. .	. .	46.0	. .	. .	. .	1 46.02	50.74	1.17	IV.	3	29.515	30 30.6	40.3	5.7	2 37.93	20 16.6
22	5	. .	. .	. .	. .	. .	27.0	45.0	1 50.92	50.74	1.14	VI.	3	22.575	37 45.6	40.3	6.8	2 42.80	27 32.7
23	6	21.5	40.0	58.0	16.0	. .	. .	. .	4 15.85	50.76	1.15	IV.	3	29.460	30 34.0	40.1	5.7	5 7.76	20 19.8
24	7	. .	. .	. .	6.0	. .	. .	. .	5 6.01	50.76	1.21	IV.	4	44.175	15 8.9	40.0	3.4	5 57.98	4 52.3
25	5	45.0	3.0	21.0	39.0	. .	. .	. .	6 39.02	50.77	1.14	IV.	3	28.450	31 37.4	39.9	5.9	7 30.93	21 23.2
26	8	21.0	39.0	. .	14.0	. .	. .	. .	11 14.63	50.80	1.18	IV.	4	41.100	18 21.9	39.5	3.9	12 6.61	8 5.3
27	7	56.0	14.0	32.0	. .	. .	. .	. .	12 49.93	50.81	1.20	III.	4	47.450	11 43.4	39.4	2.9	13 41.94	31 1 25.7
28	8	. .	. .	. .	. .	. .	10.0	. .	12 34.15	50.81	1.21	VII.	4	49.790	9 14.8	39.4	2.5	13 26.17	30 58 56.7
29	7	3.5	21.5	39.5	57.0	. .	. .	. .	17 57.34	50.84	1.14	IV.	3	38.083	21 32.8	38.9	4.4	18 49.32	31 11 16.1
30	8	59.0	. .	36.0	. .	. .	. .	. .	21 13.52	50.87	1.10	III.	3	28.790	31 15.8	38.6	5.8	22 5.49	21 0.2
31	6	. .	. .	. .	13.0	31.0	49.0	. .	22 12.94	50.87	1.05	V.	2	14.265	46 28.8	38.5	8.2	23 4.86	36 15.5
32	5	. .	42.0	0.0	18.0	. .	. .	. .	24 18.03	50.88	1.11	IV.	3	32.060	27 50.8	38.2	5.3	25 10.02	17 34.3
33	7	49.0	. .	. .	42.0	. .	. .	. .	28 42.48	50.91	1.10	IV.	3	33.725	26 6.3	37.8	5.0	29 34.49	15 49.1
34	7	41.0	59.0	17.0	35.5	. .	. .	. .	14 36 35.07	+50.96	+1.12	IV.	4	46.070	−13 9.8	−36.9	− 3.1	14 37 27.15	−31 2 49.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 3,	16	+ 42.761	+ 0.008	+ 0.198	+ 0.396	+ 0.247	0 0 2.46	30.002

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 18	May 27, 19 32	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.9			
Zone 19	June 3, 13 0	70 9 62.6	59.6	68.3	62.0	58.0	50.4	60.15	30.062	75.0	71.5			
	13 20	. .	. .	. .	. .	. .	. .	. .	30.066	74.0	70.0			
	14 24	. .	. .	. .	. .	. .	. .	. .	30.066	72.0	68.5			
	16 0	. .	. .	. .	. .	. .	. .	. .	30.038	71.0	67.5	71.0		
	17 0	. .	. .	. .	. .	. .	. .	. .	30.032	71.0	66.8			

REMARKS.

(18) 1. Transit over T. V assumed as 30ˢ.0, not 28ˢ.0, to agree with Transit, 1846, August 12, and Mural, 1846, August 20.

(18) 3. Differs 5′ in δ from Mural, Aug. 20.

(19) 7. Minutes assumed as 23 instead of 22.

(19) 14. Micrometer reading assumed as 56ʳ.170 not 55ʳ.170.

June 3. Lamp which illuminated the wires frequently extinguished by the wind.

ZONE 19. JUNE 3. P. $D_0 = -30° \; 49' \; 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	6	. .	23.0	41.5	59.0	. .	. .	. .	14 37 59.24	+50.97	+1.01	IV.	2	13.620	−47 9.2	−36.7	− 8.2	14 38 51.22	−31 36 54.1
36	7	41.0	59.5	17.5	35.0	. .	. .	. .	42 35.29	51.00	1.03	IV.	3	26.515	33 38.8	36.2	6.2	43 27.32	23 21.2
37	8	. .	. .	16.0	34.0	52.0	. .	. .	43 34.00	51.01	1.02	V.	3	22.485	37 51.5	36.1	6.8	44 26.03	27 34.4
38	7	. .	. .	. .	. .	. .	43.0	1.0	44 7.11	51.01	1.11	VI.	4	48.060	11 4.3	36.0	2.8	44 59.23	0 43.1
39	8	. .	36.5	. .	13.0	31.0	. .	. .	48 12.84	51.04	1.06	VI.	3	39.225	20 20.9	35.5	4.2	49 4.94	31 10 0.6
40	5	. .	. .	. .	51.0	9.0	. .	. .	51 51.00	51.06	1.11	V.	4	51.950	7 0.3	35.0	2.2	52 43.17	30 56 37.5
41	8	. .	. .	. .	. .	. .	53.0	10.5	52 16.88	51.06	1.10	VII.	4	49.070	10 0.1	34.9	2.7	53 9.04	30 59 37.7
42	7	. .	. .	. .	11.0	29.0	47.5	. .	54 11.17	51.07	1.02	IV.	3	29.080	30 57.8	34.7	5.8	55 3.26	31 20 38.3
43	8	. .	. .	41.0	. .	17.0	. .	52.0	56 58.69	51.09	1.07	VII.	4	45.380	13 51.8	34.3	3.2	14 57 50.85	3 29.3
44	7	. .	7.0	25.0	43.0	. .	. .	. .	14 59 43.08	51.11	0.95	IV.	2	16.150	44 30.6	33.9	7.9	15 0 35.14	31 34 12.4
45	4	40.7	58.7	16.5	34.5	. .	. .	28.5	15 4 34.53	51.14	1.07	IV.	4	51.310	7 41.1	33.2	2.3	5 26.74	30 57 16.6
46	8	. .	. .	. .	9.0	. .	. .	. .	6 9.04	51.15	0.99	IV.	3	33.060	26 48.0	33.0	5.2	7 1.18	31 16 26.2
47	7	19.5	37.5	. .	13.5	. .	. .	. .	8 13.52	51.16	0.99	IV.	3	31.840	28 4.5	32.7	5.3	9 5.67	17 42.5
48	8	. .	. .	. .	. .	. .	47.0	. .	9 10.94	51.17	0.95	VI.	3	21.355	39 2.2	32.5	7.1	10 3.06	28 41.8
49	7	7.5	25.5	43.0	1.5	. .	. .	. .	12 1.49	51.19	0.91	IV.	2	11.817	49 2.0	32.1	8.6	12 53.59	38 42.7
50	8	. .	. .	1.0	. .	. .	55.0	. .	13 19.01	51.19	0.98	VI.	3	33.515	26 19.3	31.9	5.1	14 11.18	15 56.3
51	7	. .	. .	. .	35.5	. .	12.0	. .	14 35.78	51.20	0.97	VI.	3	36.310	23 24.0	31.7	4.6	15 27.95	13 0.3
52	6	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	VII+	2	13.250	47 32.0	31.	8.4	(17) . .	31 37 (10.)
53	6	44.5	2.0	20.5	38.5	. .	. .	. .	18 38.30	51.23	1.02	IV.	4	51.546	7 26.1	31.1	2.3	19 30.55	30 56 59.5
54	8	. .	. .	. .	. .	49.0	. .	. .	22 30.93	51.25	0.92	V.	3	25.920	34 15.9	30.5	6.3	23 23.10	31 23 52.7
55	8	. .	. .	59.0	. .	. .	54.0	. .	25 17.50	51.27	0.92	IV.	3	26.770	33 22.6	30.0	6.2	26 9.69	22 58.8
56	7	. .	. .	47.0	4.5	. .	. .	. .	27 4.79	51.28	0.88	IV.	2	16.920	43 42.2	29.7	7.8	27 56.95	33 19.7
57	7	. .	. .	. .	. .	. .	52.0	10.0	27 16.10	51.28	0.98	VI.	4	47.280	11 53.4	29.7	2.9	28 8.36	1 26.0
58	8	. .	. .	7.0	. .	. .	0.0	. .	29 24.50	51.29	0.90	VI.	3	27.070	33 3.6	29.3	6.1	30 16.69	22 39.0
59	7	. .	55.5	13.5	31.5	. .	. .	. .	31 31.54	51.31	0.90	IV.	3	28.190	31 53.7	29.0	5.9	32 23.75	21 28.6
60	7	. .	. .	. .	26.0	. .	1.5	. .	32 25.70	51.31	0.83	IV.	1	8.530	52 25.0	28.8	9.1	33 17.84	42 2.9
61	4	. .	. .	. .	51.0	9.0	. .	. .	33 51.01	51.32	0.95	IV.	4	41.850	17 34.7	28.6	3.7	34 43.28	7 7.0
62	8	. .	38.5	. .	14.5	. .	. .	. .	38 14.59	51.35	0.84	IV.	2	13.290	47 30.0	27.8	8.3	39 6.78	37 6.1
63	8	. .	. .	41.5	0.0	. .	. .	. .	41 0.24	51.36	0.93	IV.	4	45.887	13 21.2	27.3	3.2	41 52.53	2 51.7
64	8	18.0	. .	54.0	. .	. .	. .	. .	43 11.93	51.37	0.89	IV.	3	38.300	21 19.3	26.9	4.3	44 4.19	10 50.5
65	4	1.7	19.8	38.0	55.8	. .	. .	. .	45 55.86	51.39	0.87	IV.	3	29.050	30 59.6	26.5	5.8	46 48.12	20 31.9
66	4	48.0	5.5	24.0	42.0	. .	. .	. .	47 41.89	51.40	0.87	IV.	3	32.100	27 48.3	26.2	5.3	48 34.16	17 19.8
67	8	. .	. .	. .	. .	. .	10.0	. .	47 33.92	51.40	0.82	VI.	2	18.490	42 3.5	26.2	7.5	48 26.14	31 37.2
68	4	. .	. .	. .	31.5	49.5	. .	. .	49 31.49	51.41	0.84	IV.	3	25.660	34 32.3	25.8	6.3	50 23.74	24 4.4
69	4	. .	24.0	42.0	0.0	. .	. .	. .	51 0.06	51.42	0.83	IV.	3	22.260	38 5.6	25.5	6.9	51 52.31	27 38.0
70	8	. .	. .	. .	. .	. .	. .	56.0	51 2.03	51.42	0.90	VII.	4	41.825	17 34.8	25.5	3.8	51 54.35	7 4.1
71	4	. .	. .	. .	14.3	32.0	50.5	. .	53 14.21	51.43	0.80	IV.	2	15.360	45 20.3	25.1	8.0	54 6.44	34 53.4
72	7	. .	. .	. .	54.0	. .	. .	. .	54 54.01	51.44	0.90	IV.	4	46.290	12 56.1	24.8	3.0	55 46.35	2 23.9
73	5	. .	. .	. .	5.0	. .	. .	. .	15 55 5.00	51.44	0.90	IV.	4	46.290	12 56.1	24.8	3.0	15 55 57.34	2 23.9
74	8	. .	. .	. .	. .	. .	. .	46.0	16 0 51.91	51.48	0.81	VII.	3	26.290	33 52.4	23.7	6.2	16 1 44.20	23 22.3
75	6	57.0	14.5	33.0	51.0	. .	. .	. .	3 50.87	51.49	0.83	IV.	3	33.410	26 26.2	23.1	5.1	4 43.19	15 54.4
76	7	. .	. .	. .	. .	1.0	. .	36.0	7 42.47	51.51	0.82	IV.	3	32.716	27 9.6	22.3	5.0	8 34.80	31 16 36.9
77	7	. .	. .	. .	. .	17.0	. .	53.0	11 59.10	51.54	0.91	V.	5	54.700	4 10.3	21.5	0.2	12 51.55	30 53 34.0
78	6	. .	5.0	23.0	. .	. .	. .	. .	14 40.99	51.55	0.84	V.	5	44.565	14 44.5	20.9	3.3	15 33.38	31 4 8.7
79	7	. .	. .	. .	. .	. .	8.0	. .	14 32.04	51.55	0.81	III.	4	36.370	23 20.2	21.0	4.6	15 24.40	12 45.8
80	7	. .	. .	. .	. .	. .	52.0	10.0	15 15.96	51.56	0.78	VI.	3	28.330	31 44.4	20.8	5.9	16 8.30	21 11.1
81	8	5.0	. .	42.0	. .	. .	. .	. .	20 59.57	51.59	0.74	VII.	3	20.640	39 47.0	19.6	7.2	21 51.90	29 13.8
82	7	. .	. .	. .	. .	32.0	. .	. .	21 13.96	51.59	0.78	III.	3	30.002	30 0.0	19.6	5.6	22 6.33	19 25.2
83	7	. .	. .	17.5	. .	54.0	. .	. .	16 22 35.72	+51.59	+0.79	VI.	F W	35.515	−24 14.1	−19.3	− 4.8	16 23 28.10	−31 13 38.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 19. JUNE 3. P. $D_\circ = -30^\circ\ 49'\ 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
84	7	. .	. .	. .	. .	. .	51.0	9.0	16 24 13.13	+51.60	+0.83	V.	3	50.340	− 8 41.4	−19.0	− 2.4	16 25 7.56	−30 58 2.8
85	7	. .	. .	. .	. .	. .	21.0	29.0	24 45.42	51.61	0.83	VI.	4	50.340	8 41.4	18.8	2.4	25 37.86	30 58 2.6
86	8	. .	. .	. .	8.0	. .	. .	. .	26 8.03	51.61	0.78	IV.	3	38.400	21 13.0	18.6	4.3	27 0.42	31 10 35.9
87	8	6.5	25.0	43.0	. .	. .	. .	. .	29 0.87	51.63	0.72	III.	2	24.445	35 50.8	18.0	6.5	29 53.22	25 15.3
88	8	. .	. .	41.0	59.0	. .	. .	. .	32 50.99	51.65	0.79	IV.	4	45.400	13 52.0	17.1	3.2	33 43.43	31 3 12.3
89	6	. .	. .	. .	. .	. .	43.0	. .	33 7.15	51.65	0.82	VI.	4	52.075	6 52.3	17.1	2.1	33 59.62	30 56 11.5
90	8	. .	. .	. .	. .	56.0	13.5	31.5	34 37.70	51.66	0.77	VII.	4	42.990	16 21.7	16.7	3.6	35 30.13	31 5 42.0
91	7	. .	. .	. .	24.5	. .	0.0	. .	36 24.30	51.67	0.75	IV.	4	38.470	21 7.1	16.3	4.3	37 16.72	31 10 27.7
92	6	. .	. .	39.0	57.0	15.0	. .	. .	37 56.99	51.67	0.81	V.	4	52.470	6 27.8	16.0	2.1	38 49.47	30 55 45.9
93	6	. .	. .	. .	3.5	21.5	. .	. .	39 3.49	51.68	0.70	IV.	3	26.595	33 33.7	15.8	6.2	39 55.87	31 22 55.7
94	8	. .	. .	52.0	. .	27.7	. .	. .	40 9.83	51.69	0.69	VI.	3	27.250	32 52.4	15.5	6.1	41 2.21	22 14.0
95	8	. .	. .	. .	49.8	. .	25.0	. .	41 48.97	51.69	0.66	V.	2	16.410	44 14.3	15.2	7.7	42 41.32	33 37.2
96	6	. .	. .	. .	. .	53.0	. .	29.0	42 34.83	51.70	0.65	VI.	2	12.814	47 59.1	15.0	8.4	43 27.18	37 22.5
97	8	. .	. .	21.0	. .	57.0	. .	. .	44 39.00	51.71	0.74	IV.	4	39.785	19 44.4	14.5	4.1	45 31.45	9 3.0
98	8	. .	. .	. .	. .	40.0	. .	. .	45 21.97	51.71	0.72	V.	4	35.750	23 57.3	14.4	4.7	46 14.40	13 16.4
99	7	. .	. .	. .	. .	. .	24.0	. .	45 48.06	51.71	0.71	VI.	4	39.875	14 24.4	14.3	3.3	46 40.48	31 3 42.0
100	8	. .	11.0	. .	47.0	. .	. .	. .	48 46.99	51.73	0.76	IV.	4	50.960	8 2.8	13.6	2.3	49 39.48	30 57 18.7
101	8	. .	. .	. .	. .	. .	55.0	. .	49 18.91	51.73	0.63	VI.	2	16.225	44 25.5	13.5	7.9	50 11.27	31 33 46.9
102	8	. .	. .	. .	. .	41.0	. .	. .	50 22.89	51.74	0.64	V.	2	17.265	43 20.7	13.3	7.7	51 15.27	32 41.7
103	6	. .	10.0	28.0	46.0	. .	. .	. .	52 46.04	51.75	0.66	IV.	3	25.924	34 15.7	12.7	6.3	53 38.45	23 34.7
104	6	. .	39.0	. .	15.0	. .	. .	. .	54 15.00	51.75	0.73	IV.	4	45.020	19 28.95	12.4	3.3	55 7.48	8 44.6
105	8	31.0	. .	7.0	. .	. .	6.0	. .	54 26.64	51.76	0.71	VI.	4	39.450	20 5.0	12.4	4.1	55 19.11	31 9 21.5
106	5	. .	. .	. .	13.5	. .	. .	. .	57 13.46	51.77	0.78	IV.	4	55.830	2 57.0	11.8	1.5	58 6.01	30 52 10.3
107	8	. .	. .	. .	50.0	. .	. .	. .	16 58 50.05	51.78	0.62	IV.	2	20.985	39 27.4	11.4	7.1	16 59 42.45	31 28 45.9
108	7	. .	. .	. .	12.0	30.5	. .	. .	17 0 12.25	51.78	0.64	IV.	3	27.413	32 42.5	11.1	6.1	17 1 4.67	21 59.7
109	8	37.0	55.0	13.0	. .	. .	. .	. .	4 30.95	51.80	0.68	III.	4	39.907	19 36.8	10.1	4.1	5 23.43	8 51.0
110	6	. .	. .	26.0	43.3	1.5	. .	. .	8 43.61	51.82	0.66	IV.	4	37.160	22 29.3	9.2	4.5	9 36.09	11 43.0
111	7	57.0	15.0	33.0	. .	. .	. .	. .	10 51.04	51.83	0.60	III.	3	24.115	36 9.1	8.6	6.6	11 43.47	25 24.3
112	7	. .	. .	23.0	. .	. .	. .	. .	11 41.03	51.84	0.60	III.	3	23.680	36 36.2	8.5	6.7	12 33.47	25 51.4
113	8	3.0	. .	39.5	. .	. .	. .	. .	12 57.35	51.84	0.58	III.	2	16.940	43 41.1	8.2	7.8	13 49.77	32 57.1
114	8	8.0	26.0	44.0	. .	. .	. .	. .	16 2.08	51.86	0.57	III.	2	21.473	38 57.1	7.5	7.1	16 54.51	28 11.7
115	7	44.5	2.5	. .	. .	. .	. .	. .	17 38.41	51.86	0.66	II.	4	44.050	15 16.9	7.1	3.4	18 30.93	4 27.4
116	7	. .	. .	49.0	. .	. .	. .	. .	18 7.02	51.86	0.62	IV.	3	33.890	25 55.9	7.0	5.0	18 59.50	15 7.9
117	7	43.0	. .	. .	. .	56.0	14.0	. .	18 37.64	51.87	0.60	VI.	3	25.115	35 6.3	6.6	6.4	19 30.11	24 19.3
118	7	38.0	. .	14.0	. .	. .	. .	. .	17 21 32.03	+51.88	+0.57	III.	3	23.687	−36 35.9	− 6.2	− 6.7	17 22 24.48	−31 25 48.8

ZONE 20. JUNE 4. C. $D_\circ = -33^\circ\ 19'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	29.5	48.3	6.8	26.1	44.5	. .	14 32 7.06	+51.09	+1.01	IV.	3	39.392	−20 10.7	− 7.7	− 3.2	14 32 59.16	−33 40 11.6
2	8	. .	0.0	18.6	37.0	55.8	14.5	. .	37 37.18	51.13	0.66	IV.	2	14.819	45 54.0	7.0	8.1	38 28.97	34 5 59.1
3	8	. .	. .	. .	. .	44.0	3.0	. .	39 25.74	51.14	1.18	IV.	4	55.368	3 26.3	6.8	0.1	40 18.06	33 23 23.2
4	9	. .	14.5	33.0	52.0	. .	. .	. .	41 51.71	51.16	0.82	IV.	3	28.638	31 25.5	6.5	5.3	42 43.69	51 27.3
5	8	. .	44.4	3.0	21.9	39.8	58.2	. .	44 21.48	51.18	1.09	IV.	4	47.647	11 30.8	6.1	1.6	45 13.75	33 31 28.5
6	8	. .	48.0	6.5	25.0	44.0	2.5	. .	46 25.18	51.19	0.69	IV.	2	19.431	41 5.1	5.8	7.1	47 17.06	34 1 8.0
7	9	. .	. .	. .	49.7	. .	. .	. .	47 49.76	51.20	0.85	IV.	3	30.903	29 3.3	5.6	4.8	48 41.81	33 49 3.7
8	6.7	. .	13.8	32.0	50.0	9.0	27.6	. .	51 50.49	51.23	0.90	IV.	3	34.191	25 37.1	5.1	4.2	52 42.62	33 45 36.4
9	9.10	. .	. .	. .	10.5	29.5	. .	. .	14 53 10.69	51.24	0.61	IV.	2	13.786	46 58.7	4.9	8.2	14 53 2.54	34 7 1.8
10	9	. .	0.0	19.1	36.0	. .	15.0	. .	15 1 37.11	+51.30	+0.54	IV.	2	9.587	−51 21.8	− 3.6	− 9.1	15 2 28.95	−34 11 24.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 4,	16	+ 43.204	+ 0.010	+ 0.198	+ 0.396	+ 0.247	0 0 2.90	29.997

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 19	June 4, 14 30	72 39 61.8	61.4	66.9	60.2	58.1	50.0	59.73	29.815	75.0	71.5	73.5	73.5	74.2
	15 1	. .	. .	. .	. .	. .	. .	. .	29.800	74.2	71.6			
	15 12	61.1	61.0	67.0	60.4	58.4	49.0	59.48	29.800	74.0	71.6	73.4	73.4	
Zone 20	6, 13 29	71 24 66.0	62.5	76.4	65.0	62.2	53.6	63.45	30.010	73.5	67.0	. .	. .	70.5
	14 14	. .	. .	. .	. .	. .	. .	. .	30.044	71.0	63.5			

REMARKS.

(19) 99. Micrometer reading assumed as $44^{r}.875$ instead of $39^{r}.875$.

(19) 104. Micrometer reading assumed as $40^{r}.020$ instead of $45^{r}.020$.

June 3, $17^{h}\ 22^{m}$. Wind too fresh; lamp extinguished.

(19) 117. Minutes assumed as 18.

June 4. Hazy about horizon and above the belt; 15^{h}, haze increasing; mags. and transits doubtful.

ZONE 20. JUNE 4. C. $D_\circ = -33° 19' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
11	8	. .	19.0	37.0	55.6	. .	33.0	. .	15 6 55.81	+51.34	+0.67	IV.	3	19.369	−41 6.9	− 2.8	− 7.1	15 7 47.82	−34 1 6.8
12	8	. .	32.0	. .	8.2	26.7	. .	. .	9 8.47	51.35	1.10	IV.	4	50.177	8 52.1	2.5	1.1	10 0.92	33 28 45.7
13	8	. .	. .	54.6	13.4	. .	. .	8.0	15 12 13.02	+51.37	+0.98	IV.	3	42.447	−16 58.9	− 2.0	− 2.6	15 13 5.37	−33 36 53.5

ZONE 21. JUNE 6. P. $D_\circ = -32° 4' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	31.5	50.0	8.0	26.0	. .	. .	. .	13 29 26.19	+50.55	+2.23	IV.	4	43.647	−15 41.9	− 8.2	− 2.9	13 30 18.97	−32 20 43.0
2	8	24.5	42.5	. .	19.0	. .	. .	. .	32 19.20	50.57	−0.12	IV.	2	15.613	45 4.3	8.1	7.8	33 9.65	50 10.2
3	8	54.0	12.5	30.5	. .	. .	. .	. .	35 48.80	50.60	+1.36	III.	3	33.783	26 2.5	8.0	4.6	36 40.76	31 5.1
4	4	. .	. .	1.0	19.0	. .	. .	13.5	36 19.03	50.60	2.40	IV.	4	47.250	11 55.8	8.0	2.3	37 12.03	16 56.1
5	8	2.0	20.0	38.5	57.0	. .	. .	. .	40 56.71	50.63	1.74	IV.	4	38.750	20 49.4	7.7	3.7	41 49.08	25 50.8
6	4	43.0	1.0	19.0	37.0	. .	. .	. .	42 37.30	50.64	2.60	IV.	4	49.215	9 52.5	7.7	1.9	43 30.54	14 52.1
7	7	44.0	2.0	20.0	38.0	. .	. .	. .	42 38.30	50.64	+2.60	VII.	4	49.275	9 47.3	7.7	1.9	43 31.54	14 46.9
8	8	12.0	30.5	49.3	7.3	. .	. .	. .	51 7.28	50.70	−0.63	IV.	2	12.245	48 35.4	7.3	8.4	51 57.35	53 41.1
9	9	. .	7.0	. .	42.5	. .	. .	. .	53 43.07	50.72	+0.19	IV.	3	22.363	37 59.2	7.1	6.6	54 33.98	43 2.9
10	6	48.0	6.3	24.5	43.0	. .	. .	. .	13 58 42.02	50.75	1.97	IV.	4	44.150	15 10.4	6.9	2.8	13 59 34.74	20 10.1
11	7	59.0	17.0	35.3	53.5	. .	. .	. .	14 0 53.56	50.77	+1.04	IV.	3	33.414	26 26.0	6.7	4.6	14 1 45.37	31 27.3
12	8	36.0	. .	. .	. .	50.0	. .	. .	3 31.28	50.78	−0.44	IV.	2	14.830	45 53.3	6.6	7.9	4 21.61	50 57.8
13	7	39.0	. .	17.0	. .	. .	. .	50.0	3 34.76	50.78	−0.31	VII.	2	17.580	43 0.0	6.5	7.5	4 25.23	48 4.0
14	6	. .	5.0	23.0	. .	. .	. .	37.0	3 41.66	50.78	−0.36	VII.	2	16.960	43 39.1	6.5	7.6	4 32.08	48 43.2
15	4	40.0	59.3	16.3	34.0	. .	. .	29.3	6 34.79	50.80	+0.90	IV.	3	32.470	27 25.2	6.3	4.8	7 26.49	32 26.3
16	4	45.5	3.5	22.0	40.0	. .	. .	. .	8 40.15	50.82	0.97	IV.	3	33.560	26 16.7	6.2	4.6	9 31.94	31 17.5
17	9	57.0	. .	33.5	53.0	. .	. .	. .	12 52.15	50.85	0.87	IV.	3	33.033	26 49.7	5.9	4.7	13 43.87	31 50.3
18	7	33.0	51.5	9.5	28.0	. .	. .	. .	14 14 27.84	+50.86	+1.47	IV.	4	40.350	−19 9.1	− 5.8	− 3.5	14 15 20.17	−32 24 8.4

ZONE 22. JUNE 15. C. $D_\circ = -33° 39' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.10	. .	56.5	15.0	33.5	. .	. .	. .	14 59 33.54	+55.63	+1.68	IV.	3	31.661	−28 15.8	−46.8	− 5.1	15 0 30.85	−33 48 17.7
2	9.10	. .	. .	. .	. .	57.5	16.0	. .	14 59 39.05	55.63	1.72	V.	4	43.461	15 53.5	46.8	2.6	0 36.40	35 52.9
3	9.10	. .	43.5	. .	. .	34.0	. .	. .	15 4 18.00	55.65	1.65	IV.	3	24.448	35 48.5	46.1	6.4	5 15.30	33 55 51.0
4	8	. .	14.1	32.5	. .	9.4	28.0	. .	6 50.99	55.67	1.63	IV.	3	19.406	41 4.6	45.8	7.5	7 48.29	34 1 7.9
5	8	. .	26.5	45.5	4.0	22.0	40.3	. .	9 3.69	55.68	1.74	IV.	4	50.198	8 50.8	45.5	1.2	10 1.11	33 28 47.5
6	9	5.7	24.5	. .	. .	. .	. .	. .	12 1.54	55.70	1.60	II.	2	15.912	44 45.1	45.0	8.2	12 58.84	34 4 48.3
7	8	. .	. .	. .	3.0	21.3	39.5	. .	12 2.67	55.70	1.58	IV.	2	10.062	49 49.3	45.0	9.5	12 59.95	9 53.8
8	8.9	. .	. .	. .	. .	30.0	48.7	7.0	13 11.35	55.71	1.57	V.	2	8.968	52 0.3	44.9	9.7	14 8.63	12 4.9
9	9	. .	15.0	24.0	43.0	1.7	. .	. .	15 42.71	55.72	1.59	IV.	2	15.478	45 12.9	44.5	8.3	16 40.02	34 5 15.7
10	8.9	. .	50.0	8.2	28.0	. .	. .	. .	18 27.28	55.74	1.65	IV.	3	31.720	28 12.1	44.1	4.9	19 24.67	33 48 11.1
11	8.9	. .	30.9	. .	7.5	26.0	44.0	. .	23 7.48	55.77	1.64	IV.	3	29.210	30 49.7	43.4	5.5	24 4.89	50 48.6
12	9	. .	6.1	24.0	43.0	1.5	. .	. .	27 42.67	55.79	1.64	IV.	3	32.710	27 10.0	42.7	4.7	28 40.10	47 7.4
13	10	. .	. .	. .	. .	. .	. .	33.0	27 37.47	55.79	1.64	VII.	3	33.567	26 15.9	42.7	4.6	28 34.90	46 13.2
14	6	. .	. .	. .	18.0	36.7	55.0	13.5	29 17.99	55.80	1.61	IV.	3	25.121	35 6.1	42.4	6.3	30 15.40	33 55 4.8
15	7	. .	34.1	. .	11.2	30.0	49.0	. .	32 11.43	55.82	1.54	IV.	2	7.621	53 24.8	41.9	10.0	33 8.79	34 13 26.7
16	9	. .	. .	9.0	28.0	46.0	6.0	. .	33 27.93	55.82	1.53	IV.	2	8.361	52 38.6	41.6	9.8	34 25.28	34 12 40.0
17	9.10	. .	. .	. .	32.0	. .	. .	. .	35 32.01	55.84	1.65	IV.	4	38. .	22 . .	. .	. .	36 29.50	33 41 . .
18	7	. .	. .	. .	. .	. .	. .	8.0	36 12.21	55.84	1.53	VI.	2	8.481	52 30.7	41.3	9.8	37 9.58	34 12 31.8
19	9	. .	. .	. .	. .	21.0	. .	. .	38 2.50	55.85	1.60	V.	3	24.340	35 55.3	41.0	6.5	38 59.95	33 55 52.8
20	8	. .	7.0	25.5	44.0	2.6	21.1	. .	15 41 44.06	+55.87	+1.64	IV.	4	39.739	−19 47.3	−40.3	− 3.3	15 42 41.57	−33 39 40.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 6,	16	+ 43.146	+ 0.013	+ 0.198	+ 0.396	+ 0.247	0 0 2.46	29.999
15,	16	+ 47.338	+ 0.020	+ 0.198	+ 0.396	+ 0.247	2.25	30.005

REMARKS.

June 6. $13^h 30^m$, very clear; $14^h 14^m$, thick clouds.

(22) 7. Micrometer reading assumed as $11^r.062$ instead of $10^r.062$.

June 15. Early part of evening unfavorable; after $14^h 30^m$ beautifully clear.

INSTRUMENT READINGS.

Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 22. JUNE 15. C. $D_0 = -33°\ 19'\ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9	. .	. .	. .	. .	19.0	. .	. .	15 44 0.50	+55.88	+1.64	V.	4	42.704	−16 40.8	−39.9	− 2.7	15 44 58.02	−33 36 33.4
22	9	. .	. .	50.9	9.0	. .	. .	. .	46 9.25	55.90	1.56	IV.	3	20.071	40 22.8	39.5	7.3	47 6.71	34 0 19.6
23	7	. .	. .	. .	. .	. .	58.0	16.2	46 20.76	55.90	1.66	VI.	4	47.683	11 27.8	39.5	1.7	47 18.32	33 31 19.0
24	8	. .	. .	. .	. .	. .	. .	16.7	46 21.28	55.90	1.66	VII.	4	47.8 .	11 20.	39.5	1.7	47 18.84	33 31 (11.)
25	8	. .	. .	53.0	11.5	29.8	. .	. .	52 11.41	55.93	1.52	IV.	2	8.939	52 2.1	38.4	9.7	53 8.86	34 12 0.2
26	9	. .	17.0	35.5	54.0	. .	31.0	. .	54 54.02	55.94	1.64	IV.	4	43.912	15 25.2	37.9	2.5	55 51.60	33 35 15.6
27	9.10	. .	. .	51.0	. .	. .	. .	. .	57 9.53	55.96	1.61	IV.	4	37.455	22 10.8	37.5	3.8	58 7.10	42 2.1
28	9	. .	. .	23.0	. .	59.0	. .	36.8	15 57 41.10	55.96	1.63	IV.	4	41.671	17 46.0	37.4	2.9	15 58 38.69	37 36.3
29	8	. .	57.0	15.7	34.7	. .	11.1	. .	16 2 34.28	55.98	1.56	IV.	3	25.152	35 4.2	36.5	6.3	16 3 31.82	54 57.0
30	9	. .	. .	31.5	. .	27.5	. .	. .	7 59.50	56.01	1.62	IV.	4	41.140	18 19.4	35.6	3.0	8 57.13	38 8.0
31	9	. .	. .	. .	9.0	. .	. .	. .	9 9.04	56.02	1.58	IV.	3	32.919	26 56.8	35.3	4.7	10 6.64	46 46.8
32	9.10	. .	. .	. .	33.0	. .	. .	. .	11 33.06	56.03	1.54	IV.	3	24.731	35 30.5	34.8	6.4	12 30.63	55 21.7
33	9.10	. .	8.0	. .	. .	4.0	. .	. .	11 45.26	56.03	1.52	IV.	3	21.251	39 8.9	34.8	7.1	12 42.81	59 0.8
34	9	. .	. .	10.0	28.5	. .	5.5	. .	15 28.50	56.05	1.52	IV.	3	21.241	39 9.5	34.0	7.1	16 26.07	59 0.6
35	9	. .	50.0	8.0	27.0	. .	. .	. .	19 26.88	56.07	1.56	IV.	3	32.561	27 19.4	33.2	4.8	20 24.51	33 47 7.4
36	8	. .	. .	9.0	. .	46.0	5.0	. .	20 27.62	56.07	1.51	IV.	2	20.267	40 12.6	33.0	7.3	21 25.20	34 0 2.9
37	9	. .	. .	22.0	40.0	59.1	. .	. .	21 40.24	56.08	1.51	IV.	3	25.511	34 41.7	32.8	6.2	22 37.83	33 54 30.7
38	9	. .	. .	. .	53.0	12.0	. .	. .	22 53.20	56.08	1.49	IV.	3	16.212	44 24.8	32.6	8.2	23 50.77	34 4 15.6
39	8.9	. .	. .	. .	. .	. .	41.2	. .	23 4.05	56.09	1.48	IV.	2	13.578	47 11.9	32.5	8.7	24 1.62	34 7 3.1
40	8.9	. .	55.0	13.2	32.0	. .	. .	. .	25 31.95	56.10	1.52	IV.	3	26.894	33 14.8	32.0	6.0	26 29.57	33 53 2.8
41	9	. .	. .	. .	12.5	. .	49.7	. .	26 12.63	56.10	1.56	IV.	3	35.010	24 45.6	31.9	4.3	27 10.29	44 31.8
42	9	. .	. .	. .	22.0	41.0	. .	. .	27 22.26	56.11	1.57	IV.	3	36.869	22 48.9	31.7	3.9	28 19.94	42 34.5
43	9	. .	. .	23.0	41.3	. .	. .	. .	28 41.45	56.11	1.53	IV.	3	30.451	29 31.9	31.4	5.2	29 39.09	49 18.5
44	9	. .	. .	. .	. .	5.0	23.0	. .	28 46.18	56.11	1.51	V.	3	25.825	34 21.9	31.4	6.2	29 43.80	33 54 9.5
45	9	. .	. .	. .	. .	5.0	24.0	. .	29 46.65	56.12	1.49	V.	3	20.115	40 20.1	31.2	7.3	30 44.26	34 0 8.6
46	9.10	. .	. .	. .	. .	43.0	1.0	20.0	31 24.43	56.12	1.60	V.	4	50.435	8 35.7	30.8	1.2	32 22.15	33 28 17.7
47	7	. .	13.8	32.1	50.7	9.4	27.5	. .	34 50.72	56.14	1.58	IV.	4	45.171	14 6.3	30.1	2.2	35 48.44	33 48.6
48	8.9	. .	. .	. .	52.0	. .	29.0	. .	36 52.08	56.15	1.60	IV.	4	53.319	5 34.9	29.7	0.6	37 49.83	25 15.2
49	8	. .	. .	15.0	. .	. .	10.7	. .	38 33.62	56.16	1.54	IV.	3	34.861	24 54.9	29.4	4.3	39 31.32	44 38.6
50	9	. .	. .	. .	. .	. .	. .	6.0	38 10.51	56.16	1.56	VII.	3	39.439	20 7.4	29.4	3.4	39 8.23	33 39 50.2
51	4	. .	. .	. .	. .	. .	7.0	15.7	39 29.96	56.16	1.47	VI.	1	19.358	41 6.4	29.2	7.5	40 27.59	34 0 53.1
52	9	. .	. .	11.4	30.0	. .	. .	. .	45 30.00	56.19	1.50	IV.	3	28.539	31 31.8	27.9	5.6	46 27.69	33 51 15.3
53	9.10	. .	. .	. .	. .	52.0	. .	28.5	45 33.22	56.19	1.53	V.	3	34.736	25 2.9	27.9	4.3	46 30.94	44 45.1
54	8	. .	. .	. .	34.0	52.7	10.2	. .	47 33.87	56.20	1.60	VI.	4	56.252	2 30.8	27.4	0.0	48 31.67	22 8.2
55	9	. .	. .	. .	18.0	. .	. .	. .	50 18.04	56.21	1.54	IV.	3	40.391	19 8.0	26.9	3.2	51 15.75	38 48.1
56	8.9	. .	. .	. .	. .	23.0	. .	. .	51 4.50	56.21	1.53	V.	3	38.840	20 45.2	26.7	3.5	52 2.24	40 25.4
57	7.8	. .	23.0	41.5	0.7	. .	. .	. .	54 0.29	56.23	1.57	IV.	3	25.548	34 39.4	25.8	6.2	54 58.09	54 21.4
58	9	. .	. .	. .	33.0	. .	10.0	. .	54 33.05	56.23	1.55	IV.	4	45.884	13 21.4	25.9	2.1	55 30.83	32 59.4
59	9	. .	. .	1.2	. .	. .	. .	. .	56 19.69	56.23	1.55	III.	4	46.622	12 35.2	25.5	2.0	57 17.47	32 12.7
60	9	. .	. .	13.8	32.0	. .	. .	. .	57 32.15	56.24	1.52	IV.	3	39.530	20 2.0	25.3	3.4	16 58 29.91	39 40.7
61	9	. .	3.0	21.4	39.7	. .	. .	. .	16 59 33.30	56.25	1.52	IV.	3	40.397	19 7.7	24.8	3.2	17 0 31.07	33 38 45.7
62	9	. .	. .	9.0	29.0	. .	. .	. .	17 0 28.30	56.25	1.43	IV.	2	17.302	43 18.5	24.6	7.8	1 25.98	34 3 0.9
63	9	. .	. .	. .	49.7	. .	. .	. .	1 49.73	56.26	1.50	IV.	3	35.032	24 44.3	24.3	4.3	2 47.49	33 44 22.9
64	9	. .	. .	. .	32.0	. .	. .	. .	2 32.05	56.26	1.49	IV.	3	33.521	26 19.2	24.2	4.6	3 29.80	45 58.0
65	8.9	. .	33.2	. .	. .	. .	. .	. .	4 10.21	56.26	1.53	II.	4	45.000	14 16.9	23.8	2.3	5 8.00	33 53.0
66	8	. .	24.7	43.0	2.0	. .	. .	. .	5 1.73	56.27	1.53	IV.	4	45.339	13 55.8	23.6	2.2	5 59.53	33 31.6
67	8.9	. .	. .	. .	. .	7.0	. .	. .	4 48.50	56.27	1.51	V.	4	39.892	19 37.4	23.7	3.3	5 46.28	39 14.4
68	9	. .	. .	56.5	. .	. .	. .	. .	7 15.05	56.28	1.45	III.	3	24.441	35 48.7	23.1	6.4	8 12.78	33 55 28.2
69	9	. .	. .	. .	8.0	. .	. .	. .	17 7 8.05	+56.28	+1.42	IV.	3	17.050	−43 32.2	−23.1	− 8.0	17 8 5.75	−34 3 13.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 15,	16	+ 47.338	+ 0.020	+ 0.198	+ 0.396	+ 0.247	0 0 2.25	30.005

REMARKS.

(22) 51. Transit over T. VII assumed as 25^s.7 instead of 15^s.7.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 22	June 15, 14 50	72 39 62.2	62.5	68.1	63.0	61.0	50.9	61.28	. .	. .	. .	73.0	71.0	69.0
	14 59	. .	. .	. .	. .	. .	. .	. .	29.914	73.0	70.7			
	15 38	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.6			
	15 50	62.5	63.1	68.9	62.0	62.1	50.0	61.43	. .	. .	. .	72.1	70.9	
	15 57	. .	. .	. .	. .	. .	. .	. .	29.902	72.2	69.4			
	16 39	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.6			
	18 6	. .	. .	. .	. .	. .	. .	. .	29.888	70.7	67.7			
	18 10	61.9	62.9	69.1	62.7	62.0	49.0	61.27	. .	. .	. .	69.7	69.4	69.2

ZONE 22. JUNE 15. C. $D_0 = -33°\ 19'\ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	9	. .	. .	. .	. .	9.5	. .	. .	17 7 50.95	+56.28	+1.44	V.	3	21.979	−38 23.2	−23.0	− 6.9	17 8 48.67	−33 58 3.1
71	9	. .	25.0	. .	. .	. .	0.5	. .	13 12.78	56.30	1.50	IV.	4	39.242	20 18.6	21.7	3.4	14 10.58	39 53.7
72	9	. .	50.2	. .	27.0	. .	4.5	. .	13 27.25	56.30	1.50	IV.	4	39.059	20 30.0	21.7	3.4	14 25.05	33 40 5.1
73	9	. .	. .	. .	. .	. .	3.0	. .	14 25.87	56.30	1.41	VI.	2	14.118	46 37.6	21.5	8.6	15 23.58	34 6 17.7
74	8.9	. .	. .	. .	49.0	7.8	. .	. .	15 49.14	56.31	1.45	IV.	3	22.802	37 31.5	21.1	6.8	16 46.90	33 57 9.4
75	9	. .	13.0	32.8	. .	. .	. .	. .	17 50.63	56.32	1.52	III.	4	51.452	7 32.1	20.7	1.0	18 48.47	27 3.8
76	8	. .	. .	56.0	15.0	. .	52.0	. .	19 14.86	56.32	1.50	IV.	3	43.558	15 49.1	20.4	2.5	20 12.68	35 22.0
77	9	. .	. .	24.7	. .	. .	. .	. .	19 43.19	56.32	1.51	III.	3	47.030	12 10.8	20.2	1.9	20 41.02	31 42.9
78	9	. .	. .	. .	58.0	. .	35.0	. .	20 58.08	56.33	1.52	IV.	3	49.490	8 34.4	20.0	1.2	20 55.93	28 5.6
79	8	. .	. .	. .	. .	15.0	33.7	. .	20 56.65	56.33	1.50	V.	3	44.038	15 18.9	20.0	2.4	21 54.48	34 51.3
80	9	. .	. .	. .	. .	. .	23.5	. .	21 46.56	56.33	1.48	VI.	3	38.428	21 11.1	19.8	3.6	22 44.37	40 44.5
81	9	. .	. .	. .	3.5	22.0	. .	. .	23 3.47	56.33	1.41	IV.	2	22.168	38 13.3	19.5	6.9	24 1.21	57 49.7
82	9	. .	. .	. .	29.0	48.0	. .	. .	24 29.26	56.34	1.50	IV.	4	45.058	14 13.3	19.2	2.2	25 27.10	33 44.7
83	9	. .	. .	. .	. .	. .	40.0	. .	25 3.02	56.34	1.46	VI.	3	34.758	25 1.3	18.9	4.4	26 0.82	44 34.6
84	9	. .	. .	. .	47.2	6.0	. .	. .	27 47.39	56.35	1.43	IV.	3	27.565	32 32.9	18.5	4.8	28 45.17	33 52 6.2
85	9.10	. .	. .	. .	30.0	. .	. .	. .	28 30.05	56.35	1.38	IV.	3	17.098	43 29.2	18.2	8.0	29 27.78	34 3 5.4
86	9	. .	. .	0.5	18.0	. .	56.0	14.2	30 18.65	56.36	1.41	IV.	3	26.829	33 18.9	17.8	6.0	31 16.42	33 52 52.7
87	9	. .	1.5	19.3	. .	55.0	. .	. .	30 37.62	56.36	1.39	IV.	3	20.727	39 41.6	17.7	7.2	31 35.37	59 16.5
88	8	. .	. .	. .	. .	. .	45.0	. .	31 8.20	56.36	1.51	VI.	4	53.182	5 42.8	17.6	0.6	32 6.07	33 25 11.0
89	9	. .	. .	. .	42.2	. .	. .	. .	32 42.25	56.37	1.39	IV.	2	19.870	40 37.3	17.2	7.4	33 40.01	34 0 11.9
90	9	. .	. .	. .	16.8	. .	. .	. .	34 16.85	56.37	1.44	IV.	3	34.254	25 33.2	16.8	4.4	35 14.66	33 45 4.4
91	9.10	. .	. .	. .	30.0	49.0	. .	. .	35 30.26	56.37	1.45	IV.	3	37.041	22 38.2	16.5	3.9	36 28.08	42 8.6
92	9.10	. .	. .	48.0	6.0	. .	44.0	. .	37 6.50	56.38	1.40	IV.	3	23.020	37 17.8	16.1	6.8	38 4.28	56 50.7
93	9	. .	. .	48.5	6.3	25.0	44.2	. .	37 6.74	56.38	1.40	IV.	3	23.861	36 25.1	16.1	6.6	38 4.52	55 57.8
94	9	. .	. .	51.7	. .	28.0	. .	55.7	40 26.64	56.39	1.45	IV.	4	39.735	19 47.5	15.4	3.3	41 24.48	39 16.2
95	9	. .	. .	. .	37.0	. .	. .	. .	40 37.06	56.39	1.42	IV.	3	32.593	27 17.4	15.3	4.8	41 34.87	33 46 47.5
96	8	. .	. .	55.0	. .	14.0	33.0	. .	42 41.59	56.40	1.35	IV.	2	15.097	45 36.6	15.0	8.4	43 39.34	34 5 10.0
97	9	. .	. .	30.0	48.0	. .	25.7	. .	43 48.75	56.40	1.40	IV.	3	27.539	32 34.5	14.6	5.8	44 46.55	33 52 4.9
98	9	. .	. .	. .	. .	. .	22.0	. .	43 44.94	56.40	1.39	VI.	3	24.654	35 35.3	14.5	6.4	44 42.73	55 6.2
99	9	. .	28.0	47.0	5.0	24.0	. .	. .	47 5.25	56.41	1.38	IV.	3	24.336	35 55.5	13.8	6.4	48 3.04	55 25.7
100	9	. .	. .	1.2	20.0	. .	. .	. .	48 19.89	56.41	1.42	IV.	4	35.025	24 43.2	13.5	4.3	49 17.72	44 11.0
101	9	. .	. .	. .	. .	21.8	. .	. .	49 3.23	56.41	1.38	V.	3	27.258	32 52.2	13.3	5.9	50 1.02	52 2.4
102	9	. .	. .	. .	4.0	22.8	. .	. .	50 4.13	56.42	1.36	IV.	3	20.460	39 58.5	13.0	7.3	51 1.91	59 28.8
103	9	. .	. .	6.3	25.0	43.5	. .	. .	51 24.95	56.42	1.41	IV.	3	33.892	25 55.7	12.7	4.5	52 22.78	45 22.9
104	9	. .	. .	. .	49.2	8.0	26.7	. .	51 49.44	56.42	1.37	IV.	3	26.819	33 19.5	12.6	6.0	52 47.23	33 52 48.1
105	9	. .	. .	56.2	15.0	. .	52.0	. .	54 14.91	56.43	1.34	IV.	3	17.110	43 28.4	12.0	8.0	55 12.68	34 2 58.4
106	9	. .	. .	57.0	15.7	. .	. .	. .	58 15.60	56.44	1.44	IV.	4	44.098	15 13.7	11.0	2.4	17 59 13.48	33 34 37.1
107	8	. .	. .	44.0	. .	21.0	39.0	. .	60 2.32	56.44	1.38	IV.	3	30.100	29 53.8	10.6	5.3	18 1 0.14	49 19.7
108	9	. .	. .	. .	48.0	. .	25.0	. .	17 59 47.99	56.44	1.36	IV.	3	23.459	36 50.5	10.7	6.6	0 45.79	33 56 17.8
109	8.9	. .	. .	. .	. .	. .	49.0	8.0	18 1 12.07	56.44	1.33	VI.	2	14.566	46 9.6	10.3	8.5	2 9.84	34 5 38.4
110	9	. .	. .	. .	. .	43.0	1.3	. .	2 24.45	56.45	1.44	V.	4	44.308	15 0.3	10.0	2.4	3 22.34	33 34 22.7
111	9	. .	. .	52.0	11.0	. .	. .	. .	4 10.77	56.45	1.42	IV.	4	40.896	18 34.6	9.6	3.1	5 8.64	37 57.3
112	8.9	. .	. .	. .	9.5	28.0	46.0	. .	5 9.32	56.46	1.38	IV.	3	31.520	28 24.7	9.4	5.0	6 7.16	33 47 49.1
113	8	. .	. .	23.5	42.0	. .	. .	. .	6 42.05	56.46	1.31	IV.	2	11.174	49 42.4	9.0	9.2	7 39.82	34 9 10.6
114	8.9	. .	. .	. .	. .	. .	36.7	. .	18 6 59.85	+56.46	+1.46	VI.	4	51.755	− 7 12.2	− 8.9	− 0.9	18 7 57.77	−33 26 32.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.		Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.		°	°	°	°

REMARKS.

(22) 78. Minute assumed as 19, not 20, and micrometer reading as $50^r.490$, not $49^r.490$, to agree with Transit, June 15.

ZONE 23. JUNE 16. P. $D_{\circ} = -32° \ 4' \ 40''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	6	28.0	46.5	4.5	22.4	. .	. .	. .	14 14 22.69	+56.34	+0.96	IV.	4	40.265	−19 14.4	− 9.8	− 3.2	14 15 19.99	−32 24 7.4
2	8	. .	. .	20.5	38.5	. .	. .	. .	15 38.62	56.35	0.98	IV.	4	46.663	12 32.5	9.7	2.0	16 35.95	17 24.2
3	7	. .	. .	. .	34.0	52.5	10.5	. .	16 34.09	56.35	0.90	IV.	3	30.676	29 17.6	9.6	4.9	17 31.34	34 12.1
4	8	. .	. .	. .	19.0	. .	. .	. .	20 19.03	56.38	0.78	IV.	1	9.110	51 48.6	9.3	8.8	21 16.19	56 46.7
5	7	36.0	54.0	12.5	30.3	. .	. .	. .	23 30.61	56.39	0.84	IV.	3	26.020	34 9.7	8.9	5.7	24 27.84	39 4.3
6	9	11.5	. .	. .	5.0	. .	. .	. .	27 5.62	56.41	0.85	IV.	3	33.375	26 28.4	8.5	4.4	28 2.88	31 21.3
7	8	22.0	40.0	57.5	16.7	. .	. .	. .	29 16.49	56.43	0.79	IV.	2	21.435	38 59.4	8.3	6.5	30 13.71	43 54.2
8	7	. .	. .	. .	. .	34.0	52.0	. .	32 15.75	56.45	0.96	V.	4	56.400	2 21.2	8.0	0.3	33 13.16	7 9.5
9	5	37.0	55.3	13.3	32.0	. .	. .	. .	44 31.82	56.52	0.73	IV.	3	24.070	37 14.8	6.5	6.2	45 29.07	42 7.4
10	7	. .	. .	56.0	. .	34.0	. .	. .	47 14.99	56.53	0.84	V.	4	50.400	8 37.9	6.2	1.4	48 12.36	13 25.5
11	7	. .	59.0	. .	35.0	. .	. .	. .	47 35.25	56.53	0.84	VI.	4	50.500	8 31.2	6.2	1.4	48 32.62	13 18.8
12	8	59.5	17.3	36.0	. .	. .	. .	. .	48 53.99	56.54	0.84	IV.	4	50.010	9 2.5	6.0	1.5	49 51.37	13 50.0
13	7	9.0	27.0	45.5	4.0	. .	. .	. .	57 3.69	56.59	0.76	IV.	4	44.553	14 45.1	5.0	2.4	14 58 1.04	19 32.5
14	8	. .	. .	. .	4.0	. .	. .	. .	14 59 4.01	56.60	0.77	IV.	4	48.495	10 37.7	4.7	1.7	15 0 1.38	15 24.1
15	8	. .	11.0	29.5	. .	. .	24.0	. .	15 9 47.61	56.66	0.72	VI.	4	45.220	14 2.7	3.2	2.3	10 44.99	18 48.2
16	6	36.5	54.5	13.0	31.3	. .	. .	. .	21 31.16	56.72	0.64	IV.	4	42.350	17 3.5	1.4	2.8	22 28.52	21 47.7
17	7	54.0	12.7	31.0	49.3	. .	. .	. .	23 49.16	56.74	0.54	IV.	3	25.370	34 50.6	1.2	5.8	24 46.44	39 37.6
18	5	55.0	13.5	31.0	50.0	. .	. .	. .	15 25 49.76	+56.75	+0.55	IV.	3	29.520	−30 30.2	− 0.8	− 5.1	15 26 47.06	−32 35 16.1

ZONE 24. JUNE 17. C. $D_{\circ} = -37° \ 5' \ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	57.7	17.0	36.4	55.9	15.0	. .	14 56 36.42	+56.90	+1.58	IV.	4	43.501	−15 51.2	−42.2	− 3.9	14 57 34.90	−37 21 37.3
2	8.9	. .	51.7	10.7	30.0	49.7	9.5	. .	14 58 30.31	56.92	1.14	IV.	2	9. .	52 . .	. .	. .	14 59 28.37	57
3	9	. .	32.0	. .	. .	. .	. .	. .	15 1 10.78	56.94	1.67	II.	4	50.974	8 1.8	41.6	1.6	15 2 9.39	13 45.0
4	8.9	. .	56.1	15.8	35.1	54.8	13.8	. .	2 35.11	56.95	1.15	IV.	2	10.271	50 39.0	41.5	14.3	3 33.21	56 24.8
5	8.9	. .	45.4	4.5	24.0	43.5	. .	. .	6 24.10	56.97	1.17	IV.	2	13.369	47 25.0	40.9	13.3	7 22.24	53 19.2
6	8	. .	14.0	. .	53.0	12.5	32.0	. .	10 53.02	57.01	1.32	IV.	3	25.749	34 26.7	40.3	9.3	11 51.35	40 16.3
7	9.10	. .	. .	. .	. .	44.0	3.0	. .	11 24.29	57.01	1.24	V.	3	19.001	41 29.9	40.2	11.5	12 22.54	47 21.6
8	8	. .	49.0	8.4	28.0	47.4	6.6	. .	14 27.89	57.03	1.33	IV.	3	27.971	32 7.3	39.8	8.6	15 26.25	37 55.7
9	9	. .	. .	. .	57.7	. .	36.0	. . .	19 57.53	57.07	1.66	IV.	4	54.489	4 21.4	39.0	0.6	20 56.26	10 1.0
10	8.9	. .	. .	. .	. .	9.0	. .	47.5	21 49.39	57.08	1.36	IV.	3	32. .	28 . .	. .	. .	22 47.83	(33)
11	9	. .	. .	50.7	10.0	. .	. .	. .	26 10.10	57.11	1.27	IV.	3	25.410	34 48.1	38.0	9.4	27 8.48	40 35.5
12	7	. .	. .	27.9	47.0	6.7	25.8	. .	36 47.18	57.19	1.42	IV.	3	39.102	20 28.2	36.3	5.2	37 45.79	26 9.7
13	9.10	. .	. .	. .	. .	. .	. .	1.0	37 2.61	57.19	1.17	VI.	1	18.921	41 33.6	36.3	11.5	38 0.97	27 21.4
14	6	. .	34.6	54.0	13.0	. .	52.5	12.0	49 13.43	57.27	1.00	IV.	2	9.004	51 58.1	34.2	14.7	50 11.70	57 47.0
15	9.10	. .	. .	50.2?	. .	. .	. .	. .	53 9.57	57.29	1.43	III.	4	44.462	14 50.9	33.5	3.6	54 8.29	20 28.0
16	7.8	. .	. .	25.0	. .	4.5	23.7	. .	53 44.83	57.29	1.37	IV.	4	38.809	20 45.6	33.4	5.3	54 43.49	26 24.3
17	9	. .	. .	30.0	49.1	8.7	. .	. .	15 53 49.27	57.30	1.39	IV.	4	41.269	18 11.4	33.4	4.5	15 54 47.96	23 49.3
18	9	. .	. .	29.0	48.5	8.0	27.7	. .	16 6 48.62	57.37	1.37	IV.	4	42.529	16 52.2	31.0	4.2	16 7 47.36	22 27.4
19	6.7	. .	. .	14.0	33.0	52.7	12.0	. .	13 33.25	57.41	1.49	IV.	4	51.874	7 5.4	29.8	1.4	14 32.15	12 36.6
20	9	. .	42.0	1.7	21.1	40.7	0.0	. .	19 21.10	57.45	1.15	IV.	3	27.499	32 37.1	28.7	8.8	20 19.70	38 14.6
21	9	. .	. .	. .	19.7	39.2	. .	. .	29 19.76	57.50	1.34	IV.	4	44.498	14 48.6	26.7	3.6	30 18.60	20 18.9
22	7	. .	2.0	21.8	41.0	1.0	20.5	. .	32 41.57	57.52	0.94	IV.	2	14.471	46 15.0	26.1	12.9	33 40.03	51 54.0
23	9	. .	57.0	16.4	36.0	55.7	15.0	. .	37 36.02	57.55	0.98	IV.	3	18.241	42 17.6	25.1	11.7	38 34.55	47 54.4
24	7	. .	16.7	35.6	55.0	14.7	. .	. .	39 55.18	57.56	1.38	IV.	4	49.583	9 29.3	24.7	2.0	40 54.12	14 56.0
25	6	. .	. .	. .	44.5	4.0	. .	. .	40 44.52	57.56	0.99	IV.	2	19.062	41 28.0	24.5	11.5	41 43.07	47 4.0
26	7	. .	. .	53.0	12.2	32.0	51.0	11.0	41 12.38	57.57	1.00	IV.	3	20.699	39 43.4	24.4	10.9	42 10.95	45 18.7
27	9	. .	. .	. .	. .	. .	. .	. .	16 41 . .	+57.57	+1.29	.	4	44.4 .	−14 56.	−24.	− 3.6	16 42 . .	−37 20 (24.)

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 16,	16	+ 48.384	+ 0.021	+ 0.198	+ 0.396	+ 0.247	0 0 3.07	30.006
17,	16	+ 48.420	+ 0.025	+ 0.198	+ 0.396	+ 0.247	0 0 2.52	30.006

REMARKS.

June 16, 15^h 25^m. Stopped by clouds.

(23) 9. Mic. reading assumed as $23^r.070$ instead of $24^r.070$.

June 17. Smoky horizon; night unfavorable; first readings of barometer, &c., at 14^h 50^m; 18^h 10^m cloudy.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 23	June 16, 14 14	71 24 64.6	61.4	71.2	60.5	63.3	51.0	62.00	29.968	77.8	73.3	. .	. .	73.0
	15 25	. .	. .	. .	. .	. .	. .	. .	29.976	75.5	71.0			
Zone 24	June 17, 14 56	. .	. .	. .	. .	. .	. .	. .	30.076	74.0	70.8			
	15 0	76 24 59.0	60.0	67.9	60.9	59.6	48.0	59.23	. .	. .	. .	73.4	73.2	73.3
	15 26	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.6			
	16 0	59.0	59.2	67.9	60.6	59.9	47.0	58.93	. .	. .	. .	73.0	72.9	
	16 6	. .	. .	. .	. .	. .	. .	. .	30.082	73.2	68.9			
	16 29	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.6			

ZONE 24. JUNE 17. C. $D_{\circ}=-37^{\circ}\ 5'\ 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
28	9.10	. .	57.0	. .	. .	. .	14.0	. .	16 46 35.52	+57.59	+1.16	IV.	3	34.188	−25 37.3	−23.3	− 6.7	16 47 34.27	−37 31 7.3
29	9	. .	. .	24.2	43.0	. .	22.4	. .	46 43.40	57.59	0.99	IV.	3	20.687	39 44.1	23.2	11.0	47 41.98	45 18.3
30	8	. .	. .	. .	. .	. .	23.4	42.9	47 44.74	57.60	1.25	VI.	3	42.044	17 24.0	23.0	4.3	48 43.59	22 51.3
31	9	. .	. .	. .	. .	36.5	56.0	14.7	49 16.81	57.61	1.01	IV.	3	23.572	36 43.3	22.7	10.0	50 15.43	42 16.0
32	8.9	. .	13.0	32.2	51.8	11.0	31.0	. .	51 51.81	57.62	1.16	IV.	3	35 469	24 17.0	22.1	6.3	52 50.59	29 45.4
33	8.9	. .	. .	28.0	47.2	6.5	26.1	. .	52 47.82	57.62	1.06	IV.	3	28.441	31 38.0	22.0	8.4	53 46.50	37 8.4
34	9	. .	. .	. .	. .	57.0	16.5	. .	16 53 37.58	57.63	1.02	V.	3	25.482	34 43.6	21.8	9.4	16 54 36.23	40 14.8
35	8	. .	. .	38.1	56.9	16.5	35.6	. .	17 1 57.04	57.67	0.94	IV.	3	20.071	40 22.8	20.0	11.1	17 2 55.65	37 45 53.9
36	8	. .	28.0	. .	. .	. .	. .	. .	4 7.13	57.67	0.74	II.	2	4.760	56 25.2	19.5	16.1	5 5.54	38 2 0.8
37	9	. .	. .	33.0	52.0	. .	. .	. .	6 52.26	57.69	0.75	IV.	2	6.991	54 4.1	19.0	15.4	7 50.70	37 59 38.5
38	9	. .	. .	. .	6.0	. .	. .	. .	8 5.97	57.69	1.33	IV.	4	52.701	6 13.5	18.7	1.1	9 4.99	11 33.3
39	9	. .	. .	. .	. .	. .	8.5	. .	9 29.55	57.70	0.85	VI.	2	14.642	46 4.8	18.4	12.9	10 28.10	51 36.1
40	8	. .	48.1	7.4	27.0	46.5	5.7	. .	11 26.94	57.71	0.99	IV.	3	26.562	33 35.8	18.0	9.1	12 25.64	39 2.9
41	9	. .	15.5	34.9	. .	14.0	. .	. .	14 54.39	57.72	1.10	IV.	3	36.921	22 45.6	17.2	5.9	15 53.21	28 8.7
42	9	. .	. .	. .	. .	58.0	17.7	. .	16 38.57	57.73	0.77	V.	2	10.910	49 58.6	16.8	14.1	17 37.07	55 29.5
43	8.9	. .	59.0	17.5	36.8	56.0	15.0	. .	19 36.88	57.74	1.22	IV.	4	45.891	13 20.9	16.2	3.1	20 35.84	18 40.2
44	7	. .	56.1	16.0	35.1	54.5	13.5	33.0	19 35.08	57.74	1.32	IV.	4	53.989	4 52.7	16.2	0.7	20 34.14	10 9.6
45	9	. .	. .	57.0	. .	36.1	. .	. .	24 16.52	57.76	0.90	IV.	2	21.508	38 54.8	15.2	10.7	25 15.18	44 20.7
46	8.9	. .	. .	12.0	. .	50.5	9.8	. .	24 31.20	57.76	1.13	IV.	3	39.722	19 49.9	15.1	5.0	25 30.09	25 10.0
47	9	. .	. .	16.0	35.5	. .	. .	. .	26 35.50	57.77	0.93	IV.	2	24.741	35 31.9	14.7	9.7	27 34.20	40 56.3
48	9	. .	18.0	37.0	. .	. .	6.0	. .	26 56.82	57.77	0.87	IV.	2	20.482	39 59.1	14.6	11.0	27 55.46	45 24.7
49	9	. .	. .	. .	. .	11.0	30.5	. .	27 51.58	57.77	0.92	V.	2	24.826	35 26.4	14.4	9.6	28 50.27	40 50.4
50	9	. .	. .	31.2	50.7	. .	. .	. .	29 50.69	57.78	1.00	IV.	3	31.312	28 37.8	14.0	7.6	30 49.47	33 59.4
51	9	. .	. .	17.7	37.0	56.2	15.7	. .	37 36.98	57.80	1.14	IV.	4	43.461	15 53.7	12.2	3.9	38 35.92	21 9.8
52	9	. .	21.7	41.7	0.8	20.1	39.0	. .	40 0.70	57.81	0.82	IV.	3	20.255	40 11.4	11.7	11.1	40 59.33	45 34.2
53	9.10	. .	. .	. .	3.5	. .	42.0	. .	40 3.35	57.81	0.87	IV.	3	23.419	36 53.0	11.7	10.1	41 2.03	42 14.8
54	9	. .	35.0	54.0	13.8	. .	52.0	. .	43 13.56	57.82	1.08	IV.	4	40.086	19 25.6	11.0	4.9	44 12.46	24 41.5
55	9	. .	19.0	38.7	58.0	. .	37.0	. .	46 58.05	57.83	1.13	IV.	4	45.827	13 25.0	10.1	3.1	47 57.01	18 38.2
56	9.10	. .	. .	. .	. .	. .	29.0	. .	46 50.30	57.83	1.07	VI.	3	39.529	20 2.0	10.1	5.1	47 49.20	25 17.2
57	9	. .	23.0	42.1	2.0	. .	. .	. .	49 1.77	57.84	1.08	IV.	3	41.319	18 9.8	9.6	4.5	50 0.69	23 23.9
58	9.10	. .	. .	. .	. .	. .	22.0	41.5	48 43.43	57.84	1.18	VI.	4	49.191	9 53.3	9.7	2.1	49 42.45	15 5.1
59	8	. .	19.7	39.2	59.0	. .	. .	. .	53 58.77	57.85	0.82	IV.	3	22.472	37 52.3	8.5	10.3	54 57.44	43 1.1
60	8	. .	. .	0.0	18.7	38.5	. .	. .	54 19.07	57.85	0.99	IV.	3	36.598	23 6.0	8.4	6.0	55 17.91	28 20.4
61	8	. .	. .	. .	. .	19.0	. .	. .	54 59.57	57.86	0.98	V.	3	35.119	24 38.8	8.3	6.4	55 58.41	29 53.5
62	8	. .	. .	. .	. .	. .	50.0	9.0	55 11.07	57.86	1.05	.	3	40. .	20 . .	. .	. .	17 56 9.98	(25)
63	9	. .	. .	. .	16.7	. .	. .	. .	17 59 16.67	57.87	1.16	IV.	4	49.709	9 21.3	7.3	2.0	18 0 15.70	14 30.6
64	9	. .	. .	. .	10.7	30.0	49.7	. .	18 1 10.68	57.87	0.76	IV.	3	19.067	41 25.7	6.8	11.4	2 9.31	46 43.9
65	9	. .	16.0	. .	. .	15.1	. .	53.5	2 55.22	57.88	0.84	IV.	3	26.199	33 58.6	6.4	9.2	3 53.94	39 14.2
66	9	. .	. .	. .	13.0	. .	. .	. .	3 13.06	57.88	0.82	IV.	3	24.456	35 47.9	6.4	9.7	4 11.76	41 4.0
67	9	. .	28.7	48.0	7.5	26.8	46.0	. .	18 7 7.42	+57.89	+1.11	IV.	4	47.891	−11 15.4	− 5.5	− 2.5	18 8 6.42	−37 16 23.4

ZONE 25. JUNE 18. P. $D_{\circ}=-32^{\circ}\ 3'\ 20'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	5	54.0	12.5	30.5	49.3	. .	. .	. .	15 25 48.96	+57.76	+1.13	IV.	3	29.540	−30 29.0	−82.7	− 4.5	15 26 47.85	−32 35 16.2
2	7	29.5	48.0	6.0	24.5	. .	. .	. .	37 24.42	57.82	1.08	IV.	3	25.203	35 1.1	80.8	5.4	38 23.32	39 47.3
3	8	. .	40.0	57.0	16.5	35.0	. .	. .	39 16.25	57.82	1.29	V.	4	43.460	15 53.5	80.6	2.2	40 15.36	20 36.3
4	7	. .	29.0	47.5	6.0	. .	. .	. .	41 5.73	57.83	1.37	IV.	4	50.100	8 56.9	80.3	1.0	42 4.93	13 38.2
5	7	55.3	13.5	32.0	50.0	. .	. .	. .	15 48 50.07	+57.87	+1.13	IV.	3	30.112	−29 53.1	−79.0	− 4.5	15 49 49.07	−32 34 36.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 18.	16	+ 49.390	+ 0.020	+ 0.198	+ 0.396	+ 0.247	0 0 2.66	30.006

REMARKS.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 24	June 17, 17 1	76 24 59.2	59.1	68.1	60.9	59.0	47.5	58.97	30.076	72.2	68.0	72.6	72.5	
	17 29	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.2			
	18 1	58.4	58.9	67.2	61.1	58.0	46.5	58.35	30.060	71.0	65.7	69.4	71.0	73.0
Zone 25	June 18, 15 25	71 24 65.0	62.6	71.8	64.0	63.6	53.0	63.33	29.996	74.7	72.3			
	16 13	. .	. .	. .	. .	. .	. .	. .	29.996	73.7	70.2			
	17 27	. .	. .	. .	. .	. .	. .	. .	29.980	73.0	70.0			
	18 54	. .	. .	. .	. .	. .	. .	. .	29.950	71.6	69.0			
	19 18	. .	. .	. .	. .	. .	. .	. .	29.950	71.5	68.0			

ZONE 25. JUNE 18. P. $D_0 = -32° \ 3' \ 20''$—Continued.

No,	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
6	8	. .	57.0	15.0	34.0	. .	. .	. .	15 50 33.56	+57.88	+1.35	IV.	4	48.367	−10 45.8	−78.7	− 1.3	15 51 32.79	−32 15 25.8
7	7	23.0	41.0	59.5	. .	. .	. .	. .	53 17.68	57.89	1.08	III.	3	25.980	34 12.0	78.2	5.3	54 16.65	38 55.5
8	6	. .	. .	. .	. .	4.0	22.0	40.5	53 45.55	57.89	1.00	V.	2	17.710	42 52.7	78.1	6.8	54 44.44	47 37.6
9	9	. .	1.0	. .	. .	. .	. .	. .	56 37.59	57.91	1.03	VII.	2	20.790	39 39.1	77.6	6.2	57 36.53	44 22.9
10	7	. .	. .	. .	18.0	36.0	. .	. .	59 59.72	57.92	1.36	VII.	4	49.045	10 1.8	77.1	1.2	15 59 52.00	14 40.1
11	9	. .	. .	. .	19.0	37.0	. .	. .	15 59 18.89	57.92	1.36	VII.	4	49.045	10 1.8	77.1	1.2	16 0 18.17	14 40.1
12	6	53.0	11.5	29.5	47.7	. .	. .	42.5	16 3 47.82	57.94	1.09	IV.	3	27.400	32 43.3	76.3	5.0	4 46.85	37 24.6
13	8	. .	. .	. .	. .	. .	56.0	14.0	13 19.23	57.98	0.96	VII.	2	14.840	45 51.9	74.4	7.3	14 18.17	50 33.6
14	8	0.0	17.7	. .	54.0	. .	. .	. .	26 54.33	58.04	1.13	IV.	3	30.100	29 53.8	71.6	4.5	27 53.50	34 29.9
15	7	8.0	27.0	45.0	. .	. .	. .	. .	31 3.16	58.06	1.17	III.	3	32.970	26 53.4	70.8	4.0	32 2.39	31 28.2
16	8	. .	. .	. .	. .	29.0	. .	5.0	31 10.49	58.06	1.17	VII.	3	33.610	26 13.2	70.7	3.9	32 9.72	30 47.8
17	8	. .	. .	. .	. .	. .	43.0	. .	32 6.59	58.06	1.25	VII.	3	40.520	18 59.5	70.5	2.7	33 5.90	23 32.7
18	9	. .	. .	. .	. .	9.0	. .	. .	34 50.79	58.07	1.37	VII.	4	50.340	8 40.7	69.9	1.0	35 50.23	13 11.6
19	8	. .	. .	. .	. .	. .	. .	54.0	35 59.17	58.08	1.07	VII.	3	24.700	35 32.1	69.7	5.5	36 58.32	40 7.3
20	8	38.0	57.0	15.0	34.0	. .	. .	. .	44 33.34	58.11	1.26	IV.	4	41.150	18 18.8	67.8	2.6	45 32.71	22 49.2
21	7	. .	10.0	28.0	. .	. .	22.5	41.0	44 46.31	58.11	1.35	VII.	4	48.340	10 46.2	67.8	1.3	45 45.77	15 15.3
22	9	. .	9.0	. .	45.0	. .	. .	. .	47 45.32	58.12	1.03	IV.	2	21.960	38 26.3	67.1	6.0	48 44.47	42 59.4
23	9	. .	. .	. .	. .	15.0	. .	. .	48 56.69	58.13	1.06	VII.+	3	23.920	36 21.1	66.9	5.6	49 55.88	40 53.6
24	8	. .	. .	. .	54.0	. .	. .	. .	50 54.04	58.13	1.24	IV.	4	38.910	20 39.3	66.4	3.0	51 53.41	25 8.7
25	.	. .	. .	. .	. .	19.0	. .	. .	50 58.79	58.13	1.38	VII.+	4	51.000	7 59.7	66.4	0.8	51 58.30	12 26.9
26	8	. .	. .	. .	. .	. .	. .	22.0	52 27.17	58.14	1.08	VII.	3	26.210	33 57.5	66.1	5.3	53 26.39	38 28.9
27	8	. .	. .	. .	. .	6.0	. .	. .	54 47.67	58.15	1.01	V.	2	19.820	40 40.4	65.6	6.4	55 46.83	45 12.4
28	9	. .	. .	. .	. .	. .	11.0	19.0	55 34.23	58.15	0.94	VII.	1	14.570	46 6.1	65.4	7.4	56 33.32	50 38.9
29	8	. .	. .	. .	. .	43.0	1.0	. .	57 24.67	58.16	1.27	VI.	4	41.980	17 25.9	65.0	2.4	16 58 24.10	21 53.3
30	9	. .	. .	23.0	. .	59.0	. .	. .	16 59 41.00	58.17	1.24	V.	4	38.550	21 1.8	64.4	3.0	17 0 40.41	25 29.2
31	4	. .	. .	. .	34.0	52.0	10.0	28.0	17 0 33.98	58.17	1.43	VII.	4	55.320	3 28.0	64.2	0.1	1 33.58	7 52.3
32	4	. .	. .	. .	14.0	33.0	. .	. .	2 14.39	58.17	1.35	IV.	4	48.515	10 36.4	63.9	1.3	3 13.91	15 1.6
33	7	. .	. .	. .	. .	. .	. .	20.0	2 25.30	58.17	1.23	VII.	3	38.050	21 34.5	63.8	3.1	3 24.70	26 1.4
34	7	. .	11.5	30.0	49.0	. .	. .	. .	4 48.43	58.18	1.17	IV.	3	33.615	26 13.2	63.3	3.9	5 47.78	30 40.4
35	4	24.5	43.0	1.0	. .	. .	. .	. .	6 19.30	58.19	1.19	III.	3	34.950	24 49.2	62.9	3.7	7 18.68	29 15.8
36	4	41.0	59.0	16.5	35.0	. .	. .	. .	7 35.21	58.19	1.26	IV.	4	40.840	18 38.2	62.6	2.6	8 34.66	23 3.4
37	9	. .	. .	. .	. .	. .	12.0	30.0	7 35.55	58.19	1.42	VII.	4	53.810	5 2.6	62.6	0.4	8 35.16	9 25.6
38	8	. .	. .	. .	. .	47.0	. .	. .	9 28.67	58.20	1.03	V.	2	22.300	38 5.1	62.2	6.0	10 27.90	42 33.3
39	8	. .	. .	. .	. .	28.5	46.5	5.0	10 10.11	58.20	1.07	VII.	2	24.580	35 41.4	62.0	5.6	11 9.38	40 9.0
40	9	22.0	40.5	59.0	. .	. .	. .	. .	15 17.07	58.22	1.01	III.	2	20.065	40 25.1	60.8	6.4	16 16.30	44 52.3
41	8	. .	. .	. .	47.0	5.5	23.5	. .	15 47.02	58.22	0.96	VI.	1	15.555	45 4.8	60.8	7.2	16 46.20	49 32.8
42	9	. .	. .	. .	. .	. .	. .	30.0	16 35.30	58.22	1.24	VII.	4	39.440	20 4.9	60.6	2.9	17 34.76	24 28.4
43	8	. .	40.0	59.0	17.0	. .	. .	. .	22 17.01	58.24	0.88	IV.	1	8.850	52 4.8	59.2	8.4	23 16.13	56 32.4
44	4	0.5	18.5	. .	55.0	. .	. .	. .	23 55.06	58.24	1.20	IV.	3	35.790	23 56.7	58.8	3.5	24 54.50	28 19.0
45	9	. .	. .	. .	. .	46.0	. .	22.0	27 27.37	58.25	0.99	VII.	2	18.420	42 7.7	58.0	6.7	28 26.61	46 32.4
46	8	. .	. .	. .	. .	. .	. .	10.0	29 15.44	58.26	1.44	VII.	4	56.420	2 19.6	57.6	0.0	30 15.14	6 37.2
47	8	22.0	. .	. .	. .	. .	. .	. .	32 17.04	58.27	0.85	I.	1	7.130	53 51.8	56.8	8.8	33 16.16	58 17.4
48	5	. .	. .	29.0	47.0	. .	. .	. .	32 47.16	58.27	1.12	IV.	3	29.300	30 44.1	56.7	4.7	33 46.55	35 5.5
49	9	. .	. .	. .	. .	. .	12.0	. .	33 35.62	58.27	1.32	VI.	4	45.650	13 35.5	56.5	1.8	34 35.21	17 53.8
50	8	. .	34.0	52.0	. .	. .	. .	. .	36 10.36	58.28	1.29	III.	4	42.787	16 35.9	55.9	2.3	37 9.93	20 54.1
51	5	. .	52.0	10.5	28.5	. .	. .	. .	37 28.62	58.28	1.11	IV.	3	27.896	32 12.0	55.6	4.9	38 28.01	36 32.5
52	8	10.0	28.0	46.5	. .	. .	. .	. .	43 4.63	58.29	1.23	III.	3	37.670	21 58.5	54.3	3.2	44 4.15	26 16.0
53	4	33.5	52.0	10.0	. .	. .	. .	. .	45 28.30	58.30	1.23	III.	3	37.345	22 19.1	53.7	3.2	46 27.83	26 36.0
54	4	. .	. .	43.0	1.0	. .	. .	. .	17 46 1.16	+58.30	+1.07	IV.	3	24.995	−35 14.0	−53.6	− 5.5	17 47 0.53	−32 39 33.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

June 18. Examined the Readings of the Circle frequently without perceiving any change.

(25) 10. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″							in.	°	°	°	°	°
Zone 25	June 18, 20 0	. .	. .	. .	. .	. .	. .	. .	29.938	71.5	68.0			
	20 59	. .	. .	. .	. .	. .	. .	. .	29.930	71.0	67.4			

ZONE 25. JUNE 18. P. $D_0 = -32° \ 3' \ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
55	8	32.0	50.0	. .	. .	. .	. .	. .	17 54 26.51	+58.32	+1.35	II.	4	47.765	−11 23.3	−51.5	− 1.4	17 55 26.18	−32 15 36.2
56	9	. .	. .	. .	46.0	. .	22.5	40.5	54 46.02	58.32	1.38	VII.	4	51.060	7 55.4	51.4	0.8	17 55 45.72	12 7.6
57	4	16.0	34.0	52.5	. .	. .	. .	. .	17 59 10.74	58.33	1.02	III.	3	20.765	39 39.0	50.4	6.3	18 0 10.09	43 55.7
58	8	56.0	14.0	32.0	. .	. .	. .	. .	18 0 50.46	58.34	1.23	III.	4	38.145	21 27.5	50.0	3.1	1 50.03	25 40.6
59	8	. .	. .	. .	. .	26.0	. .	3.0	1 7.91	58.34	1.06	VII.	3	23.915	36 21.3	49.9	5.7	2 7.31	40 36.9
60	9	. .	. .	. .	35.5	. .	. .	. .	3 35.56	58.34	1.13	IV.	3	29.810	30 11.9	49.3	4.6	4 35.03	34 25.8
61	7	. .	. .	32.0	49.5	7.7	. .	. .	4 49.75	58.34	1.26	V.	4	40.850	18 37.2	49.0	2.6	5 49.35	22 48.8
62	9	. .	. .	. .	. .	. .	41.0	. .	7 4.64	58.35	1.33	VI.	4	47.363	11 48.1	48.4	1.5	8 4.32	15 58.0
63	9	. .	12.0	30.0	. .	. .	. .	. .	9 48.36	58.35	1.25	III.	4	39.700	19 49.8	47.8	2.8	10 47.96	24 0.4
64	9	. .	. .	. .	. .	. .	. .	14.0	9 19.30	58.35	1.25	VII.	4	39.870	19 37.8	47.9	2.8	10 18.90	23 48.5
65	6	. .	. .	. .	. .	. .	10.0	28.0	10 33.50	58.35	1.36	VI.	4	48.770	10 19.6	47.6	1.2	11 33.21	14 28.4
66	8	. .	. .	. .	. .	. .	14.0	33.0	11 37.98	58.36	1.33	VII.	4	46.660	12 31.4	47.4	1.6	12 37.67	16 40.4
67	5	. .	13.5	31.5	50.0	. .	. .	. .	13 49.92	58.36	1.27	IV.	4	41.820	17 36.6	46.8	2.4	14 49.55	21 45.8
68	8	51.0	. .	28.0	. .	. .	. .	. .	15 46.12	58.36	0.94	III.	2	13.840	46 55.2	46.3	7.5	16 45.42	51 9.0
69	8	. .	29.0	. .	5.5	. .	. .	. .	17 5.52	58.37	1.21	IV.	3	37.165	22 30.4	46.0	3.3	18 5.10	26 39.7
70	7	. .	. .	. .	. .	42.0	0.5	18.0	17 23.64	58.37	1.14	VII.	3	30.850	29 6.2	45.9	4.4	18 23.15	33 16.5
71	6	29.0	47.0	. .	. .	. .	. .	. .	20 23.54	58.37	1.26	II.	4	40.610	18 52.7	45.2	2.6	21 23.17	23 0.5
72	8	. .	55.0	. .	31.0	. .	. .	. .	21 31.30	58.37	1.05	IV.	3	23.120	37 11.6	44.9	5.8	22 30.72	32 41 22.3
73	7	. .	. .	19.0	. .	. .	14.0	. .	24 37.32	58.38	0.83	VI.	1	5.160	55 56.	44.2	9.1	25 36.53	33 0 (9.)
74	8	37.0	55.0	13.5	. .	. .	. .	. .	27 31.83	58.38	0.91	III.	2	11.715	49 8.4	43.5	7.9	28 31.12	32 53 19.8
75	9	. .	. .	. .	. .	58.0	. .	. .	28 39.80	58.38	1.41	VII.	4	53.380	5 30.4	43.2	0.4	29 39.59	9 34.0
76	7	. .	. .	5.5	24.0	. .	. .	. .	31 23.90	58.39	1.18	IV.	3	33.790	26 2.1	42.5	3.9	32 23.47	30 8.5
77	7	57.0	15.5	33.5	. .	. .	. .	. .	36 51.91	58.39	1.01	III.	4	21.510	38 51.2	41.2	6.1	37 51.31	42 58.5
78	6	21.5	39.5	58.0	16.3	. .	. .	. .	38 16.33	58.40	0.90	IV.	1	12.677	48 5.2	40.9	7.8	39 15.63	52 13.9
79	4	. .	21.0	39.0	57.5	. .	. .	. .	42 57.40	58.40	1.40	IV.	4	52.880	6 2.3	39.7	0.4	43 57.20	10 2.4
80	9	. .	. .	. .	. .	. .	43.0	. .	46 6.50	58.40	1.14	VI.	3	31.555	28 22.5	38.9	4.3	47 6.04	32 25.7
81	7	. .	. .	. .	. .	52.0	10.0	. .	47 33.67	58.41	1.25	VI.	4	41.460	17 58.7	38.6	2.5	48 33.33	21 59.8
82	7	. .	44.0	2.0	. .	. .	. .	. .	49 20.37	58.41	1.19	III.	3	36.470	23 13.9	38.2	3.4	50 29.97	27 15.5
83	7	. .	. .	. .	. .	. .	55.0	. .	49 18.54	58.41	1.17	VI.	3	33.600	26 14.1	38.2	3.9	50 18.12	30 16.2
84	8	. .	. .	. .	. .	. .	. .	35.5	49 30.78	58.41	1.20	VII.	3	37.310	22 21.1	38.1	3.2	50 30.39	26 22.4
85	8	. .	. .	. .	. .	26.0	44.0	. .	51 7.52	58.41	0.95	V.	1	16.440	44 9.6	37.7	7.1	52 6.88	48 14.4
86	7	. .	. .	. .	. .	. .	53.5	. .	52 16.85	58.41	0.86	VII.	1	7.730	53 14.3	37.4	8.7	53 16.12	57 20.4
87	9	. .	3.0	21.5	39.5	. .	. .	. .	54 39.62	58.41	1.08	IV.	3	26.635	33 31.2	36.9	5.2	55 39.11	37 33.3
88	8	. .	. .	. .	5.0	. .	. .	. .	18 57 5.04	58.41	0.95	IV.	2	16.417	44 14.0	36.3	7.1	18 58 4.40	48 17.4
89	8	. .	9.0	27.5	45.5	. .	. .	. .	19 4 45.60	58.42	1.19	IV.	3	36.380	23 19.8	34.5	3.4	19 5 45.21	27 17.7
90	8	. .	. .	43.0	1.0	. .	. .	. .	6 1.07	58.42	1.42	IV.	4	54.280	4 34.6	34.2	0.2	7 0.91	8 29.0
91	9	45.5	4.0	. .	. .	. .	. .	. .	11 40.42	58.42	1.04	II.	3	23.150	37 9.2	32.8	5.8	12 39.88	41 7.8
92	8	. .	. .	48.0	6.0	. .	. .	. .	12 6.16	58.42	0.98	IV.	2	17.700	42 53.4	32.7	6.9	13 5.56	46 53.0
93	9	32.0	50.0	8.5	. .	. .	. .	. .	14 26.66	58.42	1.14	III.	3	32.240	27 39.6	32.2	4.2	15 26.22	31 36.0
94	8	. .	. .	. .	. .	. .	. .	40.5	18 45.57	58.42	0.95	VII.	2	15.840	44 49.2	31.2	7.2	19 44.94	48 47.6
95	4	. .	. .	. .	. .	. .	. .	. .	19 . . .	. .	. .	VII.	4	39.750	19 45.5	. .	. .	19 (39) . .	(23)
96	8	. .	. .	. .	. .	. .	1.0	19.5	20 0 24.53	58.41	0.99	VII.	2	18.750	41 46.8	21.3	6.7	20 1 23.93	45 34.8
97	9	5.0	23.7	42.0	0.0	. .	. .	. .	9 0.12	58.40	0.99	IV.	2	19.370	41 8.9	19.3	6.5	9 59.51	44 54.7
98	7	. .	. .	. .	. .	. .	. .	7.3	9 12.69	58.40	1.37	VII.	4	51.100	7 52.9	19.3	0.7	10 12.46	11 32.9
99	7	5.5	24.0	42.0	0.5	. .	. .	. .	16 0.47	58.39	0.95	IV.	2	15.650	45 2.0	17.8	7.2	16 59.81	48 47.0
100	8	52.5	10.5	28.7	47.0	. .	. .	. .	31 47.06	58.37	1.10	IV.	3	29.163	30 52.6	14.4	4.7	32 46.53	34 31.7
101	6	. .	10.0	28.0	46.3	. .	. .	. .	33 46.37	58.37	1.17	IV.	3	35.550	24 11.8	14.0	3.6	34 45.91	27 49.4
102	4	37.0	55.0	13.5	31.5	. .	. .	. .	40 31.66	58.36	1.07	IV.	3	27.380	32 44.6	12.6	5.0	41 31.09	36 22.2
103	6	. .	. .	. .	. .	. .	. .	18.0	20 40 23.35	+58.36	+1.30	VII.	4	46.185	−13 1.4	−12.6	− 1.8	20 41 23.01	−32 16 35.8

CORRECTIONS.

Date,		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 25. JUNE 18. P. $D_\circ = -32°\ 3'\ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
104	9	. .	. .	. .	. .	39.0	. .	15.0	20 42 20.56	+58.35	+1.33	VII.	4	47.657	−11 28.9	−12.2	− 1.3	20 43 20.24	−32 15 2.4
105	7	. .	0.0	19.0	37.5	. .	. .	. .	45 37.05	58.35	1.41	IV.	4	55.220	3 35.5	11.5	0.0	46 36.81	7 7.0
106	9	23.0	41.0	. .	17.5	. .	. .	. .	48 17.51	58.34	1.30	IV.	4	46.080	13 9.2	11.0	1.6	49 17.15	16 41.8
107	4	10.5	29.0	47.3	5.3	. .	. .	. .	51 5.49	58.34	0.93	IV.	2	13.970	46 47.2	10.4	7.5	52 4.76	50 25.1
108	4	19.3	37.7	56.3	14.3	. .	. .	. .	56 14.42	58.33	0.86	IV.	1	8.337	52 37.1	9.4	8.6	57 13.61	56 15.1
109	9	. .	. .	5.0	. .	. .	. .	. .	58 23.26	58.32	1.19	VII.	3	37.010	22 39.7	9.0	3.3	20 59 22.77	26 12.0
110	8	. .	. .	. .	. .	. .	. .	8.0	20 59 13.17	+58.32	+1.06	VII.	3	26.130	−34 2.5	− 8.8	− 5.3	21 0 12.55	−32 37 36.6

ZONE 26. JUNE 22. C. $D_\circ = -33°\ 19'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	30.4	49.2	. .	. .	. .	. .	17 4 7.54	+58.98	+2.18	III.	4	45.112	−14 10.0	− 7.7	− 2.8	17 5 8.70	−33 33 50.5
2	9	. .	. .	. .	46.0	. .	. .	42.0	4 46.25	58.98	2.11	IV.	4	39.970	19 32.8	7.6	3.8	5 47.34	39 14.2
3	7	. .	. .	. .	. .	17.0	35.6	54.0	4 58.59	58.98	2.15	IV.	4	45.451	13 48.8	7.5	2.7	5 59.72	33 33 29.0
4	8	. .	46.0	4.7	23.2	. .	. .	. .	14 23.23	59.01	1.58	IV.	2	14.198	46 33.0	5.5	9.3	15 23.82	34 6 17.8
5	8	. .	. .	27.5	46.0	4.5	23.0	. .	15 45.99	59.01	1.60	IV.	3	22.888	37 26.1	5.2	7.4	16 46.60	33 57 8.7
6	9	. .	. .	12.9	31.7	. .	. .	. .	18 31.55	59.02	1.68	IV.	4	41.434	18 1.0	4.6	3.5	19 32.25	37 39.1
7	7.8	. .	. .	53.1	12.0	30.7	48.9	. .	19 11.95	59.02	1.67	IV.	4	43.631	15 43.0	4.4	3.1	20 12.64	35 20.5
8	7	. .	17.0	35.0	53.6	12.1	30.7	. .	20 53.70	59.02	1.63	IV.	4	44.076	15 15.0	4.1	3.0	21 54.35	33 34 52.1
9	7	. .	. .	. .	. .	. .	6.0	24.1	21 28.58	59.03	1.31	VI.	2	11.041	49 50.3	4.0	10.0	22 28.92	34 9 34.3
10	8.9	. .	. .	. .	. .	19.0	37.0	. .	23 0.15	59.03	1.36	V.	3	22.233	38 7.4	3.6	7.6	24 0.54	33 57 48.6
11	8.9	. .	. .	57.0	15.0	33.5	53.0	. .	30 15.36	59.05	1.17	IV.	3	26.930	33 12.6	2.0	6.6	31 15.58	52 51.2
12	8.9	. .	. .	. .	34.0	53.5	11.7	. .	30 34.53	59.05	1.11	IV.	3	20.845	39 34.2	1.9	7.8	31 34.69	33 59 13.9
13	8.9	. .	2.5	21.1	39.5	. .	. .	. .	17 32 39.61	+59.05	+1.03	IV.	3	19.918	−40 32.3	− 1.4	− 8.1	17 33 39.69	−34 0 11.8

ZONE 27. JUNE 24. P. $D_\circ = -28°\ 18'\ 20'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	18.0	. .	53.5	. .	. .	14 30 35.75	+58.03	+1.55	V.	4	39.840	−19 40.6	−59.9	− 4.2	14 31 35.33	−28 39 4.7
2	9	. .	. .	. .	. .	. .	29.0	47.0	31 54.01	58.03	1.40	VII.	2	16.970	43 38.5	59.7	7.3	32 53.44	29 3 5.5
3	7	. .	. .	47.5	5.0	22.5	. .	. .	40 4.98	58.06	1.63	V.	4	53.750	5 7.3	58.7	2.4	41 4.67	28 24 28.3
4	8	. .	. .	5.0	22.0	. .	. .	. .	45 22.30	58.08	1.44	IV.	3	24.413	35 50.6	57.9	6.3	46 21.82	55 14.8
5	6	25.3	42.5	0.3	17.7	. .	. .	. .	47 17.73	58.09	1.56	IV.	4	45.750	13 29.8	57.7	3.4	48 17.38	32 50.9
6	7	22.0	39.3	57.0	14.5	. .	. .	. .	57 14.58	58.12	1.43	IV.	3	24.460	35 47.7	56.2	6.3	58 14.13	55 10.2
7	8	. .	. .	. .	6.0	. .	40.5	. .	58 5.75	58.13	1.53	VI.	4	41.540	17 53.6	56.1	4.0	59 5.41	37 13.7
8	7	. .	. .	. .	. .	. .	. .	35.0	14 58 42.31	58.13	1.47	VII.	3	32.150	27 44.9	56.1	5.2	14 59 41.91	47 6.2
9	9	. .	. .	. .	. .	. .	. .	15.0	15 4 22.40	58.15	1.57	VII.	4	47.800	11 20.0	55.1	3.2	15 5 22.12	30 38.3
10	8	0.0	17.5	. .	52.0	. .	. .	. .	8 52.58	58.16	1.52	IV.	4	38.750	20 49.4	54.6	4.3	9 52.26	40 8.3
11	6	47.0	4.5	22.0	39.5	. .	. .	. .	12 39.59	58.18	1.45	IV.	3	31.280	28 39.9	53.8	5.3	13 39.22	28 47 59.3
12	8	39.0	58.0	16.0	34.0	. .	. .	. .	18 33.15	58.20	1.37	IV.	2	17.425	43 10.8	52.8	7.2	19 32.72	29 2 30.8
13	7	20.0	37.5	55.0	. .	. .	. .	. .	25 12.54	58.22	1.53	III.	4	45.927	13 18.7	51.8	3.4	26 12.29	28 32 33.9
14	6	12.0	. .	. .	4.5	22.0	. .	57.0	26 4.45	58.22	1.55	IV.	4	48.680	10 25.9	51.8	3.1	27 4.22	28 29 40.8
15	8	. .	36.0	53.0	11.0	. .	. .	. .	28 10.95	58.23	1.34	IV.	2	14.230	46 31.0	51.3	7.6	29 10.52	29 5 49.9
16	.	. .	21.0	. .	. .	. .	. .	. .	29 56. .	58.23	. .	.	.	. .	. . .	. .	. .	30 (57.) .	
17	7	. .	. .	4.0	22.0	. .	. .	. .	31 21.81	58.24	1.45	IV.	3	31.630	29 20.5	50.7	5.4	32 21.50	28 48 36.6
18	7	35.0	52.0	. .	. .	. .	2.0	19.5	31 27.12	58.24	1.48	VI.	3	37.090	22 35.0	50.7	4.6	32 26.84	41 50.3
19	7	45.5	. .	. .	. .	. .	. .	. .	38 38. .	58.26	. .	.	.	. .	. . .	. .	. .	39 (39.) .	
20	8	24.5	. .	0.5	. .	. .	. .	. .	45 17.57	58.28	1.46	III.	3	34.390	25 24.5	48.3	4.9	46 17.31	44 37.7
21	4	45.7	3.3	21.0	38.3	. .	. .	31.0	15 46 38.40	+58.28	+1.45	IV.	3	32.820	−27 3.0	−48.1	− 5.1	15 47 38.13	−28 46 16.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 22,	16	+ 50.529	+ 0.004	+ 0.198	+ 0.396	+ 0.247	0 0 2.43	30.004
24,	13	+ 50.453	+ 0.002	+ 0.198	+ 0.396	+ 0.247	0 0 2.46	30.008

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 26	June 22,	16 55	72 39 60.0	63.9	69.0	65.0	59.0	48.9	60.97	. .	. .	. .	62.0	63.0	70.0
		17 4	. .	. .	. .	. .	. .	. .	. .	30.120	63.8	56.4			
		17 35	60.6	64.5	69.4	65.0	60.6	48.0	61.35	30.114	62.8	56.0	61.2	63.0	69.8
Zone 27	June 24,	14 30	67 39 60.8	60.0	69.0	62.3	59.3	48.6	60.00	30.126	70.6	67.5	. .	. .	70.0
		15 18	. .	. .	. .	. .	. .	. .	. .	30.134	70.0	67.0			
		15 52	. .	. .	. .	. .	. .	. .	. .	30.128	69.5	65.6			
		16 20	. .	. .	. .	. .	. .	. .	. .	30.124	69.1	65.2			
		17 11	. .	. .	. .	. .	. .	. .	. .	30.114	69.0	66.0			

REMARKS.

June 22. Night unfavorable; stars unsteady; indistinct as if through clouds.
(26) 2. $17^h\ 3^m$, cloudy.
(26) 3. 1st reading of bar., &c., at $16^h\ 55^m$.
(26) 4. 2d reading of bar., &c., at $17^h\ 35^m$.
(27) 10. Minute assumed as 8 instead of 7.
(27) 17. Micrometer reading assumed as $30^r.630$, not $31^r.630$.

ZONE 27. JUNE 24. P. $D_{\circ} = -28° \, 18' \, 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	5	30.3	47.5	. .	22.5	. .	. .	15.3	15 52 22.66	+58.30	+1.45	IV.	3	36.234	−23 28.9	−47.0	− 4.7	15 53 22.41	−28 42 40.6
23	9	. .	. .	55.0	. .	30.0	. .	. .	15 58 12.50	58.32	1.51	V.	4	44.640	14 39.3	45.9	3.6	15 59 12.33	28 33 48.8
24	4	51.3	. .	26.5	. .	1.2	. .	. .	16 0 43.89	58.33	1.35	V.	2	18.853	41 40.9	45.4	7.0	16 1 43.57	29 0 53.3
25	8	. .	45.0	. .	. .	38.0	. .	. .	3 20.26	58.33	1.47	V.	4	38.705	20 51.9	44.8	4.4	4 20.06	28 40 1.1
26	8	. .	. .	54.0	. .	. .	. .	. .	10 11.59	58.35	1.29	III.	1	11.170	49 39.6	43.5	8.0	11 11.23	29 8 51.1
27	8	. .	. .	59.0	17.0	34.5	. .	. .	15 16.82	58.36	1.33	IV.	2	16.815	43 48.8	42.4	7.3	16 16.51	29 2 58.5
28	7	14.5	32.5	50.0	7.5	. .	. .	. .	17 7.49	58.37	1.37	IV.	2	22.880	37 28.6	42.0	6.5	18 7.23	28 56 37.1
29	8	. .	. .	1.0	. .	. .	. .	. .	20 18.39	58.38	1.29	III.	1	11.053	49 46.8	41.4	8.1	21 18.06	29 8 56.3
30	8	. .	. .	45.0	. .	20.0	. .	. .	22 2.49	58.38	1.43	III.	3	35.930	23 47.7	41.0	4.7	23 2.30	28 42 53.4
31	6	55.0	. .	30.0	47.0	. .	. .	. .	29 47.04	58.40	1.46	IV.	4	40.280	19 13.5	39.3	4.1	30 46.90	38 16.9
32	7	49.5	7.0	25.0	. .	. .	. .	. .	31 42.28	58.40	1.39	III.	3	29.470	30 33.2	38.8	5.6	32 42.07	49 37.6
33	8	37.0	54.0	12.0	29.5	. .	. .	. .	35 29.49	58.41	1.36	IV.	3	23.973	36 18.0	38.0	6.3	36 29.26	55 22.3
34	7	39.0	. .	13.0	31.0	. .	. .	. .	37 31.04	58.42	1.44	IV.	3	37.745	21 53.9	37.5	4.5	38 30.90	40 55.9
35	7	. .	. .	33.0	50.5	. .	. .	. .	38 50.56	58.42	1.38	IV.	3	28.020	32 4.2	37.2	5.8	39 50.36	51 7.2
36	9	. .	. .	14.0	. .	50.0	. .	. .	43 31.99	58.43	1.43	V.	4	36.750	22 54.6	36.1	4.6	44 31.85	28 41 55.3
37	8	. .	. .	48.0	. .	23.0	. .	. .	45 5.46	58.43	1.31	V.	2	17.963	42 36.7	35.7	7.2	46 5.20	29 1 39.6
38	7	. .	. .	. .	3.3	20.0	. .	. .	50 2.87	58.44	1.52	VII.	4	53.633	5 13.9	34.6	2.4	51 2.83	28 24 10.9
39	8	. .	. .	12.0	29.0	. .	4.0	. .	16 55 29.89	58.46	1.43	IV.	4	38.870	20 41.8	33.3	4.3	16 56 29.78	28 39 39.4
40	7	4.0	21.0	39.0	. .	. .	. .	. .	17 11 56.61	58.49	1.24	III.	1	7.735	53 14.5	29.4	8.6	17 10 56.34	29 12 12.5
41	8	. .	20.0	37.5	55.0	. .	. .	. .	13 55.05	58.49	1.48	IV.	4	47.630	11 31.9	28.9	3.1	14 55.02	28 30 23.9
42	8	48.0	. .	22.5	39.0	. .	. .	. .	15 39.82	58.49	1.51	III.	4	53.810	5 3.9	28.5	2.3	16 39.82	23 54.7
43	8	. .	. .	. .	47.5	5.0	. .	. .	16 47.48	58.50	1.42	IV.	4	40.400	19 6.0	28.2	4.1	17 47.40	37 58.3
44	7	. .	. .	. .	57.0	14.5	32.0	. .	17 56.93	58.50	1.32	IV.	3	23.600	36 41.5	28.0	6.4	18 56.75	28 55 35.9
45	.	. .	. .	. .	. .	. .	. .	. .	27 ?	58.51	1.29	.	3	17.650	42 54.6	25.8	7.2	28 . .	29 1 47.6
46	7	. .	. .	35.5	53.0	11.0	. .	. .	29 53.17	58.52	1.36	IV.	3	28.840	31 12.8	25.1	5.7	30 53.05	28 50 3.6
47	9	30.0	47.0	. .	. .	. .	. .	. .	41 22.30	58.53	1.43	III.	4	43.630	15 43.1	22.4	3.6	42 22.26	34 29.1
48	8	. .	. .	. .	. .	. .	. .	37.0	41 44.44	58.53	1.48	VII.	4	51.740	7 12.7	22.3	2.6	42 44.45	25 57.6
49	8	. .	. .	. .	. .	. .	52.5	10.5	43 17.70	58.54	1.43	VI.	4	44.380	20 10.1	21.9	4.3	44 17.67	38 56.3
50	4	15.5	33.0	50.5	8.0	. .	. .	. .	48 8.07	58.54	1.38	IV.	3	34.360	25 26.6	20.7	4.9	49 7.99	44 12.2
51	9	. .	. .	. .	. .	. .	. .	19.0	48 26.27	58.54	1.32	VII.	3	26.180	33 59.5	20.6	6.0	49 26.13	52 46.1
52	9	. .	3.0	. .	40.0	. .	. .	. .	51 38.04	58.54	1.49	IV.	4	54.840	4 0.0	19.8	2.3	52 38.07	22 41.1
53	9	. .	. .	. .	16.0	. .	52.0	. .	53 16.48	58.55	1.37	III.	3	34.680	25 6.2	19.4	4.9	54 16.40	43 50.5
54	7	13.0	31.0	48.0	. .	. .	. .	. .	56 5.71	58.55	1.42	III.	4	45.650	13 36.2	18.7	3.4	57 5.68	32 18.3
55	8	. .	. .	. .	. .	34.0	. .	. .	56 16.49	58.55	1.48	V.	4	55.350	3 27.7	18.7	2.2	57 16.52	22 8.6
56	3	. .	. .	17.5	35.0	. .	. .	. .	57 35.00	58.55	1.45	IV.	4	49.700	9.21.9	18.4	2.8	58 35.00	28 3.1
57	9	. .	. .	. .	21.0	. .	. .	. .	17 58 21.05	58.55	1.34	IV.	3	32.470	27 25.2	18.2	5.2	17 59 20.94	46 8.6
58	6	33.5	51.0	9.0	26.5	. .	. .	. .	18 1 26.36	58.56	1.29	IV.	3	23.370	36 56.1	17.4	6.4	18 2 26.21	55 39.9
59	8	9.0	27.0	44.0	. .	. .	. .	. .	4 1.80	58.56	1.30	III.	3	26.455	33 42.4	16.8	6.0	5 1.66	52 25.2
60	8	. .	. .	26.0	43.0	1.0	. .	. .	4 43.33	58.56	1.39	V.	4	39.177	20 22.4	16.6	4.3	5 43.28	39 3.3
61	4	1.0	18.5	36.0	53.5	. .	. .	. .	6 53.57	58.56	1.36	IV.	3	36.520	23 11.0	16.0	4.6	7 53.49	28 41 51.6
62	7	. .	. .	35.5	53.0	. .	. .	. .	9 53.04	58.56	1.22	IV.	1	12.135	48 39.3	15.3	8.0	10 52.82	29 7 22.6
63	6	. .	. .	13.0	30.5	48.0	. .	. .	11 30.50	58.56	1.42	IV.	4	47.230	10 54.5	14.9	3.2	12 30.48	28 29 32.6
64	5	11.0	29.0	46.3	3.5	. .	. .	. .	17 57 3.81	+58.58	+1.27	IV.	3	26.880	−33 15.7	− 3.8	− 6.0	18 58 3.66	−28 51 45.5

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 27	June 24, 17 27	. .	. .	. .	. .	. .	. .	. .	30.104	68.6	65.5			
	18 11	. .	. .	. .	. .	. .	. .	. .	30.100	68.0	65.0			
	18 15	. .	59.6	69.0	61.7	58.7	47.0	59.37	. .	. .	. .	. .	. .	67.5
	18 57	60.2	. .	. .	. .	. .	. .	. .	. .	. .	64.5			
	19 0	67 39 60.0	59.0	69.2	62.3	58.8	47.4	59.45	.					

REMARKS.

June 24. Microscope examined frequently without perceiving change in the readings.
After 15ʰ passing clouds occasionally.
At 19ʰ apparently very clear, yet only a few very faint stars passed the field in 17ᵐ.
(27) 40. Min. assumed as 9 instead of 11.
(27) 49. Micrometer reading assumed as 39ʳ.380, not 44ʳ.380.
(27) 52. Transit over T. IV assumed as 38ˢ.0, not 40ˢ.0.
(27) 63. Mic. reading assumed as 48ʳ.230 instead of 47ʳ.230.

ZONE 28. JULY 1. C. $D_0 = -29° 34' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9.10	. .	. .	. .	50.0?	. .	. .	. .	15 29 50.05	+63.28	+1.24	IV.	3	20.221	−40 13.5	−15.6	− 5.0	15 30 54.57	−30 14 34.1
2	7.8	. .	0.0	17.2	35.0	53.0	10.5	. .	31 35.17	63.28	1.42	IV.	4	53.649	5 14.0	15.3	0.2	32 39.87	29 39 29.5
3	8	. .	. .	. .	5.0	23.0	. .	. .	33 5.12	63.29	1.32	IV.	3	31.138	28 48.7	15.0	3.4	34 9.73	30 3 7.1
4	7.8	. .	. .	. .	45.0	3.2	. .	. .	33 45.20	63.29	1.26	IV.	3	20.841	39 34.4	14.9	4.9	34 49.75	13 54.2
5	7.8	. .	. .	. .	. .	. .	0.1	. .	34 24.51	63.29	1.27	VI.	3	22.238	38 6.8	14.8	4.7	35 29.07	12 26.3
6	9	. .	. .	2.0	19.6	. .	. .	. .	36 19.72	63.30	1.22	IV.	2	10.168	50 45.3	14.4	6.5	37 24.24	30 25 6.2
7	8	. .	. .	34.5	52.0	10.0	27.5	. .	38 52.15	63.31	1.42	IV.	4	48.748	10 21.6	14.0	0.9	39 56.88	29 44 36.5
8	9	. .	. .	. .	19.5	37.0	. .	. .	40 19.36	63.31	1.33	IV.	3	25.168	35 3.2	13.7	4.3	41 24.00	30 9 21.2
9	8	. .	. .	. .	8.7	26.5	44.5	. .	41 8.78	63.32	1.30	IV.	3	20.072	40 22.7	13.6	5.0	42 13.60	14 41.3
10	7	. .	12.8	30.3	48.1	5.9	23.8	. .	42 48.18	63.32	1.27	IV.	3	15.515	45 8.5	13.3	5.7	43 52.77	30 19 27.5
11	9	. .	. .	. .	. .	. .	56.0?	. .	45 20.54	63.33	1.41	VI.	4	40.139	19 21.5	12.8	2.1	46 25.28	29 53 36.4
12	9	. .	. .	. .	51.0	10.0	27.5	. .	46 51.68	63.33	1.29	IV.	2	14.351	46 23.5	12.6	5.8	47 56.30	30 20 41.9
13	8	. .	. .	. .	14.5	32.0	49.1	. .	48 14.04	63.34	1.31	IV.	2	17.641	42 57.2	12.3	5.3	49 18.69	17 14.8
14	8	. .	. .	. .	. .	11.7	28.7	46.0	48 53.23	63.34	1.39	V.	3	30.821	29 8.4	12.2	3.4	49 58.96	3 24.0
15	8.9	. .	. .	. .	38.7	55.5	13.1	. .	50 37.98	63.35	1.36	IV.	3	25.727	34 28.1	11.8	4.2	51 42.69	30 8 44.1
16	8	. .	1.3	. .	. .	54.5	. .	. .	52 36.79	63.35	1.47	IV.	4	43.206	16 9.7	11.5	1.7	53 41.61	29 50 22.9
17	7.8	. .	35.0	53.0	10.5	19.0	. .	. .	56 10.77	63.36	1.38	IV.	3	25.192	35 1.7	10.8	4.3	57 15.51	30 9 16.8
18	9	. .	. .	3.5	. .	39.0	56.5	. .	56 21.12	63.36	1.37	IV.	3	22.466	37 52.7	10.8	4.7	15 57 25.85	12 8.2
19	9	. .	. .	37.5	54.0	. .	30.5	. .	15 59 54.76	63.38	1.42	IV.	3	26.576	33 34.9	10.1	4.0	16 0 59.56	7 49.0
20	8.9	. .	. .	. .	45.0	13.0	30.7	. .	16 0 45.07	63.38	1.36	IV.	2	14.524	46 12.6	9.9	5.8	1 59.81	30 20 28.3
21	8	. .	. .	. .	11.6	29.5	. .	. .	2 11.67	63.38	1.54	IV.	4	47.798	11 21.2	9.7	1.0	3 16.59	29 45 31.9
22	7	. .	. .	. .	22.5	. .	58.0	. .	3 22.53	63.39	1.52	IV.	4	44.168	15 9.3	9.5	1.5	4 27.44	29 49 20.3
23	7.8	. .	58.0	15.5	33.0	51.1	9.0	. .	5 33.32	63.39	1.41	IV.	3	20.248	40 11.8	9.0	5.0	6 38.12	30 14 25.8
24	8.9	. .	. .	6.0	23.7	. .	0.5	. .	7 24.17	63.40	1.45	IV.	3	26.801	33 20.7	8.6	4.0	9 29.02	7 33.3
25	9	. .	59.0	. .	35.0	. .	10.0	27.0	7 34.43	68.40	1.47	IV.	3	30.979	28 58.5	8.6	3.4	9 39.30	30 3 10.5
26	8.9	. .	. .	28.0	56.0	3.5	. .	. .	10 45?.82	63.41	1.59	IV.	4	49.050	10 2.8	8.0	0.8	11 50?.82	29 44 11.6
27	8	45.1	3.0	. .	39.5	. .	. .	14.7	13 21.14	63.41	1.57	IV.	4	43.950	15 22.8	7.5	1.6	14 26.12	49 31.9
28	9	. .	. .	36.5	. .	. .	11.7	. .	13 36.38	63.41	1.57	IV.	4	45.187	14 5.3	7.4	1.4	14 41.36	48 14.1
29	9.10	. .	. .	9.0?	. .	. .	. .	. .	18 26.78	63.42	1.55	III.	4	37.528	22 7.6	6.5	2.5	19 31.75	56 16.6
30	8?	. .	. .	. .	39.5	57.5	. .	. .	20 39.62	63.43	1.64	IV.	4	53.152	5 45.3	6.1	0.3	21 44.69	39 51.7
31	8.9?	. .	. .	. .	. .	. .	. .	. .	22 . .	63.44	1.60	IV.	3	41.782	17 40.5	5.8	1.9	22 . .	51 48.2
32	8.9?	. .	. .	. .	. .	. .	. .	. .	22 . .	63.44	1.59	IV.	3	41.069	18 25.3	5.8	2.0	23 . .	52 33.1
33	9	. .	. .	. .	55.0	. .	. .	. .	24 55.04	63.44	1.57	IV.	3	36.766	22 55.4	5.3	2.6	26 0.05	29 57 3.3
34	8	. .	. .	. .	. .	. .	38.0	. .	26 2.41	63.45	1.50	VI.	3	18.548	41 58.1	5.0	5.2	27 7.36	30 16 8.3
35	7	. .	10.0	28.0	46.0	3.5	21.5	. .	28 45.80	63.45	1.54	IV.	3	24.731	35 30.5	4.5	4.3	29 50.79	9 39.3
36	7.8	. .	. .	12.0	29.5	47.2	. .	23.5	31 29.69	63.46	1.53	IV.	3	20.526	39 54.4	3.9	4.9	32 34.68	14 3.2
37	9	. .	. .	. .	. .	. .	1.0	. .	31 25.41	63.46	1.54	VI.	3	21.591	38 47.3	3.9	4.8	32 30.41	30 12 56.0
38	9	. .	. .	7.2	25.0	. .	. .	. .	33 25.01	63.47	1.62	IV.	4	35.549	24 10.4	3.5	2.8	34 30.10	29 58 16.7
39	8.9	. .	. .	33.5	. .	9.5	. .	. .	37 51.48	63.48	1.60	IV.	3	28.628	31 26.2	2.6	3.8	38 56.56	30 5 32.6
40	8	. .	57.5	15.5	33.3	. .	. .	. .	40 33.28	63.49	1.53	IV.	2	10.549	50 21.6	2.1	6.4	41 38.30	30 24 30.1
41	9	. .	. .	. .	. .	2.9	20.5	. .	40 45.11	63.49	1.70	V.	4	44.361	14 56.9	2.0	1.5	41 50.30	29 49 0.4
42	8	. .	. .	. .	30.0	47.0	5.0	. .	42 29.56	63.49	1.61	IV.	3	24.016	36 15.4	1.6	4.4	43 34.66	30 10 21.4
43	9	. .	. .	. .	6.0	. .	41.0	. .	43 5.74	63.49	1.61	IV.	3	25.258	34 58.1	1.5	4.2	44 10.84	9 3.8
44	7.8	. .	. .	. .	. .	. .	. .	51.0?	43 57.52	63.50	1.56	VII.	2	14.681	46 1.7	1.3	5.8	45 2.58	20 8.8
45	8	. .	. .	. .	59.6	17.5	35.0	. .	16 45 59.54	+63.50	+1.57	IV.	2	14.689	−46 2.2	− 0.9	− 5.8	16 47 4.61	−30 20 8.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 1,	13	+ 55.312	+ 0.034	+ 0.213	+ 0.298	+ 0.330	0 0 2.44	30.001

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 28	July 1, 15 25	68 54 60.2	58.1	68.8	59.2	58.1	45.0	58.23	. .	. .	. .	77.5	76.0	74.6
	15 29	. .	. .	. .	. .	. .	. .	. .	29.846	77.0	74.9			
	16 3	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.5			
	16 28	. .	. .	. .	. .	. .	. .	. .	29.844	76.2	73.5			
	16 45	59.8	58.9	68.8	57.6	59.5	46.7	58.55	29.846	76.0	73.4	76.	74.6	

REMARKS.

(28) 20. Transits over T.'s IV–VI assumed as 55s.0, 23s.0, and 40s.7; not 45s.0, 13s.0, and 30s.7.
(28) 24. Minutes assumed as 8; not 9.
(28) 25. Minutes assumed as 8; not 9.
(28) 27. Transits over T.'s II, III, and V assumed as recorded over T.'s I, II, and IV.
(28) 28. Transit over T. IV assumed as recorded over T. III.
After 16h interrupted by clouds, which rendered the mags. and transits doubtful.

ZONE 29. JULY 7. P. $D_0 = -27° \ 2' \ 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination. 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	..	..	..	59.0	..	..	..	15 33 59.05	+67.68	+2.61	IV.	3	27.555	−32 33.5	−73.7	− 3.3	15 35 9.34	−27 36 40.5
2	6	4.0	21.0	38.5	..	..	..	..	35 55.87	67.69	2.62	III.	3	28.960	31 5.2	73.4	3.1	37 6.18	35 11.7
3	9	..	..	..	..	28.0	..	..	36 10.61	67.69	2.61	V.	3	28.350	31 43.7	73.3	3.2	37 20.91	35 50.2
4	9	..	52.0	..	26.0	..	..	..	38 26.33	67.69	2.88	IV.	4	55.910	2 52.0	72.9	0.0	39 36.90	6 54.9
5	8	51.0	8.0	26.0	..	0.0	..	..	44 42.91	67.70	2.62	V.	3	36.490	23 12.9	71.7	2.2	45 53.23	27 16.8
6	8	..	..	..	..	45.0	3.0	20.0	45 27.97	67.70	2.58	V.	3	33.520	26 19.3	71.6	2.6	46 38.25	30 23.5
7	6	..	..	..	..	12.0	29.0	46.5	46 54.54	67.70	2.77	V.	4	51.100	7 53.8	71.3	0.5	48 5.01	11 55.6
8	9	..	..	24.0	..	59.0	..	..	50 41.49	67.71	2.54	III.	3	30.980	28 58.4	70.6	2.9	51 51.74	33 1.9
9	8	55.0	12.0	30.0	..	..	..	..	55 46.98	67.72	2.57	III.	4	38.930	20 38.2	69.7	1.9	56 57.27	24 39.8
10	7	..	..	..	19.0	36.0	54.0	..	56 36.37	67.72	2.63	IV.	4	44.840	14 26.9	69.6	1.2	57 46.72	18 27.7
11	7	..	..	28.0	45.0	2.5	..	..	57 45.16	67.72	2.61	IV.	4	43.940	15 23.5	69.3	1.3	15 58 55.49	19 24.1
12	6	..	43.0	1.0	18.0	..	..	..	15 59 18.03	67.72	2.50	IV.	3	34.390	25 24.7	69.0	2.5	16 0 28.25	29 26.2
13	4	2.5	20.0	37.3	55.0	..	..	..	16 1 54.74	67.72	2.46	IV.	3	31.993	27 54.9	68.5	2.8	3 4.92	31 56.2
14	8	..	..	..	..	..	..	18.0	2 25.85	67.72	2.33	VII.	2	20.060	40 24.6	68.4	4.2	3 35.90	44 27.2
15	8	..	..	..	..	51.0	..	25.0	3 33.16	67.72	2.25	VII.	1	12.940	47 48.0	68.1	5.1	4 43.13	51 51.2
16	7	59.0	16.0	34.0	51.0	..	..	..	7 51.05	67.72	2.35	IV.	3	24.290	35 58.4	67.3	3.7	9 1.12	39 59.4
17	7	..	..	..	42.0	59.0	16.0	..	8 41.58	67.72	2.19	IV.	1	10.200	50 40.5	67.1	5.4	9 51.49	54 43.0
18	7	47.0	4.0	21.5	39.0	..	..	..	12 38.91	67.73	2.42	IV.	3	32.560	27 19.5	66.3	2.7	13 49.06	31 18.5
19	8	54.5	11.5	29.0	..	..	..	..	14 46.30	67.73	2.52	III.	4	44.410	14 54.4	65.9	1.3	15 56.55	18 51.6
20	9	..	..	..	..	8.5	26.0	43.0	14 51.17	67.73	2.49	V.	4	41.200	18 15.4	65.9	1.7	16 1.39	22 13.0
21	8	..	..	..	..	..	..	55.0	16 2.99	67.73	2.50	VII.	4	42.890	16 28.0	65.6	1.5	17 13.22	20 25.1
22	6	56.3	13.5	31.0	48.0	..	..	..	19 48.24	67.74	2.30	IV.	3	29.147	30 53.6	64.9	3.1	20 58.28	34 51.6
23	7	52.5	10.0	27.5	44.0	..	..	..	22 44.60	67.74	2.15	IV.	2	17.180	43 26.1	64.3	4.5	23 54.49	47 24.9
24	2.3	31.3	48.5	6.0	23.0	..	..	..	25 23.32	67.74	2.07	IV.	1	10.883	49 57.5	63.7	5.3	26 33.13	53 56.5
25	8	44.0	1.0	18.5	35.5	..	..	..	28 35.82	67.74	2.18	IV.	3	23.655	36 38.0	63.0	3.8	29 45.74	40 34.8
26	6	16.5	33.5	51.0	8.5	..	..	..	31 8.41	67.74	2.27	IV.	3	33.063	26 47.8	62.5	2.6	32 18.42	30 42.9
27	5	..	..	31.0	49.3	..	..	..	33 48.79	67.74	2.44	IV.	4	52.710	6 12.9	61.9	0.3	34 58.97	10 5.1
28	8	..	..	..	22.0	39.0	56.0	13.5	34 21.65	67.74	2.43	V.	4	52.610	6 19.0	61.8	0.3	35 31.82	10 11.1
29	8	..	..	50.0	..	25.0	..	..	36 7.49	67.75	2.40	V.	4	50.775	8 14.1	61.4	0.5	37 17.64	12 6.0
30	9	..	4.5	..	..	..	14.0	..	38 39.29	67.75	2.32	VI.	4	45.020	14 14.9	61.0	1.2	39 49.36	18 7.1
31	8	..	..	..	16.0	..	..	..	40 16.05	67.75	2.11	IV.	3	25.950	34 14.1	60.5	3.5	41 25.91	38 38.1
32	7	..	..	..	..	52.0	..	..	40 34.58	67.75	2.06	V.	3	21.340	39 3.4	60.5	4.0	41 44.39	42 57.9
33	8	..	..	..	..	..	28.0	45.0	40 53.05	67.75	2.03	VI.	3	18.900	41 35.9	60.4	4.3	42 2.83	45 30.6
34	7	5.0	22.0	39.0	..	..	..	..	43 56.64	67.75	2.28	III.	4	44.160	15 10.0	59.7	1.3	45 6.67	19 1.0
35	7	..	..	..	18.5	36.0	53.0	..	44 18.50	67.75	2.18	IV.	3	33.845	25 58.7	59.6	2.6	45 28.43	29 50.9
36	8	..	..	..	..	..	18.0	..	45 43.23	67.75	1.95	VI.	2	13.470	47 18.2	59.4	5.0	46 52.93	51 12.6
37	7	..	..	6.0	23.0	40.5	..	..	47 23.17	67.75	2.22	IV.	4	41.130	18 20.0	59.0	1.7	48 33.14	22 10.7
38	8	..	..	32.0	..	..	..	..	48 49.37	67.75	2.07	III.	3	28.550	31 31.0	58.7	3.2	49 59.19	35 22.9
39	7	..	..	..	..	25.0	..	59.5	50 7.51	67.75	2.08	V.	3	30.090	29 54.4	58.4	3.0	51 17.34	33 45.8
40	7	..	..	..	24.0	41.0	58.5	..	51 23.79	67.75	1.97	IV.	2	21.540	38 52.8	58.1	4.0	52 33.51	42 44.9
41	8	..	40.0	..	16.0	..	..	..	54 15.32	67.75	2.21	IV.	4	46.305	12 55.2	57.5	1.0	55 25.28	16 43.7
42	7	12.0	29.0	47.0	..	..	..	..	57 4.03	67.75	2.05	III.	3	32.220	27 40.8	56.8	2.7	58 13.83	31 30.3
43	7	16.0	33.5	51.0	..	..	..	42.5	57 8.75	67.75	2.07	VII.	3	33.875	25 56.3	56.8	2.5	58 18.57	29 45.6
44	7	..	..	..	..	48.0	5.5	..	58 30.66	67.75	1.94	V.	3	22.620	37 43.0	56.5	3.9	16 59 40.35	41 33.4
45	7	..	..	..	36.0	53.5	11.0	..	16 59 36.16	67.75	2.00	IV.	3	29.430	30 35.9	56.3	3.1	17 0 45.91	34 25.3
46	4	0.0	17.5	34.5	52.0	..	..	..	17 1 52.03	67.75	2.00	IV.	3	29.573	30 26.9	55.7	3.1	3 1.78	34 15.7
47	4	36.5	53.5	..	28.5	46.0	..	..	3 28.47	67.75	1.95	IV.	3	27.160	32 58.3	55.4	3.3	4 38.17	36 47.0
48	8	..	..	..	48.0	..	22.5	..	4 47.89	67.75	1.84	IV.	2	17.060	43 33.5	55.1	4.6	5 57.48	47 23.2
49	7	..	..	..	..	15.0	..	..	17 5 57.65	+67.75	+2.07	V.	4	40.110	−19 23.7	−54.8	− 1.8	17 7 7.47	−27 23 10.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 7,	12	+ 59.985	− 0.022	+ 0.213	+ 0.298	+ 0.330		

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 29	July 7, 15 33	66 24 65.0	60.3	73.0	61.5	60.5	50.3	61.77	29.956	79.0	73.7			
	17 10	..	..	..	..	..	..	..	29.956	76.0	71.0			

ZONE 29. JULY 7. P. $D_0 = -27° 2' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	. .	. .	. .	. .	11.5	28.5	. .	17 6 53.96	+67.75	+1.95	V.	3	28.135	−31 57.1	−54.6	− 3.2	17 8 3.66	−27 35 44.9
51	8	. .	. .	. .	. .	. .	. .	12.0	7 19.89	67.75	1.94	VII.	3	27.830	32 15.6	54.5	3.3	8 29.58	36 3.4
52	8	. .	. .	. .	34.0	. .	. .	. .	9 34.05	67.75	1.90	IV.	3	27.270	32 51.4	54.0	3.3	10 43.70	36 38.7
53	8	. .	. .	. .	22.0	37.0	. .	. .	10 21.97	67.75	2.14	IV.	4	51.690	7 17.2	53.8	0.4	11 31.86	11 1.4
54	7	. .	. .	. .	33.0	. .	. .	. .	33.00	67.75	2.12	VII.	4	47.290	11 52.0	53.8	0.9	11 42.87	15 36.7
55	7	40.0	57.0	15.0	32.0	. .	. .	. .	17 15 32.01	+67.75	+1.96	IV.	3	36.020	−23 42.2	−52.6	− 2.3	17 16 41.72	−27 27 27.1

ZONE 30. JULY 7. P. $D_0 = -27° 2' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	48.0	5.0	. .	. .	. .	. .	19 40 22.58	+67.58	+1.23	III.	2	20.315	−40 9.7	−18.1	− 4.2	19 41 31.39	−27 43 22.0
2	8	. .	. .	. .	46.0	3.0	. .	. .	40 45.79	67.58	1.17	IV.	1	13.170	47 34.5	18.0	5.1	41 54.54	50 47.6
3	9	. .	. .	. .	. .	. .	52.0	9.5	41 17.40	67.58	1.35	V.	3	35.450	24 18.2	17.9	2.3	42 26.33	27 28.4
4	9	53.5	. .	28.0	. .	. .	. .	. .	44 45.42	67.57	1.35	III.	3	33.270	26 34.9	17.1	2.6	45 54.34	29 44.6
5	4	43.0	0.5	18.0	35.0	. .	. .	27.0	46 35.11	67.56	1.32	IV.	3	29.420	30 36.6	16.6	3.1	47 43.99	33 46.3
6	7	. .	. .	. .	53.0	10.0	27.5	. .	54 52.85	67.54	1.51	VI.	4	48.300	10 49.2	14.8	0.7	56 1.90	13 54.7
7	8	. .	. .	. .	35.0	52.5	9.5	. .	19 56 34.97	67.54	1.33	IV.	3	24.480	35 46.4	14.4	3.7	19 57 43.84	38 54.5
8	5	54.0	11.0	28.5	46.0	. .	. .	. .	20 4 45.89	67.52	1.45	IV.	3	34.350	25 27.2	12.5	2.5	20 5 54.86	28 32.2
9	9	38.5	56.0	12.0	30.5	. .	. .	. .	8 30.29	67.51	1.43	IV.	3	30.813	29 8.9	11.7	2.9	9 39.23	32 13.5
10	8	. .	44.5	2.0	19.3	. .	. .	. .	13 19.27	67.49	1.56	IV.	4	44.460	9 37.3	10.6	0.7	14 28.32	12 38.6
11	9	19.0	36.0	. .	12.0	. .	. .	. .	17 11.23	67.48	1.51	IV.	3	36.120	23 36.0	9.8	2.2	18 20.22	26 38.0
12	8	40.0	. .	15.0	32.0	. .	. .	. .	24 32.18	67.46	1.39	IV.	2	19.210	41 18.8	8.2	4.4	25 41.03	44 21.4
13	7	. .	. .	25.0	42.0	59.5	. .	. .	25 42.17	67.46	1.62	IV.	4	45.056	14 13.5	7.9	1.1	26 51.25	17 12.5
14	6	34.5	52.0	9.0	26.3	. .	. .	. .	30 26.41	67.45	1.70	IV.	4	51.735	7 14.1	7.0	0.3	31 35.56	10 11.4
15	9	25.0	42.0	0.0	. .	. .	. .	. .	34 17.09	67.44	1.44	III.	2	18.650	41 54.0	6.1	4.5	35 25.97	44 54.6
16	5	. .	. .	46.0	3.0	20.5	. .	. .	35 3.15	67.43	1.41	IV.	2	16.460	44 11.3	6.0	4.7	36 11.99	47 12.0
17	8	. .	56.0	13.5	. .	. .	. .	. .	36 30.85	67.43	1.45	III.	2	17.125	43 29.6	5.7	4.6	37 39.73	46 29.9
18	8	. .	. .	. .	. .	53.0	10.0	28.0	36 35.56	67.43	1.46	VI.	2	19.870	40 36.7	5.7	4.3	37 44.45	43 36.7
19	7	4.0	21.5	39.0	. .	. .	. .	. .	39 56.33	67.42	1.38	III.	1	8.830	52 6.0	5.0	5.7	41 5.13	55 6.7
20	5	33.5	51.0	8.0	. .	. .	. .	. .	41 25.62	67.42	1.44	III.	2	15.673	45 0.6	4.7	4.8	42 34.48	48 0.1
21	4	. .	. .	. .	43.0	59.5	17.0	. .	41 42.49	67.41	1.59	IV.	3	34.190	25 37.2	4.6	2.5	42 51.49	28 34.3
22	8	35.0	52.0	10.0	27.0	. .	. .	. .	49 27.06	67.39	1.57	IV.	3	27.493	32 37.4	3.1	3.3	50 36.02	35 33.8
23	4	49.5	6.5	24.0	41.3	. .	. .	. .	51 41.34	67.38	1.64	IV.	3	34.855	24 55.3	2.6	2.4	52 50.36	27 50.3
24	8	34.0	. .	8.5	. .	. .	. .	. .	54 25.88	67.38	1.72	III.	4	42.690	16 42.2	2.1	1.4	55 34.98	19 35.7
25	8	27.0	44.5	1.7	19.0	. .	. .	. .	57 19.18	67.37	1.46	IV.	1	10.473	50 23.4	1.5	5.5	20 58 28.01	53 20.4
26	8	. .	29.0	47.0	5.0	. .	. .	. .	20 59 4.40	+67.36	+1.56	IV.	2	20.770	−39 40.9	− 1.2	− 4.2	21 0 13.32	−27 42 36.3

ZONE 31. JULY 9. P. $D_0 = -25° 48' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	13.0	30.5	48.0	. .	. .	. .	15 50 47.72	+67.35	+1.65	IV.	2	12.690	−48 7.4	−48.7	− 4.7	15 51 56.72	−26 37 0.8
2	7	8.5	25.0	43.0	0.0	. .	. .	. .	52 59.82	67.35	1.74	IV.	3	31.520	28 24.7	48.3	2.6	54 8.91	17 15.6
3	9	3.0	. .	37.0	54.0	. .	. .	46.0	52 54.28	67.35	1.76	VII.	3	36.120	23 35.5	48.3	2.1	54 3.39	12 25.9
4	7	. .	. .	27.0	44.0	. .	. .	. .	54 44.21	67.35	1.67	IV.	2	17.610	42 59.1	48.0	4.1	55 53.23	31 51.2
5	8	. .	. .	. .	12.0	29.0	. .	. .	55 11.89	67.36	1.66	V.	2	16.873	43 45.0	47.9	4.2	56 20.91	26 32 37.1
6	4	59.3	. .	33.3	50.5	. .	. .	. .	57 50.49	67.36	1.84	IV.	4	52.545	6 23.0	47.3	0.3	15 58 59.69	25 55 10.6
7	9	. .	55.0	12.0	. .	. .	. .	. .	59 29.23	67.36	1.80	III.	4	45.720	13 31.9	47.0	1.0	16 0 38.39	26 2 19.9
8	6.7	. .	. .	. .	48.0	15.0	. .	. .	15 59 57.90	67.36	1.66	IV.	2	18.905	41 37.8	47.0	4.0	1 6.92	30 28.8
9	8	. .	.	. .	. .	37.0	54.0	. .	16 14 19.70	+67.37	+1.65	VI.	2	21.960	−38 25.8	−44.1	− 3.7	16 15 28.72	−26 27 13.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 9,	12	+ 59.630	− 0.004	+ 0.213	+ 0.298	+ 0.330		

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 30	July 7, 19 30 & 21 00	66 24 63.5	61.3	73.3	63.0	59.7	49.0	61.63						
	19 40	. .	. .	. .	. .	. .	. .	. .	29.960	74.0	68.8			
	20 59	. .	. .	. .	. .	. .	. .	. .	29.962	72.3	68.3			
Zone 31	July 9, 15 50	65 9 63.3	56.6	69.3	58.4	55.3	45.6	58.08	30.000	81.5	77.6			
	17 24	. .	. .	. .	. .	. .	. .	. .	30.012	79.0	74.5			
	18 0	62.8	56.6	. .	58.6	. .	44.7	. .	30.012	78.0	74.5			
	19 11	. .	. .	. .	. .	. .	. .	. .	30.028	77.5	73.4			

REMARKS.

July 7, $17^h 20^m$. Stopped by moon-light.
$19^h 30^m$. Belt resumed.
Reading of Bar., &c., at $19^h 30^m$.

(29) 54. Minutes assumed as 10.

(30) 10. Micrometer reading assumed as $49^r.460$; not $44^r.460$.

(31) 8. Transits over T.'s IV and V assumed as $58^s.0$ and $25^s.0$ instead of $48^s.0$ and $15^s.0$.

Zone 31. July 9. P. $D_0 = -25° 48' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	7	. .	. .	. .	. .	. .	4.5	22.0	16 15 30.37	+67.37	+1.72	VI.	3	35.395	−24 21.4	−43.8	− 2.2	16 16 39.46	−26 13 7.4
11	8	. .	. .	. .	. .	. .	22.0	39.0	16 47.72	67.37	1.80	VII.	4	52.973	5 55.1	43.5	0.2	17 56.89	25 54 38.8
12	1	12.5	30.0	47.0	4.0	. .	. .	. .	19 4.09	67.38	1.74	IV.	3	42.540	16 53.0	43.1	1.4	20 13.21	26 5 37.5
13	8	. .	. .	. .	. .	. .	9.0	. .	19 34.72	67.38	1.69	V.	3	33.380	26 28.0	42.9	2.4	20 43.79	15 13.3
14	6	. .	. .	. .	2.0	19.0	36.5	. .	21 2.04	67.38	1.71	IV.	3	36.120	23 36.0	42.6	2.1	22 11.13	12 20.7
15	7	2.0	19.0	36.5	. .	. .	. .	. .	24 53.44	67.38	1.71	III.	4	38.660	20 55.2	41.8	1.8	26 2.53	9 38.8
16	6	20.0	38.0	. .	12.0	. .	. .	. .	28 12.05	67.38	1.56	IV.	1	8.730	52 12.3	41.1	5.1	29 20.99	40 58.5
17	7	. .	. .	34.0	50.5	. .	. .	. .	29 50.82	67.38	1.74	IV.	4	46.720	12 28.9	40.7	0.9	30 59.94	1 10.5
18	5	. .	. .	. .	. .	. .	24.0	41.0	29 48.65	67.38	1.71	VII.	4	39.150	20 23.0	40.7	1.7	30 57.74	9 5.4
19	7	51.0	8.0	25.5	42.0	. .	. .	. .	32 42.34	67.38	1.69	IV.	3	38.380	21 14.3	40.1	1.8	33 51.41	9 56.2
20	6	. .	. .	. .	. .	44.5	2.0	. .	33 27.44	67.38	1.59	V.	2	18.317	42 14.7	40.0	4.0	34 36.41	30 58.7
21	6	. .	50.0	7.0	24.5	. .	. .	. .	35 24.35	67.39	1.62	IV.	3	26.857	33 17.1	39.5	3.1	36 33.36	21 59.7
22	7	54.0	11.0	28.5	. .	. .	. .	. .	39 45.54	67.39	1.59	III.	2	20.650	39 48.6	38.6	3.8	40 54.52	28 31.0
23	9	. .	. .	. .	16.5	. .	51.5	. .	40 16.86	67.39	1.62	VI.	3	27.305	32 49.1	38.4	3.1	41 25.87	21 30.6
24	6	. .	. .	. .	. .	43.0	59.5	. .	41 25.41	67.39	1.54	V.	2	12.790	48 0.9	38.2	4.7	42 34.34	36 43.8
25	9	. .	. .	. .	. .	48.0	5.0	. .	42 30.70	67.39	1.58	V.	2	19.620	40 52.9	38.0	3.9	43 39.67	29 34.8
26	7	. .	. .	8.5	25.0	. .	. .	. .	44 25.34	67.39	1.66	IV.	3	38.533	21 4.6	37.5	1.8	45 34.39	9 43.9
27	8	10.0	27.0	44.0	. .	. .	. .	. .	47 1.36	67.39	1.58	III.	3	22.485	37 51.5	36.9	3.6	48 10.33	26 32.0
28	7	. .	28.0	45.0	2.0	. .	. .	. .	49 2.16	67.39	1.66	IV.	4	39.830	19 41.5	36.5	1.7	50 11.21	8 19.7
29	8	6.5	24.0	41.3	58.3	. .	. .	. .	50 58.29	67.39	1.58	IV.	3	24.005	36 16.1	36.0	3.4	52 7.26	24 55.5
30	7	. .	. .	31.0	48.0	. .	. .	. .	53 48.11	67.39	1.50	IV.	1	7.183	53 49.3	35.4	5.4	54 57.00	42 30.1
31	7	47.0	5.0	21.5	38.5	. .	. .	. .	55 38.77	67.39	1.58	IV.	3	26.623	33 31.9	35.0	3.1	56 47.74	22 10.0
32	5	. .	. .	10.0	26.5	44.0	. .	. .	56 26.84	67.39	1.60	IV.	3	30.655	29 18.9	34.8	2.7	57 35.83	17 56.4
33	9	. .	6.0	23.0	40.0	. .	. .	. .	16 58 40.17	67.39	1.61	IV.	3	34.994	24 46.6	34.3	2.2	16 59 49.17	13 23.1
34	8	. .	32.5	49.5	6.5	. .	. .	. .	17 0 6.66	67.39	1.66	IV.	4	45.020	14 15.7	33.9	1.1	17 1 15.71	2 50.7
35	9	. .	. .	. .	. .	. .	59.5	. .	0 25.21	67.39	1.60	VI.	3	33.060	26 47.8	33.9	2.4	1 34.20	15 24.1
36	7	. .	. .	. .	. .	. .	44.0	1.0	1 9.52	67.39	1.53	VI.	2	18.595	41 57.0	33.7	4.0	2 18.44	30 34.7
37	7	54.0	12.0	28.0	. .	. .	. .	. .	4 45.67	67.39	1.57	III.	3	27.540	32 34.4	32.9	3.0	5 54.63	21 10.3
38	5.6	7.0	. .	. .	59.0	16.0	. .	. .	4 58.77	67.39	1.56	IV.	3	26.213	33 57.7	32.8	3.2	6 7.72	22 33.7
39	7	. .	. .	. .	. .	9.0	25.5	. .	5 51.49	67.39	1.58	V.	3	29.230	30 48.4	32.6	2.8	7 0.46	19 23.8
40	7	. .	. .	. .	11.5	29.0	46.0	. .	7 11.65	67.39	1.54	IV.	3	21.500	38 53.3	32.3	3.7	8 20.58	27 29.3
41	9	41.0	58.0	15.5	. .	. .	. .	. .	9 32.53	67.39	1.54	III.	3	22.150	38 12.4	31.8	3.6	10 41.46	26 47.8
42	7	. .	. .	. .	3.0	20.0	. .	. .	10 2.91	67.39	1.55	IV.	3	25.440	34 46.2	31.6	3.3	11 11.85	23 21.1
43	9	. .	. .	. .	58.5	15.5	. .	. .	10 58.42	67.39	1.56	V.	3	28.095	31 59.5	31.4	3.0	12 7.37	20 33.9
44	7	. .	. .	. .	57.0	14.0	. .	48.5	10 56.94	67.39	1.58	VII.	3	31.810	28 5.9	31.4	2.6	12 5.91	16 39.9
45	7	. .	. .	. .	. .	. .	. .	47.0	11 55.58	67.39	1.64	VII.	4	44.320	14 58.4	31.3	1.2	13 4.61	3 30.9
46	7	32.0	49.0	6.0	23.0	. .	. .	. .	16 23.23	67.39	1.59	IV.	3	36.575	23 7.5	30.1	2.0	17 32.21	11 39.6
47	7	29.0	46.0	3.0	. .	. .	. .	. .	18 20.41	67.39	1.47	III.	1	13.457	47 16.5	29.7	4.6	19 29.27	35 50.8
48	5	25.0	42.5	59.5	16.5	. .	. .	. .	21 16.59	67.39	1.60	IV.	4	39.140	20 25.0	28.9	1.7	22 25.58	8 55.6
49	7	25.0	42.0	59.0	. .	. .	. .	. .	24 16.43	67.39	1.45	IV.	1	11.517	49 18.0	28.2	4.8	25 25.27	37 51.0
50	8	. .	54.0	11.0	28.0	. .	. .	. .	33 28.17	67.39	1.54	IV.	3	34.470	25 19.7	25.9	2.2	34 37.10	13 47.8
51	9	. .	. .	. .	. .	36.5	. .	10.5	34 19.09	67.39	1.45	VII.	2	18.180	42 22.5	25.8	4.1	35 27.93	30 52.4
52	8	. .	. .	. .	. .	14.0	31.0	48.5	35 56.88	67.39	1.56	VII.	4	39.900	19 35.8	25.3	1.6	37 5.83	8 2.7
53	9	. .	. .	. .	. .	. .	39.0	. .	37 4.69	67.39	1.52	VI.	3	31.305	28 38.1	25.1	2.6	38 13.60	17 5.8
54	7	58.0	14.5	32.0	49.0	. .	. .	. .	39 49.12	67.39	1.51	IV.	3	31.965	27 56.7	24.4	2.5	40 58.02	16 23.6
55	9	. .	. .	. .	27.0	50.0	. .	. .	42 29.92	67.38	1.50	V.	3	30.930	29 1.6	23.8	2.6	43 38.80	17 28.0
56	8	. .	. .	39.0	56.0	. .	. .	. .	43 56.10	67.38	1.53	IV.	3	36.340	23 22.3	23.3	2.1	45 5.01	11 47.7
57	8	7.0	24.0	41.0	. .	. .	. .	. .	47 58.26	67.38	1.56	III.	4	43.595	15 45.4	22.3	1.2	49 7.20	4 8.9
58	7	37.0	54.0	11.0	. .	. .	. .	. .	17 50 28.29	+67.38	+1.51	IV.	3	35.643	−24 6.0	−21.7	− 2.1	17 51 37.18	−26 12 29.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 31	July 9, 19 15	65 9 61.7	56.0	69.3	58.7	54.4	44.0	57.35	. .	. .	. .	. .	. .	77.0

ZONE 31. JULY 9. P. $D_0 = -25° 48' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
59	6	3.0	20.5	37.5	54.5	. .	. .	. .	17 52 54.63	+67.38	+1.48	IV.	3	29.560	−30 27.7	−21.1	−2.8	17 54 3.49	−26 18 51.6
60	9	. .	. .	. .	. .	. .	58.0	. .	53 40.86	67.38	1.55	VI.	4	45.860	13 22.1	21.0	1.0	54 49.79	1 44.1
61	9	. .	16.0	33.0	. .	. .	. .	. .	55 50.25	67.38	1.48	III.	3	31.290	28 39.2	20.3	2.6	56 59.11	17 2.1
62	8	. .	. .	. .	. .	13.0	31.0	. .	55 56.27	67.38	1.50	V.	3	35.920	23 48.4	20.3	2.1	57 5.15	12 10.8
63	9	. .	. .	. .	. .	. .	4.0	. .	56 29.75	67.38	1.53	VI.	3	41.410	18 3.9	20.2	1.5	57 38.66	6 25.6
64	7	56.0	13.0	30.0	. .	. .	. .	. .	17 58 47.28	67.38	1.52	III.	4	40.697	18 47.3	19.6	1.6	17 59 56.18	7 8.5
65	8	14.0	31.0	48.5	5.5	. .	. .	. .	18 0 5.44	67.37	1.53	IV.	4	44.450	14 51.7	19.3	1.1	18 1 14.32	3 12.1
66	8	. .	1.0	18.0	35.0	. .	. .	. .	1 35.19	67.37	1.43	IV.	3	23.330	36 58.6	18.9	3.5	2 43.99	25 21.0
67	9	8.0	25.0	42.0	. .	. .	. .	. .	3 59.29	67.37	1.47	III.	3	34.115	25 41.8	18.3	2.3	5 8.13	14 2.4
68	8	. .	. .	24.7	41.5	. .	. .	. .	4 41.71	67.37	1.44	IV.	3	27.460	32 39.5	18.1	3.0	5 50.52	21 0.6
69	8	. .	. .	. .	. .	27.5	44.5	. .	5 10.23	67.37	1.43	VI.	3	26.490	33 40.2	18.0	3.1	6 19.03	26 22 1.3
70	8	. .	. .	57.0	14.5	. .	. .	. .	8 14.29	67.37	1.56	IV.	4	53.300	5 36.1	17.2	0.2	9 23.22	25 53 53.5
71	7	. .	. .	. .	. .	13.5	30.5	. .	8 56.23	67.37	1.42	V.	3	25.905	34 16.8	17.1	3.2	10 5.02	26 22 37.1
72	6	. .	10.0	27.0	44.3	. .	. .	. .	10 44.27	67.37	1.47	IV.	4	37.133	20 25.4	16.6	2.0	11 53.11	8 44.0
73	7	. .	. .	35.0	51.5	9.0	. .	. .	11 51.83	67.36	1.39	V.	2	19.970	40 30.9	16.3	3.9	13 0.58	28 51.1
74	7	. .	. .	48.0	5.0	. .	. .	. .	13 5.36	67.36	1.46	IV.	3	33.820	26 0.3	16.0	2.3	14 14.18	14 18.6
75	7	. .	. .	. .	. .	58.0	15.0	. .	13 40.68	67.36	1.37	V.	2	17.785	42 47.9	15.9	4.1	14 49.41	31 7.9
76	8	. .	. .	. .	. .	. .	45.0	2.0	14 10.51	67.36	1.36	VII.	2	15.080	45 36.8	15.7	4.4	15 19.23	33 56.9
77	4	21.0	39.0	56.5	. .	. .	. .	. .	17 13.30	67.36	1.31	III.	1	6.370	54 40.3	15.0	5.4	18 21.97	43 0.7
78	4	. .	53.3	10.5	27.7	. .	. .	. .	18 27.73	67.36	1.32	IV.	1	9.090	51 49.9	14.7	5.1	19 36.41	40 9.7
79	7	53.3	10.5	28.0	. .	. .	. .	. .	21 45.03	67.36	1.34	III.	2	13.610	47 9.9	13.9	4.6	22 53.73	35 28.4
80	9	. .	. .	. .	37.0	. .	. .	. .	22 37.03	67.35	1.46	IV.	3	38.880	20 42.7	13.6	1.8	23 45.84	8 58.1
81	8	29.0	46.0	3.5	20.5	. .	. .	. .	26 20.52	67.35	1.38	IV.	3	24.270	35 59.6	12.7	3.4	27 29.25	24 15.7
82	9	23.5	. .	58.0	15.0	. .	. .	. .	33 15.07	67.34	1.38	IV.	3	27.760	32 20.5	11.0	3.0	34 23.79	26 20 34.5
83	8	. .	. .	. .	18.5	36.0	53.0	. .	34 18.71	67.34	1.49	IV.	4	50.945	8 3.7	10.7	0.4	35 27.54	25 56 14.8
84	9	. .	. .	23.0	. .	57.5	. .	. .	38 40.21	67.34	1.31	VI.	2	15.120	45 34.7	9.7	4.4	39 48.86	26 33 48.8
85	8	. .	. .	. .	30.0	. .	4.5	. .	42 30.08	67.33	1.29	VI.	2	14.033	46 42.8	8.7	4.6	43 38.70	34 56.1
86	2.3	57.0	. .	32.0	49.0	6.0	23.0	40.2	44 48.80	67.33	1.31	IV.	2	20.074	40 24.6	8.1	3.9	45 57.44	28 36.6
87	9	. .	. .	21.0	38.0	. .	. .	. .	48 38.11	67.32	1.34	IV.	3	25.045	35 10.8	7.2	3.3	49 46.77	23 21.3
88	8	. .	16.0	32.5	. .	. .	. .	. .	49 50.02	67.32	1.33	III.	3	25.400	34 48.7	6.9	3.3	50 58.67	22 58.9
89	8	25.0	42.0	59.0	16.0	. .	. .	. .	51 16.23	67.32	1.38	IV.	3	35.300	24 27.6	6.5	2.2	52 24.93	26 12 36.3
90	9	. .	. .	. .	. .	17.0	. .	. .	51 59.88	67.32	1.47	V.	4	53.210	5 41.4	6.4	0.1	53 8.67	25 53 47.9
91	7	54.5	. .	29.0	46.0	. .	. .	. .	54 46.07	67.31	1.32	IV.	3	26.887	33 15.3	5.7	3.1	55 54.70	26 21 24.1
92	6	. .	57.0	14.0	31.0	. .	. .	. .	18 57 31.15	67.31	1.44	IV.	4	51.343	7 39.0	5.0	0.4	18 58 39.90	25 55 44.4
93	9	. .	59.0	. .	. .	. .	. .	. .	19 0 33.31	67.31	1.37	II.	4	38.790	20 47.1	4.3	1.8	19 1 41.99	26 8 53.2
94	6	59.0	16.0	33.0	50.0	. .	. .	. .	2 50.22	67.30	1.37	IV.	3	38.340	21 16.8	3.8	1.8	3 58.89	26 9 22.4
95	7	58.0	14.7	. .	49.0	. .	. .	. .	5 49.10	67.30	1.43	IV.	4	51.740	7 13.8	3.0	0.3	6 57.83	25 55 17.1
96	9	27.0	. .	1.5	. .	. .	. .	. .	8 18.57	67.29	1.30	III.	3	27.770	32 19.8	2.4	3.0	9 27.16	26 20 25.2
97	9	. .	. .	. .	38.0	. .	12.0	. .	8 37.87	67.29	1.31	VI.	3	29.673	30 20.3	2.3	2.8	9 46.47	18 25.4
98	8	29.5	46.5	4.0	21.0	. .	. .	. .	19 11 21.03	+67.29	+1.27	IV.	2	22.082	−38 18.7	−1.7	−3.6	19 12 29.59	−26 26 24.0

ZONE 32. JULY 10. C. $D_0 = -29° 33' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	36.7	. .	8.0	. .	16 20 36.65	+67.60	+1.16	IV.	4	53.092	−5 49.0	−14.8	−0.3	16 21 45.41	−29 39 54.1
2	9	. .	. .	. .	51.5	. .	. .	. .	24 51.55	67.61	1.19	IV.	3	36.751	22 56.3	13.9	2.7	26 0.35	29 57 2.9
3	7	. .	. .	24.0	41.5	59.5	. .	. .	28 41.67	67.61	1.23	IV.	3	24.661	35 35.0	13.1	4.4	29 50.51	30 9 42.5
4	7	. .	. .	. .	. .	. .	14.7	32.5	28 39.34	67.61	1.20	VI.	4	55.642	3 9.0	13.1	0.0	29 48.15	29 37 12.1
5	7.8	. .	. .	7.5	. .	53.1	. .	. .	16 31 25.27	+67.62	+1.25	IV.	3	20.486	−39 56.9	−12.5	−5.0	16 32 34.14	−30 14 4.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 10,	17	+ 59.557	0.000	+ 0.213	+ 0.298	+ 0.330	0 0 2.87	30.002

REMARKS.

(31) 60. Transit over T. V assumed as recorded over T. VI.

(31) 72. Micrometer reading assumed as 39r.133; not 37r.133.

July 10, 16h 31m. Bright moon-light.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 32	July 10,	16 18	68 54 62.2	58.1	71.1	59.6	56.4	48.2	59.27	30.076	85.5	82.9	85.1	83.2	80.5
		16 31	. .	. .	. .	. .	. .	. .	. .	. .	. .	83.3			
		16 50	62.1	57.9	71.9	59.5	56.5	48.1	59.33	30.084	85.0	82.3	85.0	83.0	

ZONE 32. JULY 10. C. $D_0 = -29° 33' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
6	9	. .	44.9	3.0	20.0	38.6	. .	. .	16 33 20.52	+67.62	+1.24	IV.	3	35.544	−24 12.2	−12.1	− 2.8	16 34 29.38	−29 58 17.1
7	9	. .	. .	. .	8.0	26.8	. .	. .	37 8.52	67.62	1.23	IV.	4	53.171	5 44.1	11.3	0.4	38 17.37	29 39 45.8
8	9	. .	. .	. .	. .	. .	22.5	41.0	37 47.30	67.63	1.26	VI.	2	28.606	31 29.1	11.1	3.8	38 56.19	30 5 34.0
9	8	. .	5.5	23.2	41.0	58.0	. .	. .	40 40.80	67.63	1.26	IV.	3	44.352	14 59.3	10.5	2.1	41 49.69	29 49 1.9
10	8	. .	50.0	8.0	25.5	. .	. .	. .	42 26.65	67.63	1.29	IV.	3	23.984	36 17.4	10.1	4.5	43 35.57	30 10 22.0
11	9	. .	. .	. .	. .	19.5	. .	. .	43 0.67	67.63	1.29	V.	3	25.219	35 0.0	10.0	4.3	44 9.59	9 4.3
12	6.7	. .	. .	. .	. .	11.0	28.5	46.5	43 53.00	67.63	1.30	V.	2	14.645	46 4.8	9.8	5.8	45 1.93	20 10.4
13	8	. .	. .	37.6	55.0	13.8	. .	. .	45 55.46	67.63	1.30	IV.	2	14.689	46 2.2	9.4	5.8	47 4.39	30 20 7.4
14	9	. .	. .	7.8	25.5	. .	. .	. .	46 25.51	67.63	1.30	IV.	3	35.249	24 30.8	9.3	2.9	47 34.44	29 58 33.0
15	9	. .	. .	37.5	. .	12.0	30.0	. .	47 54.67	67.63	1.30	IV.	3	40.659	18 51.1	9.0	2.1	49 3.60	29 52 52.2
16	9	. .	. .	23.7	. .	. .	. .	. .	49 41.48	67.63	1.29	IV.	3	33.429	26 25.0	8.5	3.1	50 50.40	30 0 26.6
17	9	. .	. .	. .	. .	21.0	. .	. .	16 50 3.14	+67.63	+1.34	V.	2	17.858	−42 43.3	− 8.5	− 5.4	16 51 12.11	−30 16 47.2

ZONE 33. JULY 10. C. $D_0 = -34° 34' 10''$.

1	8.9	. .	33.0	51.4	10.0	29.0	47.5	. .	17 3 10.19	+68.07	+1.66	IV.	3	37.710	−21 56.2	−28.2	− 3.9	17 4 19.92	−34 56 38.3
2	9	. .	. .	20.7	. .	58.5	. .	. .	4 39.59	68.07	1.63	IV.	4	48.100	11 2.4	27.9	1.6	5 49.29	34 45 41.9
3	8	. .	. .	. .	11.0	30.0	. .	. .	6 11.04	68.07	1.70	IV.	2	12.970	47 49.8	27.5	9.6	7 20.81	35 22 36.9
4	8	. .	. .	. .	. .	36.0	. .	. .	6 17.06	68.07	1.70	V.	2	13.669	47 5.9	27.5	9.4	7 26.83	21 52.8
5	8	. .	. .	. .	. .	. .	. .	33.1	6 36.68	68.07	1.67	VII.	3	31.421	28 30.3	27.5	5.3	7 46.42	35 3 13.1
6	6	. .	. .	. .	. .	. .	12.0	31.0	7 34.64	68.08	1.64	VI.	4	44.995	14 16.4	27.3	2.3	8 44.36	34 48 56.0
7	9	. .	0.0	19.0	37.6	56.2	. .	. .	10 37.61	68.08	1.67	IV.	3	23.579	36 42.9	26.6	7.1	11 47.36	35 11 26.6
8	9	. .	. .	5.2	24.0	. .	. .	. .	11 24.04	68.08	1.68	IV.	3	21.589	38 47.7	26.4	7.6	12 33.80	35 13 31.7
9	7	. .	23.8	42.8	1.5	. .	39.0	. .	14 1.50	68.08	1.60	IV.	4	54.891	3 56.0	25.9	0.1	15 11.18	34 38 32.0
10	9	. .	. .	21.0	. .	58.5	. .	. .	23 39.75	68.09	1.60	IV.	4	45.889	13 21.1	23.8	2.1	24 49.44	34 47 57.0
11	9	. .	42.0	1.5	20.0	. .	57.0	. .	26 19.85	68.09	1.65	IV.	3	21.074	39 19.9	23.2	7.7	27 29.59	35 14 0.8
12	9	. .	. .	38.0	. .	14.0	32.0	. .	29 55.45	68.09	1.62	IV.	3	25.242	34 58.6	22.3	6.8	31 5.16	9 37.7
13	8.9	. .	28.5	47.2	. .	. .	43.2	. .	30 5.91	68.09	1.61	IV.	4	31.060	28 52.0	22.3	5.4	31 15.61	35 3 29.7
14	9	. .	. .	. .	. .	. .	11.7	. .	30 34.18	68.09	1.60	VI.	4	37.801	21 48.0	22.2	3.9	31 43.87	34 56 24.1
15	7	. .	. .	. .	. .	33.2	52.0	. .	32 14.33	68.09	1.63	V.	3	21.822	38 32.9	21.8	7.5	33 24.05	35 13 12.2
16	8	. .	. .	. .	. .	8.5	27.0	. .	33 49.38	68.09	1.64	V.	3	8.170	52 48.4	21.5	10.7	34 59.11	35 27 30.6
17	6.7	. .	. .	. .	. .	36.0	56.0	. .	35 17.89	68.09	1.57	V.	4	44.759	14 31.7	21.1	2.4	36 27.55	34 49 5.2
18	7.8	. .	. .	. .	30.2	49.0	8.0	. .	36 30.25	68.09	1.61	IV.	3	25.242	34 58.6	20.8	6.8	37 39.95	35 9 36.2
19	8	. .	. .	. .	36.2	. .	. .	. .	37 36.25	68.09	1.59	IV.	3	34.481	25 19.0	20.6	4.6	38 45.93	34 59 54.2
20	8	. .	. .	. .	57.0	. .	34.5	. .	38 56.98	68.09	1.59	IV.	3	28.786	31 16.1	20.3	5.9	40 6.66	35 5 52.3
21	8	. .	. .	. .	. .	10.0	29.0	. .	39 51.30	68.09	1.58	V.	3	33.249	26 36.2	20.1	4.9	41 0.97	35 1 11.2
22	7	. .	. .	26.5	. .	4.0	. .	. .	41 45.25	68.09	1.58	IV.	3	35.782	23 57.1	19.6	4.4	42 54.92	34 58 31.1
23	8.9	. .	. .	54.3	. .	31.5	. .	. .	42 12.90	68.09	1.57	IV.	3	35.782	23 57.1	19.5	4.4	43 22.56	58 31.0
24	6.7	. .	. .	. .	. .	32.0	51.0	. .	42 13.37	68.09	1.55	V.	3	42.789	16 37.2	19.5	2.8	43 23.01	51 9.5
25	8	. .	. .	. .	. .	. .	50.0	. .	43 12.56	68.09	1.55	VI.	3	43.524	15 50.9	19 3	2.6	44 22.20	34 50 22.8
26	9	. .	. .	. .	. .	8.0	. .	. .	44 49.18	68.09	1.57	.	.	33. .	26 23.	18.8	5.	45 58.84	35 0 (57.)
27	8	. .	. .	. .	. .	15.5	34.5	. .	44 56.82	68.09	1.57	V.	3	33.410	26 26.1	18.9	4.9	46 6.48	0 59.9
28	9	. .	. .	. .	59.5	. .	37.0	. .	49 59.42	68.09	1.60	IV.	2	16.319	44 20.1	17.7	8.8	51 9.11	35 18 56.6
29	9	. .	. .	58.7	. .	. .	36.0	. .	52 17.36	68.09	1.53	IV.	4	43.411	15 56.9	17.1	2.7	53 26.98	34 50 26.7
30	9	. .	. .	. .	. .	3.0	21.0	. .	52 2.60	68.09	1.53	V.	4	44.702	14 35.3	17.0	2.4	54 12.22	34 49 4.7
31	9	. .	36.5	55.0	14.2	33.0	. .	. .	56 14.03	68.09	1.54	IV.	3	34.441	25 21.5	16.2	4.7	57 23.66	35 59 52.4
32	9	. .	. .	. .	. .	2.0	. .	. .	56 43.17	68.09	1.55	IV.	3	32.431	27 27.6	16.1	5.1	57 52.81	35 1 58.8
33	9	. .	. .	. .	. .	. .	53.0	. .	17 57 15.56	+68.09	+1.53	VI.	4	43.428	−15 54.9	−15.9	− 2.7	17 58 25.18	−34 50 23.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s,	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846, h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 33	July 10, 17 3	73 54 60.6	58.0	71.	59.0	56.2	45.1	58.32	30.084	85.0	82.3	85.0	83.0	
	17 30	. .	. .	. .	. .	. .	. .	. .	. .	. .	80.6			
	18.15	. .	. .	. .	. .	. .	. .	. .	30.074	83.0	80.0			
	18.30	59.8	58.0	70.2	59.2	55.2	44.9	57.88	. .	. .	. .	81.8	81.5	
	18.50	. .	. .	. .	. .	. .	. .	. .	30.080	82.2	80.3			

REMARKS.

(33) 29. Transit over T. V assumed as recorded over T. VI.

(33) 30. Transits over T.'s IV and V assumed as recorded over T.'s V and VI, and minutes as 53 instead of 54.

ZONE 33. JULY 10. C. $D_o = -34°\ 34'\ 10''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
34	7	..	..	..	41.5	59.0	..	..	17 58 40.87	+68.09	+1.52	IV.	4	47.659	−11 30.0	−15.6	− 1.7	17 59 50.48	−34 45 57.3
35	7	..	52.5	10.5	29.8	48.0	7.5	..	18 0 29.67	68.09	1.55	IV.	3	31.440	28 29.8	15.1	5.4	18 1 39.31	35 3 0.3
36	7	..	..	38.4	57.0	15.7	..	..	2 57.01	68.09	1.50	IV.	4	55.430	3 22.3	14.6	0.0	4 6.60	34 37 46.9
37	8	..	..	..	41.0	59.5	19.5	..	3 41.19	68.09	1.55	IV.	3	27.619	32 29.5	14.4	6.2	4 50.83	35 7 0.1
38	8	..	..	..	16.0	34.4	53.5	..	4 15.84	68.09	1.54	IV.	3	29.950	30 3.1	14.2	5.7	5 25.47	4 33.0
39	8	..	..	..	..	20.0	..	..	5 1.12	68.09	1.56	V.	3	18.149	42 23.3	14.1	8.4	6 10.77	35 16 55.8
40	7.8	..	43.5	2.5	21.1	40.0	..	..	7 21.16	68.08	1.50	IV.	4	49.400	9 40.9	13.5	1.3	8 30.74	34 44 5.7
41	8.9	..	31.5	51.0	9.0	..	46.0	..	8 9.10	68.08	1.50	IV.	4	46.031	13 12.2	13.3	2.1	9 18.68	47 36.7
42	8.9	..	..	..	..	18.0	37.0	..	8 59.39	68.08	1.50	V.	3	43.954	15 24.0	13.1	2.5	10 8.37	34 49 49.6
43	9	..	..	21.0	39.5	..	17.3	..	10 39.69	68.07	1.53	IV.	3	28.037	32 3.2	12.7	6.1	11 49.29	35 6 32.0
44	8.9	..	17.7	36.0	54.8	13.8	32.5	..	12 54.37	68.07	1.52	.	.	30. .	29 59.	12.1	6.	14 3.96	4 (27.)
45	9	..	..	..	36.5	..	..	..	15 36.55	68.07	1.55	IV.	2	13.256	47 32.1	11.5	9.5	16 46.17	35 22 3.1
46	9	..	..	55.3	..	33.0	51.7	..	20 14.19	68.06	1.48	IV.	4	43.066	16 18.5	10.4	2.7	21 23.73	34 50 41.6
47	7	..	40.4	59.1	18.0	36.5	55.7	..	23 17.96	68.06	1.48	IV.	3	38.556	21 3.2	9.6	3.8	24 27.50	34 55 26.6
48	8	..	..	23.5	42.0	1.0	19.5	..	24 42.09	68.06	1.49	IV.	3	33.238	26 37.0	9.3	4.9	25 51.64	35 1 1.2
49	8	..	41.5	0.0	18.8	38.0	56.2	..	26 18.91	68.06	1.49	IV.	3	36.294	23 25.2	8.9	4.2	27 28.46	34 57 48.3
50	8	..	..	..	..	..	..	32.0	26 35.81	68.06	1.45	VII.	4	53.370	5 30.1	8.7	0.5	27 45.32	34 39 49.3
51	8	..	..	49.0	8.0	27.0	46.0	..	29 8.07	68.06	1.50	IV.	2	17.801	42 47.0	8.2	8.5	30 17.63	35 17 13.7
52	9	..	..	50.8	9.0	28.0	47.0	..	29 9.28	68.06	1.50	IV.	2	20.869	39 34.7	8.2	7.8	30 18.84	14 0.7
53	8	..	42.7	1.5	20.8	39.2	58.0	..	31 20.44	68.05	1.50	IV.	2	17.574	43 1.4	7.7	8.5	32 29.99	35 17 27.6
54	7	..	31.5	50.5	9.5	..	46.2	..	38 9.15	68.05	1.44	IV.	3	39.576	19 59.1	6.1	3.5	39 18.64	34 54 18.7
55	9	..	..	..	..	0.0	18.0	..	38 40.93	68.05	1.42	V.	4	51.648	7 19.3	5.9	0.8	39 50.40	34 41 36.0
56	9	..	..	..	21.0	40.2	..	..	40 21.19	68.05	1.47	IV.	3	27.120	33 0.7	5.5	6.3	41 30.71	35 7 22.5
57	9	..	..	..	40.0	58.0	..	..	41 39.58	68.05	1.48	IV.	3	21.764	38 36.6	5.2	7.5	42 49.11	12 59.3
58	9	..	..	33.0	52.0	11.0	..	..	43 51.99	68.04	1.48	IV.	2	16.831	43 47.8	4.7	8.7	45 11.51	18 11.2
59	9	..	43.2	2.0	20.7	40.0	58.4	..	47 20.87	68.04	1.44	IV.	3	32.515	27 22.3	3.9	5.1	48 30.35	35 1 41.3
60	9	..	..	20.7	39.2	58.0	17.0	..	48 39.39	68.03	1.40	IV.	4	48.096	15 49.0	3.5	1.6	49 48.82	34 40 4.4
61	9	..	..	3.7	..	..	0.0	..	50 22.52	68.03	1.39	IV.	4	50.823	8 11.4	3.1	1.0	51 31.94	42 25.5
62	8	..	..	..	27.2	..	4.7	..	18 51 27.23	+68.03	+1.41	IV.	3	43.289	−16 6.1	− 2.9	− 2.7	18 52 36.67	−34 50 21.7

ZONE 34. JULY 11. P. $D_o = -39°\ 35'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	..	..	14.0	34.0	..	..	..	16 8 34.11	+68.49	+2.06	IV.	2	15.720	−44 57.6	−29.2	−17.1	16 9 44.66	−40 21 13.9
2	8	12.0	32.0	52.0	12.0	..	..	..	11 12.07	68.50	1.39	IV.	4	44.590	14 42.8	27.7	4.6	12 21.96	39 50 55.1
3	8	14.0	34.0	54.0	14.5	..	..	..	20 14.19	68.53	1.48	IV.	4	41.980	17 26.6	25.9	5.7	21 24.20	39 53 38.2
4	8	..	..	47.5	..	28.0	..	..	22 7.69	68.53	2.23	V.	1	10.493	50 22.0	25.5	19.5	23 18.45	40 26 47.0
5	7	1.0	21.0	41.0	..	..	..	..	25 1.16	68.54	1.63	III.	3	36.650	23 2.6	25.0	8.0	26 11.33	39 59 15.6
6	8	..	41.0	1.0	21.0	..	..	..	31 21.15	68.56	1.64	IV.	3	36.168	23 33.0	23.7	8.2	32 31.35	39 59 44.9
7	6	..	..	..	..	..	51.0	..	33 10.54	68.57	2.37	VI.	1	4.365	56 46.8	23.3	22.3	34 21.48	40 33 12.4
8	8	29.5	..	9.5	29.0	..	..	..	36 29.31	68.57	1.26	IV.	4	53.680	5 12.1	22.6	0.9	37 39.14	39 41 15.6
9	8	..	31.0	..	11.0	..	..	..	38 11.14	68.58	1.76	IV.	3	31.875	28 2.3	22.3	10.0	39 21.48	40 4 14.6
10	8	..	21.0	41.0	..	..	..	..	40 1.16	68.58	1.75	IV.	3	32.983	26 52.8	21.9	9.5	41 11.49	3 4.2
11	8	..	..	..	32.0	..	..	..	40 32.04	68.58	2.24	IV.	1	12.250	48 32.1	21.9	18.7	41 42.86	24 52.7
12	7	..	..	..	..	14.0	..	..	40 53.70	68.58	2.28	V.	1	9.520	51 22.9	21.8	19.9	42 4.56	27 44.6
13	8	..	..	..	39.0	..	..	..	42 39.06	68.59	1.94	IV.	3	24.570	35 40.7	21.4	13.2	43 49.59	11 55.3
14	7	..	..	..	22.0	..	..	..	43 22.05	68.59	2.05	IV.	3	20.260	40 11.1	21.3	15.1	44 32.69	16 27.5
15	7	..	0.0	20.5	..	..	..	..	44 40.58	68.59	2.25	IV.	2	12.350	48 28.8	21.0	18.7	45 51.42	24 48.5
16	8	..	..	0.0	21.0	..	..	..	16 45 20.60	+68.60	+2.05	IV.	3	20.615	−39 48.7	−20.9	−14.9	16 46 31.25	−40 16 4.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 11	17	+ 59.647	− 0.005	+ 0.213	+ 0.298	+ 0.330		

REMARKS.

(33) 60. Micrometer reading assumed as 53r.096 instead of 48r.096.

July 11. Many very small stars, which could not be observed.

INSTRUMENT READINGS.

	Date.	Circle A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 34	July 11, 16 0	78 54 65.7	59.8	73.7	59.8	57.6	49.8	61.07						
	16 8	. .	. .	. .	. .	. .	. .	. .	30.030	87.5	85.6	84.0	. .	84.5
	16 51	. .	. .	. .	. .	. .	. .		. .	. .	85.0			
	18 0	65.3	60.3	74.2	60.7	58.3	48.8	61.27	30.016	86.0	83.5			

ZONE 34. JULY 11. P. $D_0 = -39° 35' 40''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
17	8	. .	. .	. .	33.0	. .	. .	33.5	16 46 33.09	+68.60	+1.84	IV.	3	29.400	−30 37.8	−20.6	−11.1	16 47 43.53	−40 6 49.5
18	7	49.0	9.5	29.0	49.0	. .	. .	. .	51 49.19	68.61	1.53	IV.	4	43.590	15 45.6	19.5	5.0	52 59.33	39 51 50.1
19	8	7.5	. .	. .	. .	29.0	. .	. .	16 58 8.30	68.62	1.74	IV.	3	34.610	25 10.8	18.2	8.9	16 59 18.66	40 1 17.9
20	9	. .	5.0	. .	. .	. .	. .	. .	17 16 45.28	68.65	2.04	II.	3	24.070	36 11.5	14.3	13.4	17 17 55.97	12 19.2
21	7	42.0	. .	22.0	. .	. .	. .	. .	22 42.41	68.66	2.36	III.	1	11.810	48 59.4	13.1	18.9	23 53.43	40 25 11.4
22	9	. .	. .	. .	. .	. .	58.0	. .	23 17.89	68.66	1.73	VI.	3	38.000	21 37.6	12.9	7.4	24 28.28	39 57 37.9
23	8	. .	. .	. .	. .	. .	20.0	. .	25 39.73	68.66	2.08	VI.	3	23.210	37 5.7	12.4	13.8	26 50.47	40 13 11.9
24	8	. .	31.0	. .	11.5	. .	. .	. .	28 11.42	68.66	2.05	V.	3	25.100	35 7.4	11.9	13.0	29 22.13	11 12.3
25	8	. .	. .	8.0	28.0	. .	. .	. .	29 28.08	68.66	1.81	IV.	3	35.513	24 14.2	11.6	8.5	30 38.55	0 14.3
26	8	. .	. .	15.0	. .	55.0	. .	. .	30 34.96	68.66	2.21	V.	2	14.140	46 36.6	11.4	17.8	31 45.83	40 22 45.8
27	9	. .	. .	. .	. .	24.0	. .	. .	32 3.95	68.66	1.47	V.	4	51.250	7 44.4	11.1	1.9	33 14.08	39 43 37.4
28	7	9.0	29.5	49.5	. .	. .	. .	. .	35 9.71	68.67	2.16	IV.	2	17.220	43 23.6	10.4	16.5	36 20.54	40 19 30.5
29	4	. .	. .	. .	. .	. .	36.0	56.0	35 55.74	68.67	1.91	VI.	3	32.133	27 45.9	10.2	9.9	37 6.32	40 3 46.0
30	7	. .	. .	. .	. .	24.5	. .	4.0	37 4.13	68.67	1.61	VI.	4	44.840	14 26.0	10.0	4.5	38 14.41	39 50 20.5
31	7	. .	. .	. .	. .	52.0	12.0	. .	38 31.86	68.67	1.86	V.	3	33.653	26 10.8	9.7	9.2	39 42.39	40 2 9.7
32	8	1.0	21.0	41.0	. .	. .	. .	. .	42 1.08	68.67	1.62	III.	4	44.985	14 18.0	8.9	4.5	43 11.37	39 50 11.4
33	8	. .	26.0	46.0	. .	. .	. .	. .	45 6.29	68.67	2.23	III.	2	15.495	45 12.7	8.2	17.2	46 17.19	40 21 18.1
34	7	. .	. .	. .	14.5	35.0	. .	. .	45 14.67	68.67	2.22	IV.	2	19.930	40 33.6	8.2	15.2	46 25.56	16 37.0
35	8	30.0	. .	10.0	30.0	. .	. .	. .	49 30.25	68.67	2.27	IV.	2	17.395	43 12.7	7.3	16.4	50 41.19	19 16.4
36	9	. .	35.0	. .	. .	. .	. .	. .	55 15.23	68.67	1.98	II.	3	30.950	28 59.8	6.0	10.4	56 25.88	40 4 56.2
37	8	. .	23.0	43.0	3.0	. .	. .	. .	17 56 3.09	68.67	1.80	IV.	4	39.325	20 13.5	5.8	6.8	17 57 13.56	39 56 6.1
38	8	. .	23.0	43.0	3.0	. .	. .	. .	18 0 3.18	68.67	2.21	IV.	3	22.403	37 56.7	4.9	14.2	18 1 14.06	40 13 55.8
39	7	. .	11.0	31.0	. .	. .	. .	. .	1 51.09	68.67	1.53	III.	4	50.770	8 14.8	4.5	2.1	3 1.29	39 44 1.4
40	7	. .	. .	13.0	34.0	. .	. .	. .	2 33.58	68.67	1.87	IV.	3	36.625	23 4.3	4.4	8.0	3 44.12	39 58 56.7
41	8	46.5	6.5	27.0	. .	. .	. .	. .	18 8 47.03	+68.66	+2.35	III.	2	16.990	−43 38.1	− 3.0	−16.5	18 9 58.04	−40 19 37.6

ZONE 35. JULY 14. C. $D_0 = -35° 12' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	. .	5.0	23.5	42.5	1.7	. .	17 29 23.73	+67.47	+1.35	IV.	3	38.471	−21 8.5	−13.9	− 3.9	17 30 32.55	−35 33 26.3
2	7	. .	. .	46.0	4.6	23.5	42.7	. .	31 4.73	67.47	1.09	IV.	3	29.269	30 46.0	13.5	6.2	32 13.29	43 5.7
3	8	. .	. .	20.0	38.7	57.5	. .	. .	32 38.73	67.47	1.56	IV.	4	46.179	13 3.0	13.1	2.1	33 47.76	25 18.2
4	7	. .	. .	31.0	49.8	9.0	27.5	. .	33 49.89	67.47	1.50	IV.	4	44.127	15 11.9	12.9	2.5	34 58.86	27 27.3
5	8	. .	37.0	56.0	14.8	. .	. .	. .	36 14.89	67.47	1.23	IV.	3	33.862	25 57.6	12.3	5.1	37 23.59	38 15.0
6	7	. .	. .	. .	31.0	50.0	. .	. .	36 31.01	67.47	0.94	IV.	3	22.681	37 39.1	12.2	7.9	37 39.42	49 59.2
7	7	. .	. .	. .	17.5	36.0	. .	. .	38 17.30	67.47	1.72	IV.	4	51.910	7 3.1	11.9	0.7	39 26.49	19 15.7
8	7	. .	. .	35.5	54.3	. .	. .	. .	39 54.32	67.47	1.74	IV.	4	53.337	5 33.8	11.5	0.4	41 3.53	17 45.7
9	8	. .	. .	. .	39.5	. .	. .	. .	40 39.47	67.47	1.73	IV.	4	52.146	6 48.5	11.3	0.6	41 48.67	19 0.4
10	6.7	. .	. .	25.5	44.5	3.0	22.2	. .	41 44.36	67.47	1.33	IV.	3	37.228	22 26.5	11.1	4.2	42 53.16	34 41.8
11	9	. .	. .	. .	58.0	. .	35.7	. .	17 42 57.90	+67.47	+0.94	IV.	4	22.079	−38 15.4	−10.8	− 8.0	17 44 6.31	−35 50 34.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	ϵ	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 14,	17	+ 58.886	− 0.011	+ 0.213	+ 0.298	+ 0.330	0 0 3.02	30.005

INSTRUMENT READINGS.

	Date.		Circle A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 35	July 14,	17 29	74 32 28.1	29.6	43.0	33.2	22.6	13.0	28.25	30.044	75.0	69.0	73.0	74.8	80.3
		17 42	. . . .	. .	. .	. .	. .	. .	. .	. . .	. .	68.8			

REMARKS.

$18^h\ 8^m$, interrupted by clouds.

(35) 6. Perhaps identical with No. 14, Transit Z., same night.

ZONE 36. JULY 14. C. $D_0 = -33° 18' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8.9	. .	. .	46.1	4.4	22.7	41.4	. .	17 58 4.42	+67.46	+1.57	IV.	4	44.058	−15 16.1	−40.2	− 2.7	17 59 13.45	−33 34 39.0
2	7.8	. .	. .	18.7	37.0	56.0	. .	. .	58 37.24	67.46	1.43	IV.	3	23.448	36 51.2	40.1	6.9	17 59 46.13	56 18.2
3	6.7	. .	. .	33.0	51.0	. .	28.2	. .	17 58 51.25	67.46	1.47	IV.	3	30.462	29 31.1	40.1	5.4	18 0 0.18	33 48 56.6
4	8	. .	. .	. .	. .	19.7	38.1	. .	18 1 1.02	67.28	1.36	V.	2	14.519	46 12.8	39.6	8.8	2 9.66	34 5 41.2
5	9	. .	. .	. .	33.0	. .	. .	. .	2 33.01	67.28	1.60	IV.	4	47.308	11 52.2	39.3	2.0	3 41.89	33 31 13.5
6	9	. .	. .	. .	58.0	. .	. .	. .	3 58.00	67.27	1.55	IV.	3	40.909	18 35.3	38.9	3.3	5 6.82	37 57.5
7	8.9	. .	. .	. .	58.5	16.9	35.5	. .	4 58.46	67.27	1.48	IV.	3	31.506	28 25.6	38.7	5.2	6 7.21	33 47 49.5
8	7	. .	53.7	13.0	31.0	. .	17.7	. .	6 31.01	67.27	1.32	IV.	2	11.171	49 42.6	38.4	9.4	7 39.60	34 9 10.4
9	9	. .	58.0	. .	34.0	. .	23.0	. .	6 35.03	67.27	1.33	VI.	2	12.208	48 37.1	38.4	9.2	7 43.63	34 8 4.7
10	7	. .	17.2	35.5	54.0	12.6	. .	. .	9 54.08	67.27	1.63	IV.	4	54.699	4 8.9	37.6	0.5	11 2.98	33 23 27.0
11	7.8	. .	. .	. .	32.0	50.5	9.0	. .	10 32.04	67.26	1.54	IV.	3	43.311	16 4.7	37.5	2.8	11 40.84	33 35 25.0
12	6.7	. .	. .	32.0	50.1	9.0	27.6	. .	14 50.40	67.26	1.37	IV.	2	18.678	41 52.1	36.6	7.9	15 59.03	34 1 16.6
13	7	. .	53.0	11.5	30.0	48.0	7.0	. .	16 29.93	67.26	1.57	IV.	4	48.872	10 13.8	36.2	1.7	17 38.76	33 29 31.7
14	9	. .	. .	. .	30.0	48.0	. .	. .	17 48.46	67.25	1.54	IV.	4	44.121	15 12.2	36.0	2.7	18 57.25	34 30.9
15	9	. .	. .	22.0	41.0	. .	. .	. .	18 40.77	67.25	1.53	IV.	4	42.789	16 35.7	35.7	2.9	19 49.55	35 54.3
16	9	. .	. .	42.0	. .	. .	37.0	. .	19 0.29	67.25	1.53	VI.	4	43.485	15 51.4	35.7	2.8	20 9.07	35 9.9
17	9	. .	. .	. .	. .	. .	. .	. .	18 58 .	67.25	1.51	VII.	4	40.449	19 1.3	35.7	3.4	20 (6.)	38 20.4
18	9	. .	. .	51.9	10.0	. .	. .	. .	22 10.20	67.25	1.56	IV.	4	46.659	12 32.8	35.0	2.1	23 19.01	31 49.9
19	9	. .	. .	14.0	32.0	49.7	. .	. .	22 31.91	67.25	1.47	IV.	3	35.552	24 11.7	34.9	4.4	23 40.63	43 31.0
20	7.8	. .	53.0	11.5	29.5	48.0	. .	. .	27 29.76	67.24	1.51	IV.	3	42.659	16 45.5	33.8	3.0	28 38.51	33 36 2.3
21	9	. .	. .	. .	. .	. .	5.8	. .	27 28.63	67.24	1.29	VI.	2	12.977	47 48.8	33.8	9.1	28 37.16	34 7 11.7
22	7.8	. .	. .	14.6	33.0	51.4	. .	. .	29 33.00	67.23	1.36	IV.	3	20.958	39 27.1	33.3	7.4	30 41.59	33 58 47.8
23	9	. .	. .	. .	. .	. .	37.7	. .	30 0.61	67.23	1.36	VI.	3	18.781	41 43.3	33.2	7.9	31 9.20	34 1 4.4
24	8.9	. .	. .	18.0	36.0	54.6	. .	. .	31 36.15	67.23	1.44	IV.	3	32.996	26 52.0	32.9	4.9	32 44.82	33 46 9.8
25	8.9	. .	12.8	32.0	50.5	9.0	. .	. .	33 50.33	67.22	1.53	IV.	4	46.850	12 20.7	32.4	2.1	34 59.08	33 31 35.2
26	8.9	. .	51.0	10.0	28.0	47.0	5.7	. .	35 28.34	67.22	1.31	IV.	2	16.495	44 9.1	32.0	8.3	36 36.87	34 3 29.4
27	8	. .	35.0	54.0	12.5	31.1	49.6	. .	37 12.44	67.22	1.30	IV.	2	16.162	44 29.9	31.7	8.4	38 20.96	34 3 50.0
28	9	. .	. .	22.2	40.2	59.0	. .	. .	38 40.48	67.22	1.43	IV.	3	33.651	26 11.0	31.3	4.8	39 49.13	33 45 27.1
29	9	. .	. .	. .	9.0	. .	45.5	. .	39 8.78	67.21	1.43	IV.	3	33.516	26 19.5	31.2	4.8	40 17.42	45 35.5
30	9	. .	. .	. .	12.0	30.0	48.7	. .	39 11.74	67.21	1.45	IV.	3	37.671	21 58.6	31.2	4.0	40 20.40	41 13.8
31	8	. .	23.0	41.0	0.0	18.5	. .	. .	44 59.88	67.20	1.55	IV.	4	51.638	7 20.3	29.9	1.2	46 8.63	26 31.4
32	9	. .	44.0	. .	21.0	. .	58.0	. .	45 21.05	67.20	1.54	IV.	4	51.035	7 58.1	29.9	1.3	46 29.79	27 9.3
33	7.8	. .	. .	. .	58.0	17.0	. .	. .	45 58.26	67.20	1.52	IV.	4	47.374	11 48.1	29.7	2.0	47 6.98	33 30 59.8
34	9	. .	12.5	31.2	. .	. .	. .	. .	48 49.75	67.19	1.25	III.	2	11.821	49 1.7	29.1	9.3	49 58.19	34 8 20.1
35	7.8	. .	. .	. .	2.0	. .	39.0	. .	49 2.06	67.19	1.54	IV.	4	52.106	6 51.0	29.1	1.0	50 10.79	33 26 1.1
36	7.8	. .	. .	. .	39.3	58.1	16.7	. .	54 39.48	67.18	1.30	IV.	2	19.608	40 53.9	27.8	7.7	55 47.96	34 0 9.4
37	9	. .	. .	27.0	45.2	14.0	. .	. .	57 45.40	67.17	1.28	IV.	2	18.621	41 55.8	27.2	7.9	18 58 53.85	34 1 10.9
38	8.9	. .	5.0	23.5	42.5	. .	. .	. .	18 59 42.24	67.16	1.28	IV.	2	20.648	39 48.6	26.8	7.5	19 0 50.68	33 59 2.9
39	9	. .	. .	26.1	. .	3.1	. .	. .	19 1 44.56	67.16	1.24	IV.	1	14.431	46 15.5	26.3	8.8	2 52.96	34 5 30.6
40	8.9	. .	. .	27.1	. .	. .	. .	. .	1 45.66	67.16	1.25	III.	1	14.586	46 5.7	26.3	8.7	2 54.07	34 5 20.7
41	8	. .	. .	31.7	51.0	. .	. .	. .	4 50.65	67.15	1.36	IV.	3	32.049	27 51.5	25.6	5.1	5 59.16	33 47 2.2
42	9	. .	. .	. .	53.0	11.0	29.0	. .	4 52.49	67.15	1.34	IV.	3	29.636	30 22.9	25.6	5.6	6 0.98	49 34.1
43	9	. .	. .	. .	. .	. .	14.0	. .	5 37.10	67.15	1.45	VI.	4	44.955	14 18.9	25.5	2.5	6 45.70	33 26.9
44	7	. .	49.7	8.6	27.0	. .	. .	. .	7 26.91	67.14	1.51	IV.	4	53.122	5 47.2	25.1	0.8	8 35.56	24 53.1
45	7	. .	27.5	. .	4.5	. .	. .	. .	8 4.51	67.14	1.46	VII.	3	46.130	13 6.9	25.0	2.2	9 13.11	32 14.1
46	7.8	. .	. .	. .	11.5	. .	. .	. .	8 11.48	67.14	1.51	IV.	4	52.598	6 20.0	25.0	0.9	9 20.13	25 25.9
47	8	. .	. .	47.2	6.4	. .	43.1	. .	13 6.09	67.13	1.33	IV.	3	29.718	30 17.7	23.9	5.6	14 14.55	33 49 27.2
48	9	. .	. .	. .	48.7	7.2	. .	. .	19 48.66	67.11	1.23	IV.	2	16.211	44 26.8	22.5	8.4	20 57.00	34 3 37.7
49	9	. .	50.0	. .	27.5	46.1	. .	. .	19 21 27.53	+67.10	+1.21	IV.	2	15.765	−44 54.7	−22.1	− 8.5	19 22 35.84	−34 4 5.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 14,	17	+ 58.886	− 0.011	+ 0.213	+ 0.298	+ 0.330	0 0 3.02	30.005

REMARKS.

July 14. Night clear; stars not very steady.
(36) 14. Transits over threads III and IV assumed as recorded over IV and V, to agree with Transit Z., June 15.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 36	July 14,	17 50	72 39 62.9	64.4	76.0	66.0	59.9	47.1	62.72	. .	. .	. .	72.5	74.0	80.3
		17 58	. .	. .	. .	. .	. .	. .	. .	30.041	74.5	68.7			
		18 39	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.7			
		18 50	63.1	65.0	75.9	66.0	60.1	47.0	62.85	. .	. .	. .	71.0	74.0	
		18 59	. .	. .	. .	. .	. .	. .	. .	30.054	73.0	65.9			
		19 30	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.7			
		19 59	. .	. .	. .	. .	. .	. .	. .	30.070	72.2	64.3			
		20 0	62.8	66.0	76.3	66.6	61.0	46.4	63.18	. .	. .	. .	69.0	71.0	

ZONE 36. JULY 14. C. $D_\circ = -33^\circ\ 18'\ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	30.8	48.7	. .	25.7	. .	. .	19 23 7.40	+67.10	+1.46	IV.	4	50.238	− 8 48.3	−21.8	− 1.4	19 24 15.96	−33 27 51.5
51	9	. .	. .	. .	. .	. .	. .	43.4	24 48.03	67.09	1.48	IV.	4	52.282	6 40.0	21.4	1.0	25 56.60	33 25 42.4
52	9	. .	16.0	. .	54.0	12.6	. .	. .	26 53.73	67.08	1.16	IV.	2	10.212	50 42.6	21.0	9.7	28 1.97	34 9 53.3
53	9	. .	. .	. .	50.5	. .	. .	. .	30 50.56	67.07	1.30	IV.	3	30.604	29 22.2	20.1	5.4	31 58.93	33 48 27.7
54	8	. .	. .	12.1	30.3	49.0	7.5	. .	32 30.45	67.06	1.22	IV.	3	19.962	40 29.5	19.8	7.6	33 38.73	59 36.9
55	7	. .	42.2	. .	19.7	37.5	56.1	. .	44 19.29	67.02	1.44	IV.	4	51.996	6 57.8	17.3	1.1	45 27.75	25 56.2
56	9	. .	27.5	. .	. .	23.1	41.5	. .	48 4.52	67.01	1.26	IV.	3	30.364	29 37.3	16.5	5.5	49 12.79	48 39.3
57	9	. .	. .	. .	52.5	. .	. .	. .	48 52.56	67.01	1.22	IV.	3	25?.070	35 9.3	16.4	6.5	50 0.79?	33 54 12.2
58	6	. .	. .	. .	. .	50.0	8.3	27.0	49 31.24	67.00	1.15	V.	2	14.102	46 38.9	16.2	8.8	50 39.39	34 5 43.9
59	9	. .	. .	58.0	16.5	. .	. .	. .	54 16.55	66.98	1.17	IV.	2	18.888	41 38.9	15.2	7.8	55 24.70	34 0 41.9
60	7	. .	. .	. .	49.0	7.6	25.8	44.5	54 49.05	66.98	1.43	IV.	4	52.710	6 12.9	15.1	0.9	55 57.46	33 25 8.9
61	8	. .	. .	36.5	55.2	13.6	32.2	. .	56 55.14	66.97	1.27	IV.	3	33.320	26 31.9	14.7	4.8	58 3.38	45 31.4
62	8	. .	55.0	. .	32.0	50.5	. .	. .	58 32.01	66.97	1.25	IV.	3	31.101	28 51.0	14.3	5.3	19 59 40.23	47 50.6
63	8	. .	. .	29.7	48.0	6.8	. .	. .	19 59 48.16	66.96	1.17	IV.	2	20.611	39 51.0	14.1	7.5	20 0 56.29	58 52.6
64	9	. .	. .	3.1	21.3	38.5	. .	. .	20 5 20.98	66.94	1.27	IV.	3	36.165	23 33.2	13.0	4.3	6 29.19	33 42 30.5
65	9	. .	. .	17.7	36.0	54.6	13.5	. .	6 36.14	66.94	1.09	IV.	2	11.432	49 26.3	12.7	9.4	7 44.17	34 8 28.4
66	9	. .	. .	22.5	. .	0.5	. .	. .	9 41.49	66.92	1.39	IV.	4	52.362	6 35.0	12.1	1.0	10 49.80	33 25 28.1
67	8	. .	50.5	8.5	. .	46.0	4.0	. .	12 27.28	66.91	1.34	IV.	4	46.766	12 26.0	11.5	2.1	13 35.53	31 19.6
68	9	. .	. .	. .	. .	45.0	3.0	. .	12 26.24	66.91	1.26	V.	3	34.909	24 51.9	11.5	4.5	13 34.41	33 43 47.9
69	8.9	. .	40.7	59.0	17.6	36.3	54.2	. .	15 17.56	66.90	1.08	IV.	2	12.715	48 5.8	10.9	9.1	16 25.54	34 7 5.8
70	9	. .	. .	. .	26.0	. .	. .	. .	18 26.04	66.89	1.27	IV.	4	40.531	18 57.7	10.3	3.4	19 34.20	33 37 51.4
71	9	. .	. .	. .	. .	. .	. .	2.5	19 7.06	66.88	1.32	V.	4	46.873	12 19.0	10.1	2.1	20 15.26	31 11.2
72	9	. .	. .	29.8	. .	8.0	. .	. .	21 48.90	66.87	1.31	IV.	4	45.941	13 17.8	9.6	2.3	22 57.08	32 9.7
73	8	. .	42.3	0.9	19.0	37.5	. .	. .	27 19.21	66.84	1.13	IV.	3	21.721	38 39.3	8.5	7.2	28 27.18	33 57 35.0
74	7.8	. .	. .	. .	12.0	30.6	49.0	. .	28 11.93	66.84	1.02	IV.	2	8.122	52 53.4	8.4	10.1	29 19.79	34 11 51.9
75	6	. .	. .	28.0	46.5	5.0	23.0	. .	20 29 46.35	+66.83	+1.12	IV.	3	21.828	−38 32.6	− 8.0	− 7.2	20 30 54.30	−33 57 27.8

ZONE 37. JULY 15. P. $D_\circ = -29^\circ\ 33'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		r.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.8	. .	. .	. .	. .	20.0	. .	56.0	16 43 2.41	+66.58	+1.55	VI.	3	25.467	−34 44.3	−44.1	− 4.4	16 44 10.54	−30 92.8
2	8	. .	21.0	38.3	56.3	. .	. .	. .	45 56.37	66.58	1.46	IV.	2	14.945	45 46.1	43.4	6.0	47 4.41	30 20 5.5
3	9	. .	. .	9.0	26.3	. .	. .	. .	47 26.56	66.58	1.63	IV.	3	35.545	24 12.2	43.1	2.9	48 34.77	29 58 28.2
4	9	. .	. .	. .	. .	13.5	. .	49.0	47 55.71	66.58	1.69	IV.	4	40.917	18 33.3	43.0	2.1	49 3.98	52 48.4
5	Neb.	. .	. .	. .	. .	6.0	. .	. .	50 48.23	66.58	1.69	V.	4	40.920	18 33.1	42.3	2.1	51 56.50	52 47.5
6	8	. .	. .	. .	. .	35.0	. .	10.5	53 17.21	66.58	1.70	VII.	4	41.840	17 33.8	41.8	1.9	54 25.49	51 47.5
7	8	. .	. .	. .	. .	44.0	2.0	. .	54 26?.41	66.58	1.73	VI.	4	44.710	14 34.3	41.6	1.5	55 34.72?	48 47.4
8	7	. .	. .	. .	. .	48.0	6.0	. .	55 48.12	66.58	1.67	V.	4	37.570	22 3.2	41.3	2.6	56 56.37	56 17.1
9	7	43.0	1.0	18.0	. .	. .	. .	. .	57 36.15	66.58	1.72	III.	4	42.780	16 36.4	40.8	1.8	58 44.45	50 49.0
10	7	57.0	15.0	. .	. .	8.0	. .	. .	58 50.30	66.58	1.74	V.	4	46.530	12 40.6	40.6	1.3	59 58.62	29 46 52.5
11	6	. .	. .	. .	. .	. .	. .	58.3	16 58 4.89	66.58	1.54	VII.	3	22.670	37 39.2	40.7	4.8	16 59 13.01	30 11 54.7
12	9	17.7	36.0	. .	. .	. .	. .	. .	17 1 11.36	66.58	1.52	III.	2	19.993	40 29.6	40.0	5.3	17 1 19.46	14 44.9
13	9	. .	. .	. .	36.0	54.0	12.0	. .	1 36.18	66.58	1.50	VI.	2	16.875	43 44.6	39.9	5.7	2 44.26	18 0.2
14	9	53.0	11.5	29.0	. .	. .	. .	. .	4 46.71	66.58	1.59	III.	3	29.025	31 1.1	39.2	3.9	5 54.88	5 14.2
15	6	. .	. .	. .	8.5	26.5	. .	. .	5 8.62	66.58	1.62	IV.	3	32.225	27 40.5	39.1	3.4	6 16.82	1 53.0
16	7	. .	. .	53.0	11.0	. .	. .	. .	6 10.92	66.58	1.55	IV.	3	23.850	36 25.7	38.9	4.7	7 19.05	30 10 39.3
17	7	. .	. .	. .	. .	55.5	14.0	. .	6 38.10	66.58	1.63	V.	3	34.490	25 18.4	38.8	3.0	7 46.31	29 59 30.2
18	7	. .	. .	. .	. .	. .	17.0	24.5	7 41.46	66.58	1.78	VI.	4	50.940	8 3.2	38.5	0.6	8 49.82	42 12.3
19	7	. .	. .	. .	. .	29.0	48.0	. .	17 13 11.93	+66.58	+1.80	V.	4	52.847	− 6 4.0	−37.3	− 0.3	17 14 20.31	−29 40 11.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 15,	17	+ 58.483	− 0.010	+ 0.213	+ 0.298	+ 0.330		

REMARKS.

(36) 75. Differs 13s.6 from Transit Z., Sept. 19.

(37) 8. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

(37) 12. Minute assumed as 0 instead of 1.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 36	July 14, 20 29	. .	. .	. .	. .	. .	. .	. .	30.074	72.0	63.9			
Zone 37	July 15, 16 43	68 54 67.0	67.6	79.5	70.2	64.3	49.7	66.38	30.232	69.6	61.3			
	17 28	. .	. .	. .	. .	. .	. .	. .	30.230	68.4	60.3			
	18 45	. .	. .	. .	. .	. .	. .	. .	30.228	66.0	58.0			
	19 20	66.0	68.2	79.6	71.3	62.7	48.3	66.02	. .	. .	. .	. .	. .	63.0
	19 30	. .	. .	. .	. .	. .	. .	. .	30.230	65.0	57.2			

ZONE 37. JULY 15. P. $D_0 = -29° 33' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	7	. .	. .	. .	. .	. .	30.5	. .	17 13 37.33	+66.58	+1.78	VII.	4	49.847	− 9 11.1	−37.1	− 0.8	17 14 45.69	−29 43 19.0
21	4	46.0	3.3	21.0	39.0	. .	. .	. .	16 38.91	66.58	1.78	IV.	4	49.713	9 21.1	36.5	0.8	17 47.27	43 28.4
22	5	. .	. .	. .	. .	. .	. .	49.0	16 55.86	66.58	1.82	VII.	4	57.480	1 12.9	36.4	0.0	18 4.26	29 35 19.3
23	7	. .	. .	33.5	51.5	. .	. .	. .	20 51.42	66.58	1.59	IV.	3	26.863	33 16.8	35.5	4.2	21 59.59	30 7 26.5
24	7	. .	. .	. .	. .	. .	47.0	. .	21 11.40	66.57	1.51	VI.	2	17.875	42 41.9	35.4	5.6	22 19.48	16 52.9
25	9	. .	. .	. .	. .	. .	. .	24.0	21 30.52	66.57	1.48	VII.	1	14.370	46 18.5	35.3	6.1	22 38.57	20 29.9
26	9	. .	. .	. .	. .	. .	. .	8.0	22 14.57	66.57	1.52	VI.	2	19.057	41 27.8	35.2	5.4	23 22.66	15 38.4
27	8	. .	. .	. .	. .	. .	52.0	1.0	23 16.40	66.57	1.51	VI.	2	16.853	43 45.9	34.9	5.7	24 24.48	17 56.5
28	9	. .	. .	. .	. .	. .	2.5	. .	24 26.96	66.57	1.61	VI.	3	28.695	31 21.7	34.6	3.9	25 35.14	5 30.2
29	9	. .	28.0	45.5	. .	. .	. .	. .	28 3.42	66.57	1.64	III.	3	31.923	27 59.2	33.8	3.4	29 11.63	30 2 6.4
30	7	. .	. .	. .	43.0	0.5	. .	. .	28 42.87	66.57	1.72	IV.	4	41.547	17 53.8	33.7	2.0	29 51.16	29 51 59.5
31	9	. .	. .	. .	. .	. .	. .	30.0	29 36.61	66.57	1.59	VII.	3	26.415	33 44.5	33.4	4.3	30 44.77	30 7 52.2
32	10	. .	49.0	. .	. .	. .	. .	. .	32 24?.33	66.57	1.74	.	.	42 . .	18 . .	. .	. .	33 32.64?	29 51 . .
33	7	. .	51.0	. .	25.5	. .	. .	. .	32 26.02	66.57	1.74	IV.	4	41.970	17 27.2	32.8	1.9	33 34.33	29 51 31.9
34	8	. .	. .	. .	. .	. .	20.5	38.5	32 44.90	66.57	1.60	VII.	3	28.290	31 46.8	32.7	4.0	33 53.07	30 5 53.5
35	8	. .	. .	. .	33.0	51.0	. .	. .	34 33.12	66.57	1.76	IV.	4	46.587	12 37.4	32.3	1.2	35 41.45	29 46 40.9
36	10	27.5	. .	3.0	. .	. .	. .	. .	37 20.81	66.56	1.58	III.	3	25.225	34 59.5	31.6	4.5	38 28.95	30 9 5.6
37	8	. .	. .	. .	41.0	. .	16.5	. .	37 40.98	66.56	1.54	VI.	3	20.227	40 12.9	31.5	5.2	38 49.08	14 19.6
38	8	54.5	12.0	30.0	. .	. .	. .	. .	40 47.77	66.56	1.55	III.	2	20.307	40 10.1	30.8	5.2	41 55.88	14 16.1
39	7	. .	. .	25.0	44.0	. .	. .	. .	41 43.42	66.56	1.56	IV.	3	24.000	36 16.4	30.6	4.6	42 51.54	10 21.6
40	9	. .	. .	. .	. .	. .	. .	20.0	41 26.64	66.56	1.61	VII.	3	27.880	32 12.4	30.7	4.0	42 34.81	30 6 17.1
41	9	. .	. .	. .	57.0	. .	. .	. .	43 57.00	66.56	1.76	IV.	4	44.455	14 51.3	30.1	1.6	45 5.32	29 48 53.0
42	8	. .	. .	. .	. .	0.0	. .	. .	44 24.59	66.56	1.77	V.	4	46.760	12 26.1	29.9	1.2	45 32.92	46 27.2
43	7	. .	. .	. .	. .	. .	. .	37.5	44 44.19	66.56	1.67	VII.	3	34.580	25 12.1	29.9	3.0	45 52.42	59 15.0
44	9	. .	. .	. .	. .	. .	14.0	. .	45 38.57	66.56	1.75	VI.	4	43.960	15 21.4	29.7	1.6	46 46.88	49 22.7
45	9	. .	. .	. .	. .	. .	. .	52.5	45 59.20	66.56	1.72	VII.	4	40.010	19 28.8	29.6	2.2	47 7.48	29 53 30.6
46	7	. .	. .	. .	. .	33.0	51.0	. .	47 15.32	66.55	1.64	V.	3	31.580	28 21.0	29.3	3.5	48 23.51	30 2 24.8
47	5	. .	. .	. .	19.5	37.0	. .	. .	48 19.35	66.55	1.55	IV.	2	20.647	39 48.7	29.1	5.1	49 27.45	30 13 52.9
48	6	. .	. .	. .	. .	. .	19.0	36.5	49 43.41	66.55	1.76	VI.	4	44.790	14 29.3	28.7	1.5	50 51.72	29 48 29.5
49	7	59.0	16.5	34.5	. .	. .	. .	. .	52 52.15	66.55	1.74	III.	4	42.047	17 22.5	28.0	1.9	54 0.44	29 51 22.4
50	9	. .	. .	57.0	. .	. .	. .	. .	54 14.80	66.55	1.56	III.	2	20.905	39 32.4	27.7	5.1	55 22.91	30 13 35.2
51	2.3	. .	. .	2.5	20.5	38.5	. .	. .	55 2.75	66.55	1.47	N.	1	9.800	51 5.3	27.4	6.8	56 10.77	30 25 9.5
52	9	34.5	. .	10.0	. .	. .	. .	. .	57 27.67	66.54	1.80	III.	4	48.740	10 22.2	26.9	0.9	58 36.01	29 44 20.0
53	6	. .	. .	52.0	10.0	. .	. .	. .	17 58 9.92	66.54	1.67	IV.	3	33.425	26 25.3	26.7	3.2	17 59 18.13	30 0 25.2
54	7	26.5	44.5	. .	. .	. .	. .	. .	18 0 19.83	66.54	1.78	III.	4	46.793	12 24.4	26.2	1.2	18 1 28.15	29 46 21.8
55	7	40.0	. .	15.0	. .	50.3	. .	. .	0 32.78	66.54	1.84	IV.	4	53.170	5 44.2	26.2	0.3	1 41.16	39 40.7
56	8	. .	. .	. .	. .	. .	4.0	. .	1 28.54	66.54	1.73	VI.	3	40.353	19 10.2	26.0	2.2	2 36.81	53 8.4
57	7	27.7	45.5	3.3	. .	. .	. .	. .	4 21.32	66.53	1.75	III.	4	41.840	17 35.5	25.3	1.9	5 29.60	51 32.7
58	9	. .	. .	. .	5.0	23.0	. .	. .	6 5.12	66.53	1.73	IV.	4	39.347	20 12.1	24.9	2.3	7 13.38	54 9.3
59	9	. .	. .	. .	. .	. .	0.0	. .	7 24.57	66.53	1.79	VI.	4	47.420	11 44.4	24.5	1.1	8 32.89	45 40.0
60	9	. .	. .	. .	. .	16.5	. .	. .	8 58.76	66.53	1.84	V.	4	52.540	6 23.4	24.2	0.4	10 7.13	40 18.0
61	2.3	. .	. .	58.0	15.5	33.0	. .	. .	10 15.50	66.52	1.75	IV.	3	40.237	19 17.7	23.9	2.2	11 23.77	29 53 13.8
62	9	. .	. .	. .	. .	. .	. .	50.5	10 57.11	66.52	1.62	VII.	3	26.170	33 59.8	23.7	4.3	12 5.25	30 7 57.8
63	9	. .	. .	. .	. .	. .	37.0	. .	12 1.41	66.52	1.60	VI.	3	22.025	38 20.0	23.5	4.9	13 9.53	30 12 18.4
64	8	. .	. .	. .	46.0	4.0	. .	. .	13 46.12	66.52	1.77	IV.	4	42.340	17 4.2	23.0	1.9	14 54.41	29 50 59.1
65	8	. .	. .	. .	. .	2.5	. .	. .	14 44.62	66.52	1.53	V.	2	15.020	45 41.3	22.8	6.0	15 52.67	30 19 40.1
66	9	. .	. .	. .	. .	. .	. .	45.0	14 51.54	66.52	1.56	VII.	2	17.150	3 27.0	22.8	5.7	15 59.62	30 17 25.5
67	6	. .	30.0	48.0	6.0	. .	. .	. .	17 5.77	66.51	1.74	IV.	4	39 420	20 7.5	22.3	2.3	18 14.02	29 54 2.1
68	9	. .	. .	. .	21.0	. .	. .	. .	18 18 21.04	+66.51	+1.69	IV.	3	33.637	−26 11.8	−22.0	− 3.2	18 19 29.24	−30 0 7.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(37) 20. Transit over T. VII assumed as recorded over T. VI.

(37) 42. Transit over T. VI assumed as recorded over T. V.

(37) 51. Transits over T.'s IV–VI assumed as recorded over T.'s II–V.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 37. JULY 15. P. $D_0 = -29° 33' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
69	9	12.5	30.5	48.5	..	..	..	..	18 21 6.07	+66.51	+1.62	III.	3	24.160	−36 6.3	−21.3	− 4.6	18 22 14.20	−30 14 12.1
70	8	43.0	..	19.0	..	..	..	..	22 36.60	66.50	1.58	III.	3	20.180	40 15.9	21.0	5.2	23 44.68	10 2.2
71	7	6.5	24.5	43.0	..	..	..	..	25 0.21	66.50	1.67	III.	3	30.887	29 4.2	20.4	3.6	26 8.38	30 2 58.2
72	6	..	..	..	17.0	34.3	52.3	..	25 16.80	66.50	1.79	IV.	4	44.470	14 50.4	20.3	1.6	26 25.09	29 48 42.3
73	7	5.0	22.3	40.0	..	..	..	..	27 58.00	66.49	1.62	III.	3	25.090	35 7.9	19.7	4.5	29 6.11	30 9 2.1
74	8	..	..	..	..	23.5	..	59.0	28 5.71	66.49	1.80	V.	4	46.620	12 34.9	19.6	1.3	29 14.00	29 46 25.8
75	7	..	..	..	..	6.0	..	..	29 48.20	66.49	1.69	V.	3	33.080	26 46.8	19.3	3.3	30 56.38	30 0 39.4
76	8	..	13.0	30.0	..	..	..	..	31 30.36	66.49	1.82	III.	4	48.760	10 21.0	18.8	0.9	32 38.67	29 44 10.7
77	9	..	..	..	37.0	..	..	..	32 37.00	66.49	1.79	IV.	4	45.590	13 40.0	18.6	1.4	33 45.28	29 47 30.0
78	7	..	..	41.0	59.0	..	..	..	33 58.92	66.48	1.62	IV.	3	26.545	33 36.9	18.3	4.2	35 7.02	30 7 29.4
79	9	..	10.0	..	46.0	..	..	..	35 45.77	66.48	1.82	IV.	4	52.460	6 28.8	17.8	0.4	36 54.07	29 40 17.0
80	7	13.0	31.0	48.5	..	..	24.0	..	36 6.29	66.48	1.77	III.	4	46.170	13 3.7	17.8	1.3	37 14.54	46 52.8
81	9	..	..	..	..	..	..	56.0	36 2.83	66.48	1.84	VII.	4	53.880	4 57.9	17.8	0.2	37 11.15	29 38 45.9
82	9	..	..	..	11.0	..	..	..	39 11.06	66.47	1.62	IV.	3	23.970	36 18.3	17.0	4.6	40 19.15	30 10 9.9
83	9	..	..	14.5	..	..	..	..	40 32.30	66.47	1.61	III.	3	22.870	37 27.1	16.7	4.8	41 40.38	11 18.6
84	9	..	..	..	..	..	16.0	..	40 40.30	66.47	1.55	VI.	2	17.335	43 16.0	16.7	5.6	41 48.32	30 17 8.3
85	7	..	53.0	11.0	29.0	..	..	..	45 28.76	66.46	1.86	IV.	4	52.960	5 57.2	15.6	0.3	46 37.08	29 39 43.1
86	1.2	2.7	20.3	38.0	56.0	..	..	..	51 55.92	66.44	1.67	IV.	3	28.603	31 27.7	14.0	4.0	53 4.03	30 5 15.7
87	9	21.0	..	56.0	..	..	..	..	56 14.06	66.43	1.62	III.	3	23.457	36 50.5	13.0	4.7	57 22.11	10 38.2
88	9	..	56.0	..	..	49.0	..	..	56 31.37	66.43	1.64	V.	3	23.880	36 23.9	13.0	4.6	18 57 39.44	10 11.5
89	7	53.0	10.5	29.0	..	..	..	..	18 59 46.44	66.43	1.60	III.	2	19.900	40 35.4	12.2	5.3	19 0 54.47	14 22.9
90	8	..	28.0	..	..	..	39.0	..	19 0 3.50	66.42	1.69	VI.	3	30.940	29 0.7	12.1	3.6	1 11.61	30 2 46.4
91	6	..	..	..	..	..	..	33.5	0 40.28	66.42	1.84	VII.	4	48.443	10 39.4	12.0	1.0	1 48.54	29 44 22.4
92	9	..	..	..	29.0	..	..	..	2 29.02	66.42	1.77	IV.	4	40.290	19 12.9	11.6	2.2	3 37.21	29 52 56.7
93	7	..	21.5	39.0	57.0	..	..	..	3 56.96	66.41	1.67	IV.	3	28.940	31 6.5	11.2	3.9	5 5.04	30 4 51.6
94	7	8.0	25.0	..	0.5	..	..	..	11 0.74	66.40	1.78	IV.	4	40.420	19 4.7	9.6	2.1	12 8.92	29 52 46.4
95	7	32.0	50.0	..	26.0	..	..	..	11 25.55	66.40	1.82	IV.	4	45.060	14 13.2	9.4	1.5	12 33.77	29 47 54.1
96	9	16.5	34.0	..	..	..	..	..	15 9.87	66.39	1.53	II.	1	10.805	50 2.2	8.6	6.7	16 17.79	30 23 47.5
97	6	..	44.0	1.7	19.5	..	..	..	16 19.53	66.38	1.70	IV.	3	31.575	28 21.3	8.3	3.5	17 27.61	30 2 3.1
98	8	..	..	58.0	16.0	..	..	..	17 15.87	66.38	1.82	IV.	4	45.295	13 58.6	8.1	1.4	18 24.07	29 47 38.1
99	9	..	..	..	47.0	..	22.0	..	17 46.81	66.38	1.87	VI.	4	51.615	7 20.9	8.0	0.5	18 55.06	40 59.4
100	9	..	..	..	..	..	1.0	..	19 25.50	66.37	1.73	VI.	3	35.480	24 16.0	7.6	2.9	20 33.60	57 56.5
101	8	..	..	..	..	48.0	..	..	20 30.25	66.37	1.81	V.	4	45.000	14 16.6	7.3	1.5	21 38.43	47 55.4
102	10	33.0	..	9.0	..	..	..	..	26 26.47	66.35	1.78	III.	4	38.883	20 41.1	5.9	2.4	27 34.60	29 54 19.4
103	8	45.0	..	21.0	..	..	..	..	30 38.54	66.34	1.69	III.	3	28.783	31 16.2	5.0	3.9	31 46.57	30 4 55.1
104	9	..	..	48.0	..	..	42.0	..	19 51 6.10	+66.28	+1.65	VI.	2	22.313	−38 3.8	− 2.3	− 4.9	19 52 14.03	−30 11 41.0

ZONE 38. JULY 24. C. $D_0 = -30° 47' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	..	..	52.8	11.2	29.0	..	..	21 30 10.99	+16.20	+1.40	IV.	4	48.611	−10 30.3	−19.7	− 0.9	21 30 28.59	−30 58 40.9
2	5.6	..	1.7	20.0	..	56.1	..	32.5	38 38.05	16.15	0.70	IV.	2	13.671	47 6.0	18.3	6.7	38 54.90	31 35 21.0
3	9	..	19.8	37.0	55.0	13.0	31.0	..	42 55.18	16.13	1.41	IV.	4	46.339	12 53.0	17.7	1.4	43 12.72	1 2.1
4	7	..	16.8	..	52.6	10.6	28.5	..	46 52.63	16.11	1.09	IV.	3	29.443	30 35.1	17.1	4.1	47 9.83	18 46.3
5	9	..	..	..	..	..	..	41.0	46 46.77	16.11	0.70	VII.	2	11.121	49 44.7	17.1	7.1	47 3.58	37 58.9
6	9	..	6.5	24.7	43.5	..	..	..	52 42.96	16.07	0.97	IV.	3	22.650	37 41.1	16.2	5.2	53 0.00	25 52.5
7	9	..	6.0	..	42.0	..	..	..	55 42.09	16.06	0.84	IV.	3	15.421	45 14.5	15.6	6.4	55 58.99	33 26.7
8	8	..	..	18.0	37.0	55.0	..	..	21 56 36.67	16.06	1.00	IV.	3	22.482	37 51.7	15.7	5.2	21 56 53.73	26 2.6
9	9	..	34.0	53.0	11.7	29.7	47.5	..	22 5 11.19	+16.00	+1.31	IV.	3	34.900	−24 52.5	−14.5	− 3.2	22 5 28.50	−31 13 0.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 24.	17	+ 8.856	+ 0.003	+ 0.079	+ 0.300	+ 0.230	0 0 2.16	30.005

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 38	July 24, 21 30	70 9 62.0	62.8	74.0	62.7	57.8	47.1	61.07	29.908	77.5	73.0	75.6	76.3	77.2
	21 56	..	..	..	..	..	..	..	29.916	76.7	73.0			
	22 30	62.2	62.2	74.0	61.8	57.0	47.0	60.70	29.922	76.3	72.6	74.8	75.2	
	22 59	..	..	..	..	..	..	..	29.924	75.8	71.5			
	23 10	61.9	61.9	73.8	61.8	57.1	46.4	60.48	..	..	..	74.9	75.0	77.3

REMARKS.

(37) 69 and 70. Micrometer reading of these two stars assumed to have been interchanged.

(37) 76. Transits over T.'s III and IV assumed as recorded over T.'s II and III.

(37) 80. Transit over T. V assumed as recorded over T. VI.

July 24. Night unfavorable; cloudy horizon; many stars too faint for observation; at times disappearing as if through clouds.

ZONE 38. JULY 24. C. $D_0 = -30° 47' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
10	8	. .	18.0	36.0	54.0	. .	30.1	. .	22 7 54.05	+15.99	+1.31	IV.	3	33.900	−25 55.2	−14.2	− 3.4	22 8 11.35	−31 14 2.8
11	9	. .	. .	31.2	49.0	6.7	. .	. .	10 48.97	15.97	1.18	IV.	3	27.166	32 57.9	13.8	4.5	11 6.12	21 6.2
12	9	. .	. .	28.0	46.0	4.0	. .	. .	10 46.00	15.97	1.09	VII.	3	23.312	36 59.1	13.8	5.1	11 3.06	25 8.0
13	8.9	. .	51.0	8.5	26.5	45.0	3.0	. .	21 26.79	15.91	1.42	IV.	3	35.577	24 10.1	12.6	3.1	21 44.12	12 15.8
14	7	. .	. .	46.2	4.5	22.6	40.2	. .	27 4.40	15.88	1.56	IV.	4	40.942	18 31.8	12.0	2.2	27 21.84	6 36.0
15	6	. .	6.6	24.1	42.0	0.2	18.4	. .	31 42.23	15.85	1.19	IV.	3	22.638	37 41.8	11.5	5.2	31 59.27	25 48.5
16	9	. .	9.0	26.7	45.0	3.0	21.2	. .	33 44.99	15.84	1.20	IV.	3	22.490	37 51.2	11.3	5.2	34 2.03	25 57.7
17	9	. .	. .	. .	. .	37.0	55.5	. .	34 19.29	15.83	1.64	V.	4	43.518	15 49.8	11.2	1.9	34 36.76	3 52.9
18	9	. .	45.7	3.8	. .	. .	57.7	. .	44 21.76	15.77	1.76	IV.	4	46.210	13 1.1	10.3	1.4	44 39.29	1 2.8
19	9	. .	. .	. .	. .	55.7	. .	32.0	46 37.77	15.76	1.37	V.	3	27.002	33 8.1	10.1	4.5	46 54.90	21 12.7
20	6.7	. .	38.2	56.5	14.2	32.6	50.2	. .	55 14.35	15.71	1.54	IV.	3	32.801	27 4.2	9.4	3.6	55 31.60	15 7.2
21	9	. .	. .	. .	. .	. .	. .	31.0?	55 37.00	15.71	1.55	VII.	3	33.088	26 45.7	9.4	3.5	55 54.26	14 48.6
22	9	. .	36.0	53.7	11.8	30.0	47.8	. .	58 11.87	15.69	1.34	IV.	3	23.144	37 10.1	9.3	5.1	58 28.90	25 14.5
23	9	. .	. .	. .	16.?	. .	44.7?	. .	22 59 17.41	15.69	1.80	IV.	4	44.772	14 31.2	9.2	1.6	22 59 . .	31 2 32.0
24	8	. .	. .	36.0	54.0	11.7	. .	. .	23 4 53.88	+15.66	+2.04	IV.	4	54.659	− 4 11.4	− 8.9	− 0.1	23 5 11.58	−30 52 10.4

ZONE 39. JULY 29. C. $D_0 = -30° 48' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	59.2	17.5	35.0	53.7	. .	18 0 17.32	+17.44	+0.41	IV.	2	16.520	−44 7.5	−44.9	− 6.1	18 0 35.17	−31 33 8.5
2	8.9	. .	14.0	32.2	49.7	7.5	25.0	. .	2 49.71	17.43	1.14	IV.	4	49.400	9 40.9	44.3	0.9	3 8.28	30 58 36.1
3	9	. .	. .	. .	52.0	10.0	28.1	. .	4 52.02	17.43	0.64	IV.	3	24.021	35 15.1	43.7	4.9	5 10.09	31 25 13.7
4	6.7	. .	41.0	59.0	17.0	34.9	. .	. .	6 16.94	17.42	0.73	IV.	3	27.369	32 45.2	43.4	4.4	6 35.09	21 43.0
5	7	. .	. .	. .	. .	. .	45.7?	. .	6 10.73	17.42	0.92	VI.	3	36.626	23 4.0	43.4	2.9	6 29.07	12 0.3
6	7	. .	. .	. .	. .	. .	50.7	8.5	7 14.56	17.42	0.76	VI.	3	28.461	31 36.5	43.2	4.2	7 32.74	20 33.9
7	8	. .	. .	. .	48.7	6.2	. .	. .	8 48.45	17.42	0.86	IV.	3	32.068	27 50.3	42.8	3.6	9 6.73	16 46.7
8	7	. .	. .	6.9	24.9	43.0	. .	. .	10 24.94	17.41	0.76	IV.	3	26.647	33 30.4	42.4	4.5	10 43.11	22 27.3
9	6.7	. .	. .	. .	16.5	34.7	52.5	. .	11 16.61	17.41	1.23	IV.	4	47.991	11 9.2	42.2	1.1	11 35.25	0 2.5
10	9	. .	. .	50.7	8.5	26.5	. .	. .	14 8.55	17.40	0.95	IV.	3	32.499	27 23.3	41.5	3.6	14 26.90	16 18.4
11	9	. .	30.0	. .	. .	24.0	. .	. .	14 5.98	17.40	1.04	IV.	3	36.495	23 12.6	41.5	2.9	14 24.42	12 7.0
12	9	. .	. .	. .	42.2	. .	. .	. .	15 42.24	17.40	0.60	IV.	2	15.066	45 38.5	41.2	6.3	16 0.24	34 36.0
13	6	. .	. .	44.5	2.0	20.5	38.5	. .	17 2.37	17.40	0.77	IV.	3	22.086	38 16.4	40.8	5.2	17 20.54	27 12.4
14	8.9	. .	. .	. .	. .	. .	9.7	. .	17 33.57	17.40	0.58	VI.	2	12.921	47 52.3	40.7	6.7	17 51.55	36 49.7
15	8.9	. .	. .	59.0	. .	35.0	53.0	. .	19 16.92	17.39	0.57	IV.	2	11.038	49 50.8	40.3	7.0	19 34.88	38 48.1
16	9	. .	. .	. .	. .	. .	56.0	. .	20 20.11	17.39	1.29	VI.	4	44.901	14 22.3	40.0	1.6	20 38.79	3 13.9
17	8	. .	. .	58.0	16.5	34.1	. .	10.5	22 16.26	17.38	1.11	IV.	3	34.799	24 58.8	39.6	3.2	22 34.75	13 51.6
18	8	. .	47.5	6.0	. .	. .	. .	. .	24 23.77	17.37	1.10	III.	3	32.896	26 58.2	39.0	3.5	24 42.24	15 50.7
19	7	. .	. .	. .	. .	50.7	8.0	. .	24 32.30	17.37	0.97	V.	3	26.852	33 17.4	39.0	4.4	24 50.64	31 22 10.8
20	8.9	. .	. .	9.5	27.2	45.0	. .	. .	27 27.21	17.37	1.58	IV.	4	54.390	4 27.7	38.3	0.1	27 46.16	30 53 16.1
21	7.8	. .	. .	. .	35.0	53.0	. .	. .	28 34.98	17.36	0.88	IV.	2	20.688	39 46.1	38.0	5.4	28 53.22	31 28 39.5
22	9	. .	. .	27.5	45.0	3.0	. .	. .	30 45.17	17.36	1.44	IV.	4	45.139	14 8.3	37.5	1.6	31 3.97	2 57.4
23	7.8	. .	. .	. .	46.5	4.5	. .	. .	31 46.50	17.35	1.15	IV.	3	30.610	29 21.8	37.3	3.8	32 5.00	18 12.9
24	6.7	. .	. .	. .	. .	. .	32.0	50.5	31 56.08	17.35	0.74	VI.	1	12.884	47 51.8	37.2	6.7	32 14.17	36 45.7
25	8	. .	. .	58.0	. .	. .	. .	10.0	34 15.95	17.34	0.93	IV.	2	18.244	42 19.4	36.7	5.8	34 34.22	31 11.9
26	8	. .	1.2	. .	. .	56.0	13.7	. .	34 37.61	17.34	0.89	IV.	2	16.808	43 49.3	36.6	6.0	34 55.84	32 41.9
27	9	. .	44.0	. .	20.0	37.1	56.0	. .	37 19.81	17.33	1.57	IV.	4	47.102	12 5.0	35.9	1.3	37 38.71	0 52.2
28	9	. .	37.0	. .	13.2	. .	49.5	. .	40 13.26	17.33	1.27	IV.	3	30.445	29 32.2	35.2	3.9	40 31.86	18 21.3
29	6.7	. .	. .	31.0	49.0	7.1	25.0	. .	41 49.02	17.32	1.13	IV.	3	23.199	37 6.7	34.9	5.0	42 7.47	31 25 56.6
30	6	. .	. .	. .	. .	2.0	20.2	38.7	18 42 44.42	+17.32	+1.77	V.	4	53.262	− 5 38.1	−34.6	− 0.3	18 43 3.51	30 54 23.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ' "	r.
July 29,	17	+ 9.228	+ 0.009	+ 0.117	+ 0.200	+ 0.330	0 0 2.58	30.001

REMARKS.

(38) 23. Observations in A. R. worthless.
July 29. A light haze, barely perceptible; clouds form and disappear rapidly.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ' "						"	in.	°	°	°	°	°
Zone 39	July 29, 18 0	70 9 61.4	61.9	74.0	63.4	55.0	46.1	60.30	29.960	76.0	70.8	75.5	76.2	78.5
	18 30	. .	. .	. .	. .	. .	. .	. .	29.960	75.2	70.7			
	18 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.6			

ZONE 40. JULY 29. C. $D_0 = -30° 48' 10''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
1	9	. .	. .	28.7	46.0	4.5	22.5	. .	19 45 46.41	+17.07	+1.28	IV.	2	20.119	−40 21.8	−19.8	− 5.5	19 46 4.76	−31 28 57.1
2	6.7	. .	. .	. .	. .	3.5	21.6	. .	46 43.56	17.06	1.48	V.	4	49.838	9 12.8	19.6	0.8	47 22.10	30 57 43.2
3	7	. .	35.0	53.0	. .	29.0	47.0	4.7	49 10.09	17.05	1.48	IV.	4	51.379	7 36.7	19.0	0.6	49 28.62	30 56 6.3
4	7.8	. .	. .	14.6	32.8	50.5	8.8	. .	54 32.70	17.03	1.40	IV.	3	40.121	19 24.9	17.8	2.5	54 51.13	31 7 55.1
5	8	. .	. .	4.3	22.8	40.7	58.7	. .	56 22.64	17.02	1.36	IV.	3	34.642	25 8.8	17.4	3.2	56 41.02	13 39.4
6	8.9	. .	. .	43.2	2.0	. .	36.7	. .	58 0.99	17.01	1.34	IV.	3	31.602	28 19.6	17.0	3.7	58 19.34	16 50.3
7	9	. .	. .	. .	. .	. .	. .	3.5	19 58 9.48	17.01	1.35	VII.	3	33.516	26 18.9	17.0	3.4	58 27.84	14 49.3
8	9	. .	. .	10.7	28.0	46.0	. .	. .	20 0 28.22	17.00	1.22	IV.	2	13.401	47 23.0	16.5	6.6	20 0 46.44	31 35 56.1
9	9	. .	. .	55.0	14.0	32.0	. .	. .	4 13.67	16.98	1.32	IV.	3	27.689	32 25.0	15.7	4.3	4 31.97	20 55.0
10	9	. .	. .	54.7	12.5	. .	48.7	. .	6 12.67	16.97	1.40	IV.	3	39.630	19 55.7	15.2	2.4	6 31.04	31 8 23.3
11	9	. .	. .	58.7	16.5	. .	. .	. .	8 16.57	16.96	1.46	IV.	4	48.786	10 19.2	14.8	1.0	8 34.99	30 58 45.0
12	8.9	. .	13.2	31.0	49.1	. .	25.7	. .	10 49.28	16.95	1.27	IV.	3	20.968	39 26.5	14.2	5.4	11 7.50	31 27 56.1
13	7.8	. .	57.0	15.5	33.3	51.0	9.2	. .	14 33.22	16.93	1.46	IV.	4	49.511	9 33.9	13.4	0.9	14 51.61	30 57 58.2
14	9	. .	. .	. .	. .	. .	33.0	. .	14 57.12	16.93	1.45	VI.	4	48.552	10 33.2	13.3	1.0	15 15.50	30 58 57.5
15	8	. .	26.1	44.4	2.0	20.7	. .	. .	17 2.31	16.91	1.37	IV.	3	38.444	21 10.3	12.9	2.6	17 20.59	31 9 35.8
16	6.7	. .	. .	. .	7.0	25.0	42.8	. .	18 6.93	16.91	1.31	IV.	3	28.512	31 33.5	12.6	4.2	18 25.15	20 0.3
17	9	. .	. .	. .	33.7	. .	5.7?	. .	20 31.73	16.91	1.36	IV.	3	35.872	23 51.5	12.1	3.0	20 50.00	31 12 16.6
18	6.7	. .	37.5	55.0	13.5	30.8	49.1	. .	25 13.20	16.88	1.44	IV.	2	48.600	10 31.0	11.2	1.0	25 31.62	30 58 53.2
19	9	. .	. .	. .	2.0	21.0	. .	. .	26 2.51	16.88	1.37	IV.	3	39.317	20 15.5	11.0	2.5	26 20.76	31 8 39.0
20	9	. .	. .	. .	22.5	. .	58.5	. .	26 22.56	16.88	1.41	IV.	3	44.079	15 16.3	10.9	1.8	26 40.85	3 39.0
21	8.9	. .	. .	. .	35.6	54.0	11.8	. .	27 35.81	16.87	1.40	IV.	3	43.166	16 13.7	10.6	1.9	28 54.08	4 36.2
22	7	. .	. .	. .	. .	. .	. .	37.0	27 42.87	16.87	1.24	VII.	1	20.638	39 45.3	10.6	5.5	28 0.98	28 11.4
23	8	. .	. .	. .	. .	. .	. .	58.0	30 3.87	16.86	1.25	VII.	2	21.986	38 23.7	10.1	5.2	30 21.98	26 49.0
24	8	. .	. .	26.7	45.0	. .	20.2	. .	32 44.67	16.84	1.39	IV.	4	42.416	16 59.4	9.6	2.0	33 2.90	5 21.0
25	9	. .	. .	. .	. .	. .	26.0?	. .	32 50.11	16.84	1.41	VI.	4	45.241	14 1.2	9.6	1.5	33 8.36	2 22.3
26	8.9	. .	. .	. .	47.0?	. .	. .	. .	35 47.05	16.83	1.23	IV.	2	19.428	41 5.3	9.0	5.6	36 5.11	29 29.9
27	6.7	. .	. .	. .	. .	. .	29.5	47.4	35 53.54	16.83	1.42	VI.	4	46.581	12 36.9	9.0	1.3	36 11.79	0 57.2
28	7.8	. .	9.0	. .	45.2	3.5	. .	. .	42 45.24	16.79	1.31	IV.	3	32.950	26 54.9	7.6	3.5	43 3.34	15 16.0
29	7	. .	. .	38.5	56.0	14.6	32.0	. .	43 56.28	16.78	1.31	IV.	3	31.493	28 26.5	7.4	3.7	44 14.37	16 47.6
30	9	. .	34.0	. .	. .	. .	. .	. .	46 10.00	16.77	1.34	.	3	35 . .	25 . .	. .	. .	46 28.11	13
31	9	. .	. .	. .	10.0	27.0	. .	. .	20 46 9.48	+16.77	+1.23	IV.	3	20.088	−40 21.7	− 7.0	− 5.5	20 46 27.48	−31 28 44.2

ZONE 41. AUGUST 5. C. $D_0 = -27° 3' 20'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	48.5	6.0	23.0	41.0	58.0	. .	17 16 23.31	+17.18	+2.23	IV.	3	35.872	−23 51.5	−14.4	− 2.3	17 16 42.72	−27 27 28.2
2	6	. .	52.0	9.0	26.7	44.5	1.7	. .	28 26.77	17.15	1.20	IV.	2	7.624	53 24.6	11.7	5.6	28 45.12	57 1.9
3	8	. .	23.7	41.0	58.0	. .	33.0	. .	30 58.29	17.14	1.52	IV.	2	16.961	44 42.4	11.2	4.6	31 16.95	48 18.2
4	6	. .	58.0	15.5	33.0	50.0	7.7	. .	33 32.84	17.14	1.48	IV.	2	15.879	44 47.5	10.6	4.6	33 51.46	48 22.7
5	8	. .	13.0	. .	47.7	5.0	22.0	. .	36 47.61	17.13	2.37	IV.	3	40.679	18 49.8	9.8	1.8	37 7.11	22 21.4
6	5	. .	. .	. .	49.2	6.7	23.5	41.0	37 49.03	17.13	1.56	IV.	2	18.064	42 30.6	9.6	4.3	38 7.72	46 4.5
7	8.9	. .	50.0	. .	25.0	. .	0.0	. .	41 25.03	17.12	1.52	IV.	2	17.346	43 35.8	8.8	4.4	41 43.67	47 9.0
8	6.7	. .	16.6	33.5	51.1	8.4	25.7	. .	17 43 51.07	+17.11	+2.63	IV.	4	48.082	−11 3.5	− 8.2	− 0.9	17 44 10.81	−27 14 32.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ' "	r.
Aug. 5,	17	+ 9.142	+ 0.005	+ 0.294	+ 0.300	+ 0.230	. . . .	30.002
10,	18	+ 10.877	+ 0.004	+ 0.294	+ 0.300	+ 0.230		

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ' "						"	in.	°	°	°	°	°
Zone 40	July 29, 19 40	70 09 60.6	62.0	74.1	64.1	55.4	45.1	60.22	29.956	75.0	70.5	75.5	75.5	
	20 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.1			
	20 45	61.0	62.1	73.8	63.4	55.0	45.1	60.07	29.944	74.8	71.0	75.2	75.8	78.2
Zone 41	Aug. 5, 17 15	66 24 59.2	55.8	70.9	56.6	50.2	41.0	55.62	30.076	81.0	78.3	81.0	78.8	
	17 43	. .	. .	. .	. .	. .	. .	. .	30.078	80.6	76.1			
	17 50	59.0	56.0	71.1	56.9	50.2	41.1	55.72	. .	. . .	. .	79.8	78.4	76.5

REMARKS.

(40) 2. Minutes assumed as 47 instead of 46, and Transits over T.'s IV and V as recorded over T.'s V and VI.

(40) 21. Minutes assumed as 28 instead of 27.

August 5. Hazy; moon bright.

(41) 3. Micrometer reading assumed as $15^r.961$ instead of $16^r.961$.

ZONE 42. AUGUST 11. P. $D_{\circ} = -24° 32' 20''$.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	18.0	35.0	52.0	9.0	..	..	..	17 38 9.01	+18.53	+1.24	IV.	3	26.023	−34 9.5	−64.4	− 3.7	17 38 28.78	−25 7 37.6
2	8	..	22.5	39.5	56.0	..	..	..	40 56.31	18.52	1.29	IV.	4	44.665	14 38.0	63.7	1.9	41 16.12	24 48 3.6
3	6	29.5	46.0	3.5	20.5	..	..	..	45 20.32	18.50	1.28	IV.	4	41.770	17 39.7	62.6	2.2	45 40.10	24 51 4.5
4	9	..	..	16.0	33.0	..	..	..	46 33.02	18.50	1.25	IV.	3	23.700	36 35.2	62.3	4.0	46 52.77	25 10 1.5
5	10	..	..	..	..	4.0	..	38.0	45 46.96	18.50	1.24	VII.	3	20.000	40 26.8	62.5	4.3	46 6.70	13 53.6
6	9	..	..	..	..	..	34.0	..	48 0.06	18.49	1.26	.	F W	30.006	29 59.6	62.0	3.3	48 19.81	3 24.9
7	9	..	51.5	8.5	..	..	..	..	50 25.48	18.49	1.26	III.	3	29.293	30 44.3	61.4	3.4	50 45.23	4 9.1
8	9	..	..	..	..	..	53.5	..	50 19.53	18.49	1.25	VI.	3	24.950	35 16.6	61.4	3.8	50 39.27	8 41.8
9	9	..	54.0	11.0	..	..	..	..	52 27.98	18.48	1.28	III.	3	32.910	26 57.2	60.8	3.1	52 47.74	25 0 21.1
10	9	..	..	..	47.0	4.0	20.0	..	52 46.72	18.48	1.29	VI.	4	41.167	18 17.1	60.8	2.2	53 6.49	24 51 40.1
11	7	34.3	51.0	8.0	25.0	..	..	..	55 24.99	18.47	1.31	IV.	4	51.450	7 32.2	60.1	1.2	55 44.77	24 40 53.5
12	8	1.5	18.5	36.0	52.5	..	..	..	57 52.62	18.46	1.26	IV.	3	26.630	33 31.5	59.5	3.7	58 12.34	25 6 54.7
13	9	..	..	..	..	..	..	43.0	57 52.00	18.46	1.27	VII.	3	26.640	33 30.5	59.5	3.6	58 11.73	6 53.6
14	5	..	..	..	..	..	52.0	..	17 59 17.93	18.46	1.23	VI.	1	5.170	55 56.6	59.2	5.8	17 59 37.62	29 21.6
15	8	..	..	..	..	..	55.0	..	18 0 20.98	18.45	1.25	VI.	2	15.750	44 55.3	58.9	4.7	18 0 40.68	18 18.9
16	6	56.5	13.7	30.5	..	..	..	..	3 47.57	18.44	1.27	III.	3	22.780	37 32.7	58.0	4.1	4 7.28	10 54.8
17	7	..	..	15.5	..	50.0	..	..	4 32.71	18.44	1.23	VI.	2	8.430	52 33.9	57.9	5.5	4 52.38	25 57.3
18	10	..	34.0	51.0	..	..	..	..	7 8.00	18.43	1.27	III.	3	23.830	36 26.8	57.2	3.9	7 27.70	9 47.9
19	9	..	..	..	..	33.0	..	6.5	7 15.75	18.43	1.28	VII.	3	30.345	29 38.2	57.2	3.3	7 35.46	25 2 58.7
20	5	6.5	23.5	..	57.5	..	..	..	11 57.45	18.41	1.30	IV.	3	34.504	25 17.5	56.0	2.9	12 17.16	24 58 36.4
21	10	..	23.0	40.0	..	..	..	..	12 40.02	18.41	1.31	IV.	3	34.960	24 48.8	55.8	2.8	12 59.74	58 7.4
22	9	42.0	59.0	15.0	..	..	..	..	18 32.54	18.39	1.35	III.	4	53.387	5 30.7	54.4	1.0	18 52.28	24 38 46.1
23	7	..	..	6.0	..	39.0	..	..	19 22.48	18.38	1.29	V.	3	25.680	34 31.0	54.2	3.8	19 42.15	25 7 49.0
24	6	..	..	..	..	..	21.0	38.3	19 47.09	18.38	1.27	VI.	2	13.280	47 30.2	54.1	5.0	20 6.74	25 20 49.3
25	7	..	..	..	29.0	46.0	..	..	21 29.02	18.37	1.32	IV.	3	33.813	26 0.7	53.7	2.9	21 48.71	24 59 17.3
26	9	..	..	..	35.0	..	9.0	..	22 35.07	18.37	1.34	VI.	4	42.880	16 29.3	53.4	2.1	22 54.78	24 49 44.8
27	8	..	..	..	..	..	53.0	..	23 19.63	18.36	1.30	VI.	3	26.175	38 10.9	53.2	3.8	23 39.29	25 11 28.1
28	9	..	..	39.0	56.0	..	..	..	26 56.02	18.35	1.32	IV.	3	34.300	25 30.4	52.3	2.9	27 15.69	24 58 45.6
29	9	..	..	..	..	32.5	49.5	..	27 15.54	18.35	1.32	VI.	3	36.860	22 49.3	52.2	2.7	27 35.21	56 4.2
30	8	..	50.0	..	23.5	..	..	..	29 23.74	18.34	1.35	IV.	2	42.705	16 44.6	51.7	2.1	29 43.43	24 49 58.4
31	8	13.0	30.0	47.0	3.5	..	..	..	32 3.87	18.33	1.31	IV.	3	26.070	34 6.6	51.1	3.7	32 23.51	25 7 21.4
32	8	..	46.0	3.0	20.0	..	..	..	33 20.01	18.32	1.31	IV.	3	23.255	37 3.2	50.8	4.0	33 39.64	10 18.0
33	4	25.5	42.5	59.5	17.0	..	..	..	35 16.62	18.32	1.31	IV.	3	24.122	36 8.8	50.3	3.9	35 36.25	25 9 23.0
34	9	47.0	4.0	21.0	38.0	..	..	..	38 37.96	18.31	1.34	IV.	3	37.050	22 37.6	49.5	2.6	38 57.61	24 55 49.7
35	8	..	6.0	23.0	40.0	..	..	..	40 39.98	18.30	1.36	IV.	2	44.223	15 9.4	49.0	1.9	40 59.64	48 20.3
36	8	..	47.0	3.3	20.7	..	..	..	42 20.97	18.30	1.36	III	2	43.040	16 23.5	48.6	2.0	42 40.63	49 34.1
37	8	0.0	17.3	31.3	..	..	..	..	44 51.14	18.29	1.35	III.	3	35.990	23 43.9	48.0	2.7	45 10.78	56 54.6
38	9	..	..	..	0.0	17.3	..	..	45 0.17	18.28	1.36	V.	3	39.280	20 17.8	47.9	2.4	45 19.81	24 53 28.1
39	7	..	..	11.0	28.0	..	..	..	46 28.02	18.28	1.32	IV.	2	19.690	40 48.7	47.6	4.3	46 47.62	25 14 0.6
40	9	..	..	55.0	12.3	..	..	..	47 12.13	18.27	1.37	IV.	2	43.983	15 24.3	47.4	2.0	47 31.77	24 48 33.7
41	5	58.0	15.0	32.0	49.0	..	..	..	48 48.98	18.27	1.34	IV.	3	28.967	31 4.8	47.0	3.4	49 8.59	25 4 15.2
42	5	2.0	19.0	36.0	53.0	..	..	..	50 52.99	18.26	1.33	IV.	3	24.686	35 33.4	46.5	3.9	51 12.58	8 43.8
43	4	6.0	23.3	40.0	57.0	..	..	..	52 57.05	18.25	1.34	IV.	3	30.253	29 44.3	46.0	3.3	53 16.64	2 54.6
44	5	22.5	39.5	..	..	..	..	..	55 13.65	18.24	1.30	II.	1	7.320	53 40.6	45.5	5.6	55 33.19	26 51.7
45	9	..	..	..	..	35.0	..	..	55 17.98	18.24	1.35	V.	3	31.080	28 52.3	45.4	3.2	55 37.57	25 2 0.9
46	9	..	..	..	..	..	..	20.0	55 29.08	18.24	1.37	VII.	4	39.540	19 58.6	45.4	2.4	55 48.69	24 53 6.4
47	5	..	..	..	..	..	..	58.5	56 7.58	18.23	1.37	VII.	4	38.933	20 36.6	45.2	2.5	56 27.18	53 44.3
48	8	..	..	..	..	2.5	19.3	..	57 45.49	18.23	1.39	VI.	4	47.307	11 51.6	44.9	1.6	58 5.11	44 58.1
49	7	..	..	..	..	2.0	19.0	..	18 58 45.06	+18.22	+1.37	V.	4	39.467	−20 4.2	−44.6	− 2.4	18 59 4.65	−24 53 11.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 11,	18	+ 10.685	− 0.003	+ 0.294	+ 0.300	+ 0.230		

REMARKS.

(42) 21. Transits over T.'s III and IV assumed as recorded over T.'s II and III.

(42) 27. Micrometer reading assumed as 22ʳ.175, not 26ʳ.175, to agree with Mer. Cir. Z. 1847, Aug. 30; Mural Z. 1848, Aug. 16; and Arg. Z. 220:127 and 308:57.

(42) 37. Transit over T. III assumed as 34ˢ.3, not 31ˢ.3.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 42	Aug. 11, 17 35	63 54 66.3	63.0	76.5	66.4	55.6	45.5	62.22	30.106	78.0	72.5	..	78.0	78.0
	18 29	..	..	..	..	..	..	..	30.108	76.5	70.6			
	19 30	..	..	..	..	..	..	..	30.110	75.2	68.0			
	19 50	65.7	62.8	77.0	66.0	55.2	44.3	61.83	30.114	75.0	69.2	..	..	75.5

ZONE 42. AUGUST 11. P. $D_\circ = -24° 32' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	..	..	..	..	..	..	6.5	18 59 15.43	+18.22	+1.32	VII.	2	15.190	−45 30.1	−44.5	− 4.8	18 59 34.97	−25 18 39.4
51	9	25.0	..	59.0	..	..	..	..	19 3 15.98	18.20	1.34	III.	3	24.255	36 0.4	43.5	3.9	19 3 35.52	25 9 7.8
52	7	..	..	..	..	..	50.0	7.0	3 16.15	18.20	1.39	VI.	4	48.297	10 49.5	43.5	1.6	3 35.74	24 43 54.6
53	7	43.0	0.0	17.0	34.0	..	..	..	6 33.96	18.19	1.36	IV.	3	34.480	25 19.1	42.7	2.9	6 53.51	24 58 24.7
54	9	..	..	..	..	..	..	23.5	8 32.43	18.18	1.33	VII.	2	13.730	47 1.5	42.3	4.9	8 41.94	25 20 8.7
55	8	..	..	32.5	49.0	6.3	..	..	10 49.28	18.17	1.39	IV.	4	38.500	21 5.2	41.8	2.5	11 8.84	24 54 9.5
56	5	58.0	..	32.0	49.0	..	..	..	15 48.92	18.14	1.40	IV.	4	44.680	14 37.0	40.6	1.9	16 8.46	47 39.5
57	9	5.0	22.0	39.0	56.0	..	..	..	15 55.91	18.14	1.41	VI.	4	50.060	8 58.7	40.5	1.4	16 15.46	42 0.6
58	9	..	5.5	..	..	56.0	..	..	20 39.23	18.12	1.38	V.	3	33.043	26 49.1	39.4	3.0	20 58.73	59 51.5
59	9	..	..	..	..	..	45.0	..	21 11.11	18.12	1.40	VI.	4	39.260	20 16.8	39.3	2.4	21 30.63	53 18.5
60	9	..	47.5	..	17.0	..	..	..	23 17.04	18.11	1.36	IV.	2	19.160	41 21.9	38.8	4.4	23 36.51	14 25.1
61	8	..	..	..	21.0	39.0	..	12.5	23 21.45	18.11	1.36	VII.	2	18.240	42 18.9	38.8	4.5	23 40.92	24 15 22.2
62	5	44.7	1.3	18.3	..	..	..	..	26 35.39	18.09	1.38	III.	3	30.443	29 32.2	38.0	3.3	26 54.86	25 2 33.5
63	4	..	42.0	58.0	15.0	..	..	..	27 15.35	18.09	1.36	IV.	2	20.890	39 33.3	37.9	4.2	27 34.80	12 35.4
64	9	..	10.0	..	..	..	..	..	30 44.00	18.07	1.38	II.	3	23.623	36 39.7	37.0	4.0	31 3.45	9 41.7
65	8	19.0	36.0	..	..	..	..	..	32 10.01	18.06	1.37	III.	2	22.455	37 55.4	36.7	4.1	32 29.44	10 56.2
66	7	..	23.0	40.0	57.0	..	..	..	32 57.02	18.06	1.37	IV.	2	21.217	39 13.0	36.5	4.2	33 16.45	12 13.7
67	8	..	45.0	2.0	19.0	..	..	..	34 19.00	18.05	1.39	IV.	3	28.980	31 4.0	36.2	3.4	34 38.44	4 3.6
68	8	9.3	26.3	43.0	..	..	..	..	37 0.21	18.04	1.38	IV.	2	19.253	41 16.2	35.5	4.4	37 19.63	14 16.1
69	8	59.3	16.0	33.5	50.5	..	..	..	41 50.36	18.01	1.37	IV.	2	17.140	43 28.6	34.3	4.6	42 9.74	25 16 27.5
70	8	..	..	..	..	59.0	..	33.0	42 42.07	18.01	1.43	VII.	4	43.307	16 2.2	34.1	2.0	43 1.51	24 48 58.3
71	9	..	..	31.3	..	..	..	23.0	44 50?.18	18.00	1.43	VI.	4	38.897	20 39.4	33.7	2.5	45 . .	53 35.6
72	9	..	..	..	..	..	..	28.0	19 48 37.08	+17.98	+1.43	VII.	4	42.392	−16 59.6	−32.6	− 2.1	19 48 56.49	−24 49 54.3

ZONE 43. AUGUST 11. P. $D_\circ = -24° 32' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	..	..	19.0	35.0	..	..	..	21 23 35.52	+17.46	+0.99	IV.	2	18.242	−42 19.6	−13.8	− 4.5	21 23 53.97	−25 14 57.9
2	8	..	..	..	..	..	..	32.0	23 41.11	17.46	1.39	VII.	4	43.427	15 54.6	13.7	2.0	23 59.96	24 48 30.3
3	8	48.5	5.7	22.3	..	..	..	..	28 39.48	17.44	1.11	III.	3	25.545	34 39.4	12.9	3.8	28 58.03	25 7 16.1
4	8	12.0	29.3	46.0	3.0	..	..	..	30 3.07	17.43	1.11	IV.	3	25.523	34 41.0	12.7	3.8	30 21.61	7 17.5
5	9	14.0	31.5	48.0	..	..	..	..	33 5.21	17.41	0.92	III.	2	13.400	47 23.0	12.3	5.0	33 23.53	25 20 0.3
6	8	37.0	54.0	11.0	28.0	..	..	..	34 27.94	17.40	1.38	IV.	4	42.563	16 50.0	12.1	2.1	34 46.72	24 49 24.2
7	8	29.0	45.5	2.5	..	..	..	..	39 19.57	17.37	1.46	III.	4	46.873	12 19.3	11.4	1.6	39 38.40	44 52.3
8	.	..	15.0	..	..	..	..	..	44 49 .	17.35	. .	.	.	. .	. . .	. .	. .	45	
9	9	..	..	38.0	..	11.5	..	..	47 54.79	17.32	1.51	V.	4	48.713	10 23.5	10.2	1.4	48 13.62	42 55.1
10	9	..	..	8.3	..	..	..	..	50 25.25	17.31	1.62	III.	4	55.090	3 44.4	9.8	0.9	50 44.18	24 36 15.1
11	8	1.0	18.5	36.0	..	..	..	..	58 52.48	17.26	1.14	III.	3	25.490	34 42.9	8.7	3.8	59 10.88	25 7 15.4
12	8	..	..	..	..	17.0	33.7	..	21 58 59.83	17.26	1.04	VI.	2	18.510	42 2.4	8.7	4.5	21 59 18.13	25 14 35.6
13	7	..	..	47.5	4.5	..	..	..	22 6 4.49	17.22	1.51	IV.	4	46.913	12 16.8	7.8	1.6	22 6 23.22	24 44 46.2
14	8	..	..	11.5	..	..	..	..	11 11.51	17.19	1.42	III.	4	41.590	17 51.2	7.2	2.2	11 30.22	50 20.6
15	.	..	..	..	33.0	..	..	..	17 33 .	17.15	. .	.	.	. .	. . .	. .	. .	17 (52)	
16	8	29.7	..	3.5	..	..	..	..	20 20.50	17.14	1.39	III.	4	38.313	21 17.0	6.2	2.5	20 39.03	53 45.7
17	8	..	..	..	17.0	..	..	..	21 16.96	17.13	1.65	IV.	4	54.200	4 40.2	6.1	1.0	21 35.74	37 7.3
18	7	..	..	..	..	30.0	..	4.0	22 13.03	17.12	1.35	V.	3	36.115	23 36.3	6.0	2.7	22 31.50	24 56 5.0
19	8	44.5	..	..	35.0	..	..	..	25 35.24	17.11	1.19	IV.	3	26.600	33 33.4	5.7	3.7	25 53.54	25 6 2.8
20	6	..	28.0	45.0	2.2	..	..	..	22 27 2.06	+17.10	+1.51	IV.	4	45.820	−13 25.4	− 5.5	− 1.7	22 27 20.67	−24 45 52.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(42) 60. Transit over T. II rejected.

Aug. 11. $19^h 50^m$, interrupted by clouds; $21^h 23^m$, resumed sweep; wind fresh; the appearance of the stars indicate thin clouds, though none are visible; moon bright.

(43) 14. Transit over T. IV. assumed as recorded over T. III.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 43	Aug. 11, 21 20	63 54 65.3	64.0	78.0	67.0	55.7	45.0	62.50	30.118	74.0	71.5	..	..	74.0
	22 6	..	..	..	..	..	..	..	30.116	73.8	69.8			
	22 27	..	..	..	..	..	..	..	30.120	74.0	69.0			

ZONE 44. AUGUST 12. C. $D_0 = -30° 48' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	28.2	46.5	4.0	22.5	40.2	. .	17 22 4.29	+18.84	+1.78	IV.	3	23.573	−36 43.3	−59.4	− 5.7	17 22 24.91	−31 25 48.4
2	8	. .	. .	44.5	2.1	20.5	. .	. .	34 2.57	18.81	1.67	IV.	3	36.581	23 7.1	56.4	3.7	34 23.05	12 7.2
3	7.8	. .	. .	56.0	. .	32.2	49.5	. .	39 13.91	18.80	1.67	IV.	3	36.781	22 54.4	55.2	3.7	39 34.38	11 53.3
4	8	. .	. .	14.0	32.5	50.5	8.5	. .	41 32.38	18.79	1.73	IV.	3	27.238	32 53.4	54.6	5.1	41 52.80	21 53.1
5	7	. .	. .	. .	14.5	32.6	50.0	. .	42 14.39	18.79	1.70	IV.	3	31.989	27 55.2	54.4	4.4	42 34.88	16 54.0
6	8.7	. .	. .	. .	13.0	. .	. .	7.2	44 13.12	18.78	1.67	IV.	3	35.384	24 22.3	53.9	3.9	44 33.57	31 13 20.1
7	8.9	. .	54.2	12.1	30.5	48.0	6.0	. .	47 30.18	18.77	1.54	IV.	4	48.768	10 20.4	53.1	1.8	47 50.49	30 59 15.3
8	8.9	. .	. .	53.7	11.7	29.5	. .	. .	49 11.63	18.76	1.74	IV.	3	23.923	36 21.2	52.7	5.7	49 32.13	31 25 19.6
9	9	. .	. .	16.0	34.0	. .	. .	. .	50 34.00	18.76	1.58	IV.	5	43.551	15 49.8	52.4	2.7	50 54.34	31 4 44.9
10	8.9	. .	. .	. .	. .	48.0	. .	. .	52 45.03	18.75	1.52	V.	4	50.269	8 46.0	51.9	1.6	53 5.30	30 57 39.5
11	8.9	. .	. .	. .	. .	. .	. .	. .	52 . .	18.75	1.52	V.	4	50.269	8 46.1	51.8	1.6	53 . .	30 57 39.5
12	7	. .	. .	. .	. .	. .	. .	4.7	54 10.47	18.75	1.86	VII.	2	11.290	49 34.4	51.5	7.7	54 31.08	31 38 33.6
13	8	. .	. .	. .	4.5	23.2	. .	58.5	56 4.64	18.74	1.82	IV.	2	16.151	44 30.6	51.0	6.9	56 25.20	33 28.5
14	7.8	. .	. .	. .	0.7	18.2	. .	. .	58 0.46	18.73	1.53	IV.	4	47.259	11 55.3	50.6	2.1	58 20.72	0 48.0
15	8	. .	. .	. .	56.5	14.3	32.5	. .	17 58 56.47	18.73	1.61	IV.	3	38.061	21 34.2	50.3	3.5	17 59 16.81	10 28.0
16	8	. .	. .	. .	15.7	. .	52.5	. .	18 0 16.07	18.72	1.80	IV.	3	16.446	44 10.1	50.0	6.9	18 0 36.59	33 7.0
17	9	. .	. .	. .	. .	. .	28.5	. .	4 52.47	18.71	1.73	VI.	3	23.971	36 18.0	49.0	5.7	5 12.91	25 12.7
18	7.8	. .	. .	. .	. .	. .	51.5	. .	6 15.47	18.70	1.70	VI.	3	27.289	32 50.1	48.6	5.2	6 35.87	21 43.9
19	7.8	. .	. .	. .	. .	31.0	49.5	. .	7 12.22	18.70	1.68	V.	3	28.435	31 38.4	48.4	5.0	7 32.60	20 31.8
20	7	. .	47.5	5.7	23.5	41.7	. .	. .	10 23.62	18.69	1.70	IV.	3	26.601	33 33.3	47.7	5.3	10 44.01	22 26.3
21	7	. .	. .	57.7	16.0	33.5	. .	. .	11 15.73	18.68	1.51	IV.	4	47.939	11 12.4	47.5	2.0	11 35.92	0 1.9
22	6.7	. .	24.5	42.5	0.7	. .	37.0	. .	17 0.70	18.66	1.74	IV.	3	22.031	38 19.9	46.1	6.0	17 21.10	27 12.0
23	9	. .	. .	. .	. .	50.2	8.5	. .	17 32.23	18.66	1.82	V.	2	12.819	47 59.1	46.0	7.4	17 52.71	36 52.5
24	8	. .	42.5	. .	18.5	. .	. .	. .	20 18.50	18.64	1.53	IV.	4	44.846	14 26.6	45.4	2.4	20 38.67	31 3 14.4
25	8	. .	. .	. .	. .	54.2	. .	28.0	20 35.17	18.64	1.47	V.	4	52.559	6 22.2	45.3	1.3	20 55.28	30 55 8.8
26	9	. .	. .	. .	. .	. .	. .	9.5	21 15.50	18.64	1.62	VII.	3	34.751	25 1.5	45.1	4.0	21 35.76	31 13 50.6
27	9	. .	. .	4.5	22.0	. .	. .	. .	24 22.28	18.63	1.62	IV.	3	33.851	25 58.3	44.4	4.1	24 42.53	14 46.8
28	8	. .	. .	. .	. .	49.0	6.5	24.2	24 30.50	18.63	1.67	V.	3	26.802	33 20.6	44.4	5.2	24 50.80	22 10.2
29	8.9	. .	. .	15.5	34.0	. .	10.0	. .	28 33.84	18.61	1.73	IV.	3	20.605	39 49.3	43.4	6.2	28 54.18	28 38.9
30	8	. .	. .	27.5	45.2	. .	. .	. .	31 45.39	18.59	1.64	IV.	3	30.546	29 25.8	42.6	4.7	32 5.62	18 13.1
31	7.8	. .	. .	. .	. .	12.8	31.0	49.0	31 54.79	18.59	1.80	V.	2	12.857	47 56.7	42.6	7.4	32 15.18	36 46.7
32	8	. .	0.1	17.4	35.7	54.0	12.1	. .	34 35.86	18.58	1.76	IV.	2	16.780	43 51.0	42.0	6.8	34 56.20	32 39.8
33	9	. .	. .	. .	. .	34.5	. .	. .	37 18.52	18.58	1.49	V.	4	46.996	12 11.3	41.3	2.1	37 38.59	0 54.7
34	8.9	. .	22.5	40.7	58.0	16.5	. .	. .	40 58.43	18.55	1.55	IV.	3	40.539	18 58.7	40.4	3.1	41 18.53	7 42.2
35	9	. .	. .	. .	. .	. .	6.5	. .	41 30.61	18.55	1.50	V.	4	44.651	14 38.6	40.3	2.5	41 50.66	31 3 21.4
36	7	. .	. .	. .	. .	1.0	19.5	37.0	42 43.29	18.54	1.44	V.	4	53.202	5 41.9	40.0	1.2	43 3.27	30 54 23.1
37	9	. .	. .	22.0	39.5	. .	. .	. .	44 39.79	18.53	1.63	IV.	3	30.220	29 46.3	39.6	4.7	44 59.95	31 18 30.6
38	7	. .	32.5	50.5	8.7	. .	45.5	3.5	48 8.97	18.51	1.49	IV.	4	46.888	12 18.3	38.7	2.2	48 28.97	0 59.2
39	6	. .	47.0	5.0	. .	42.5	. .	18.0	48 23.62	18.51	1.58	IV.	3	34.849	24 55.7	38.7	4.0	48 43.71	13 38.4
40	8.9	. .	48.5	6.5	24.3	42.1	0.5	. .	52 24.40	18.50	1.53	IV.	3	39.521	20 2.6	37.7	3.3	52 44.43	8 43.6
41	6	33.0	50.7	8.7	27.0	45.0	2.8	21.0	54 26.88	18.49	1.60	IV.	3	32.885	26 58.9	37.1	4.3	54 46.97	15 40.3
42	8	. .	. .	. .	3.0	21.0	. .	. .	58 2.99	18.47	1.56	IV.	3	36.346	33 49.4	36.5	5.3	58 23.02	22 31.2
43	8	. .	. .	. .	44.0	. .	. .	28.0	58 44.02	18.47	1.56	IV.	3	36.399	23 18.6	36.2	3.8	59 4.05	11 58.6
44	8	. .	. .	. .	. .	. .	. .	30.0	18 58 35.96	18.47	1.61	VII.	3	29.252	30 46.7	36.2	4.8	18 58 56.04	19 27.7
45	8.9	. .	. .	. .	. .	35.7?	. .	13.0	19 3 18.35	18.44	1.54	V.	3	37.962	21 40.3	35.2	3.5	19 3 38.33	10 19.0
46	7	. .	. .	. .	. .	12.0	30.0	48.0	4 54.05	18.44	1.50	IV.	4	42.681	16 42.6	34.7	2.8	5 13.99	5 20.1
47	9	. .	. .	. .	. .	. .	14.5	. .	8 38.58	18.41	1.49	VI.	4	42.524	16 51.8	33.9	2.8	8 58.48	5 28.5
48	8.9	. .	. .	. .	6.6	. .	43.0	0.7	11 6.62	18.40	1.85	IV.	2	5.424	55 43.9	33.3	8.6	11 26.87	44 25.8
49	8.9	. .	37.0	. .	. .	. .	. .	. .	19 14 13.00	+18.38	+1.45	II.	4	45.806	−13 26.4	−32.6	− 2.3	19 17 32.83	−31 2 1.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 12,	20	+ 10.387	− 0.009	+ 0.294	+ 0.300	+ 0.230	0 0 2.45	30.002

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 44	Aug. 12,	17 20	70 9 60.3	61.0	71.8	61.0	51.6	43.9	58.27	30.098	79.5	76.5	79.1	78.5	
		18 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.2			
		18 17	. .	. .	. .	. .	. .	. .	. .	30.108	78.2	74.3			
		18 30	60.3	60.0	72.0	60.3	51.8	42.9	57.88	. .	. .	73.7	77.2	77.5	
		19 3	. .	. .	. .	. .	. .	. .	. .	30.100	77.2	73.2			
		19 30	59.6	60.2	72.1	61.1	51.6	42.9	57.92	. .	. .	73.0	76.7	76.7	
		20 0	60.0	60.3	72.1	60.9	51.8	42.4	57.92	30.094	76.8	72.5	76.1	76.5	77.7
		20 30	59.7	60.0	72.5	60.9	51.6	42.4	57.85	30.098	76.5	72.1	75.8	76.5	

REMARKS.

Aug. 12. Cloudy horizon except S. and SE.

(44) 10. Transit assumed as $45^s.0$ instead of $48^s.0$, and as over T. IV instead of T. V, as recorded, to agree with Transit Z., June 3, 1846, May 28, 1847; Mural Z., June 17, 1847.

(44) 33. Transit over T. V assumed as $36^s.5$, to accord with Mural Z., July 29, and Transit Z., June 3.

ZONE 44. AUGUST 12. C. $D_0 = -30° 48' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	. .	. .	. .	40.0	. .	16.0	. .	19 14 40.06	+18.38	+1.48	IV.	4	43.020	−16 21.3	−32.5	− 2.7	19 14 59.92	−31 4 56.5
51	8	. .	49.7	7.5	25.2	. .	1.5	. .	17 25.50	18.37	1.56	IV.	3	33.740	26 5.3	31.8	4.2	17 45.43	14 41.3
52	7	. .	11.6	29.5	47.5	5.7	23.5	. .	19 47.58	18.35	1.48	IV.	4	42.610	16 47.1	31.3	2.8	20 7.41	5 21.2
53	8	. .	. .	. .	21.5	39.7	. .	. .	22 21.59	18.33	1.62	IV.	3	25.656	34 32.6	30.7	5.4	22 41.54	23 8.7
54	6	. .	. .	. .	. .	. .	. .	29.0	22 35.00	18.33	1.51	VII.	3	37.410	22 14.7	30.7	3.6	22 54.84	10 49.0
55	6.7	. .	58.0	16.5	33.7	. .	10.5	. .	35 34.20	18.26	1.55	IV.	3	32.934	26 55.9	27.7	4.2	35 54.01	15 27.8
56	8	. .	12.7	. .	. .	6.5	. .	. .	35 48.59	18.25	1.48	IV.	3	39.738	19 48.9	27.6	3.2	36 8.32	8 19.7
57	8	. .	. .	22.7	41.3	. .	. .	36.0	40 41.35	18.23	1.54	IV.	3	32.999	26 51.8	26.5	4.3	41 1.12	15 22.6
58	8	. .	. .	38.5	56.2	. .	32.5	50.7	40 56.48	18.23	1.56	IV.	3	30.456	29 31.6	26.5	4.6	41 16.27	18 2.7
59	9	. .	. .	. .	1.0	19.0	. .	. .	43 1.00	18.21	1.55	IV.	3	31.235	28 42.6	26.1	4.5	43 20.76	17 13.2
60	9	. .	. .	25.5	. .	3.5	. .	41.5	45 45.44	18.19	1.65	IV.	2	20.000	40 29.2	25.4	6.3	46 5.28	31 29 0.9
61	7	. .	. .	. .	. .	20.5	38.7	56.3	47 2.59	18.18	1.38	V.	4	49.786	9 16.1	25.2	1.7	47 22.15	30 57 43.0
62	7	. .	33.6	51.8	9.5	28.0	46.0	. .	49 9.80	18.17	1.37	IV.	4	51.319	7 40.5	24.7	1.4	49 29.34	30 56 6.6
63	8.9	. .	55.5	13.7	31.5	49.5	. .	. .	54 31.55	18.13	1.46	IV.	3	40.050	19 29.3	23.6	3.2	54 51.14	31 7 56.1
64	8.9	. .	. .	3.5	21.2	39.5	57.3	. .	56 21.39	18.12	1.50	IV.	3	34.602	25 11.3	23.2	4.0	56 41.01	13 38.5
65	8.9	. .	7.3	25.1	42.8	. .	19.0	. .	19 58 43.07	18.11	1.38	IV.	4	47.527	11 38.4	22.7	2.0	19 59 2.56	0 3.1
66	9	. .	51.5	9.2	. .	. .	3.5	. .	20 0 27.43	18.10	1.68	IV.	2	13.528	47 15.0	22.3	7.3	20 0 47.21	35 44.6
67	9	. .	. .	. .	. .	. .	. .	. .	32 . .	17.87	1.40	.	.	42 .	17 . .	. .	. .	32 . .	5
68	7	. .	. .	. .	52.5	. .	28.6	46.1	35 52.06	17.85	1.35	IV.	4	46.512	12 42.1	15.1	2.2	36 11.26	0 59.4
69	8.9	. .	8.0	26.0	44.0	2.0	. .	. .	42 43.74	17.80	1.47	IV.	3	32.892	26 58.5	13.8	4.3	43 3.21	15 16.6
70	7	. .	19.2	37.0	55.0	12.9	31.0	. .	43 55.03	17.79	1.48	IV.	3	31.466	28 28.2	13.6	4.5	44 14.30	16 46.3
71	8.9	. .	32.5	50.5	9.2	26.7	44.6	. .	46 8.71	17.77	1.56	IV.	3	21.018	39 23.4	13.2	6.1	46 28.04	27 42.7
72	8	. .	22.7	40.6	58.2	16.5	34.5	. .	49 58.52	17.75	1.38	IV.	4	42.411	16 59.7	12.4	2.8	50 17.65	5 14.9
73	9	. .	. .	54.0	. .	31.2	58.5	. .	53 12.54	17.73	1.51	IV.	3	26.381	33 47.2	11.8	5.3	53 31.78	22 4.3
74	7	. .	41.0	58.3	17.0	35.2	53.0	. .	20 58 16.90	17.69	1.64	IV.	2	9.671	51 16.4	10.9	8.0	20 58 36.23	39 35.3
75	7.8	. .	9.1	27.3	45.0	. .	11.6	. .	21 2 45.27	17.67	1.41	IV.	3	36.072	23 39.0	10.1	3.8	21 3 4.35	11 52.9
76	8	. .	33.6	. .	9.5	27.7	. .	. .	5 9.61	17.64	1.49	IV.	3	26.119	34 3.6	9.7	5.3	5 28.74	22 18.6
77	8	. .	. .	. .	. .	58.6	16.3	34.3	5 40.26	17.64	1.61	V.	2	13.156	47 38.1	9.6	7.4	5 59.51	35 55.1
78	7	. .	29.0	47.0	4.8	22.8	41.1	. .	8 4.95	17.62	1.48	IV.	3	26.298	33 52.4	9.2	5.3	8 24.05	22 6.9
79	8.9	. .	20.7	38.5	. .	. .	. .	. .	11 56.67	17.59	1.54	III.	3	20.402	40 2.1	8.6	6.2	12 15.80	28 16.9
80	9	. .	. .	. .	32.5	. .	9.5	. .	11 32.96	17.59	1.60	V.	2	13.821	46 56.4	8.6	7.3	11 52.15	35 12.3
81	8	. .	. .	. .	37.8	. .	13.5	31.5	11 37.52	17.59	1.57	IV.	3	16.621	43 59.1	8.6	6.9	11 56.68	32 14.6
82	8	. .	. .	. .	43.5	1.8	20.0	. .	13 43.73	17.58	1.53	IV.	3	21.465	38 55.5	8.3	6.1	14 2.84	27 9.9
83	8	. .	. .	7.6	25.0	43.0	1.3	. .	17 25.25	17.55	1.36	IV.	4	39.768	19 45.4	7.7	3.2	17 44.16	7 56.3
84	8	. .	. .	. .	. .	30.5	49.0	6.8	18 12.67	17.54	1.54	V.	3	19.132	41 21.7	7.6	6.4	18 31.75	29 35.7
85	8	. .	33.5	51.5	9.4	27.6	. .	. .	20 9.50	17.53	1.33	IV.	3	43.772	15 35.5	7.3	2.7	20 28.36	3 45.5
86	8	. .	. .	16.0	34.0	52.2	. .	. .	27 34.07	17.47	1.48	IV.	3	24.915	35 19.0	6.1	5.5	27 53.02	23 30.6
87	8.9	. .	. .	. .	. .	31.2	. .	. .	28 13.13	17.46	1.50	V.	3	22.701	37 37.8	6.0	5.9	28 32.09	31 25 49.7
88	7.8	. .	. .	52.0	10.0	. .	45.7	. .	30 9.93	17.45	1.26	IV.	4	48.578	10 32.4	5.7	1.8	30 28.64	30 58 39.9
89	5.6	42.2	0.6	18.5	36.4	54.7	12.6	30.5	21 38 36.51	+17.38	+1.57	IV.	2	13.586	−47 11.4	− 4.5	− 7.3	21 38 55.46	−31 35 23.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 44	Aug. 12,	20 58	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.1			
		21 30	70 9 59.5	60.0	71.9	61.2	51.8	42.1	57.78	30.088	76.0	71.5	75.2	75.6	77.4

ZONE 45. AUGUST 13. P. $D_0 = -27° \; 3' \; 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	. .	50.3	7.7	. .	. .	. .	17 53 7.71	+18.18	+2.07	IV.	2	15.820	−44 51.2	−32.1	− 4.9	17 53 27.96	−27 48 28.2
2	8	. .	. .	21.0	38.0	. .	. .	. .	54 38.19	18.18	1.78	IV.	4	39.862	19 39.5	31.8	2.1	54 58.15	23 13.4
3	8	. .	. .	. .	17.0	34.0	. .	. .	55 34.21	18.17	2.08	IV.	2	14.160	46 35.4	31.6	5.1	55 54.46	50 12.1
4	7	. .	. .	11.0	. .	45.5	. .	. .	56 28.24	18.17	1.85	V.	3	33.600	26 14.2	31.3	2.8	56 48.26	29 48.3
5	8	48.0	5.0	. .	. .	. .	. .	. .	58 40.17	18.16	1.95	II.	3	24.325	35 55.8	30.7	3.9	59 0.28	39 30.4
6	8	. .	. .	. .	48.0	. .	. .	. .	58 48.03	18.16	2.17	IV.	2	6.760	49 6.4	30.7	5.3	59 8.36	52 42.4
7	7	. .	. .	. .	. .	25.0	. .	. .	59 7.55	18.16	2.04	V.	2	16.240	44 24.9	30.6	4.8	59 27.75	48 0.3
8	8	. .	. .	. .	. .	. .	5.0	. .	17 59 30.26	18.16	2.00	VI.	2	19.020	41 30.3	30.5	4.5	17 59 50.42	45 5.3
9	9	. .	. .	18.0	35.0	. .	. .	. .	18 3 35.15	18.14	1.62	IV.	4	47.875	11 16.4	29.5	1.2	18 3 54.91	14 47.1
10	7	. .	. .	8.5	25.7	. .	. .	. .	4 25.81	18.14	1.84	IV.	3	31.293	28 39.0	29.3	3.1	4 45.79	32 11.4
11	7	46.5	3.7	21.0	. .	. .	. .	. .	6 38.41	18.13	1.77	III.	3	35.893	23 50.1	28.8	2.5	6 58.31	27 21.4
12	7	. .	. .	. .	11.5	. .	. .	. .	6 11.54	18.13	1.97	IV.	2	18.736	41 48.5	28.9	4.5	6 31.64	45 21.9
13	8	. .	. .	49.0	. .	. .	. .	. .	8 49.00	18.12	2.08	III.	1	9.730	51 9.6	28.4	5.6	8 9.20	54 43.6
14	8	. .	. .	. .	. .	. .	42.0	. .	8 7.38	18.12	1.72	VI.	4	38.893	20 39.7	28.4	2.2	8 27.22	24 10.3
15	9	. .	. .	. .	58.0	. .	. .	. .	9 58.05	18.12	1.83	IV.	3	29.935	30 4.0	28.0	3.2	10 18.00	33 35.2
16	7	. .	. .	. .	36.5	. .	11.0	. .	10 36.44	18.12	1.76	IV.	3	35.420	24 20.1	27.8	2.6	10 56.32	27 50.5
17	8	49.3	6.3	24.0	41.3	. .	. .	. .	13 41.26	18.10	1.82	IV.	3	29.300	30 44.1	27.0	3.3	14 1.18	34 14.4
18	8	. .	. .	. .	. .	50.0	. .	. .	22 32.66	18.06	1.60	V.	4	43.495	15 51.2	24.9	1.7	22 52.32	19 17.8
19	7	. .	15.3	32.5	. .	. .	. .	. .	25 49.92	18.05	1.68	IV.	3	35.900	23 49.7	24.0	2.6	26 9.65	27 16.3
20	9	. .	. .	. .	. .	. .	59.0	. .	26 24.40	18.05	1.57	VI.	4	44.437	14 51.8	23.9	1.6	26 44.02	18 17.3
21	9	. .	. .	. .	50.0	. .	. .	. .	30 50.05	18.03	1.80	IV.	3	23.467	36 49.9	22.8	4.0	31 9.88	40 16.7
22	8	. .	. .	. .	4.0	. .	. .	. .	32 4.05	18.02	1.72	IV.	3	28.713	31 20.8	22.5	3.3	32 23.79	34 46.6
23	9	. .	. .	. .	. .	28.0	. .	. .	33 10.04	18.02	1.86	V.	2	16.845	43 46.8	22.2	4.7	33 29.92	47 13.7
24	4	5.5	23.0	40.0	. .	. .	. .	. .	35 57.47	18.01	1.41	III.	4	53.917	4 57.3	21.5	0.5	36 16.89	8 19.3
25	7	. .	. .	. .	. .	37.0	. .	. .	36 19.59	18.00	1.75	V.	3	24.593	35 39.3	21.4	3.8	36 39.34	39 4.5
26	8	. .	. .	56.0	. .	30.3	. .	. .	38 13.15	17.99	1.45	V.	4	47.950	11 11.4	21.0	1.2	38 32.59	14 33.6
27	8	. .	. .	38.0	55.0	. .	. .	. .	39 55.17	17.99	1.48	IV.	4	45.360	13 54.5	20.5	1.5	40 14.64	17 16.5
28	7	53.0	10.0	27.3	45.0	. .	. .	. .	41 44.82	17.98	1.51	IV.	4	42.800	16 35.0	20.1	1.8	42 4.31	19 56.9
29	8	. .	49.0	6.3	24.0	. .	. .	. .	43 23.86	17.97	1.92	IV.	1	8.400	52 33.2	19.7	5.7	43 43.75	55 58.6
30	9	. .	. .	. .	. .	21.0	. .	. .	47 3.63	17.95	1.55	V.	3	36.943	22 44.3	18.8	2.4	47 23.13	25 5.5
31	9	. .	. .	. .	. .	. .	21.0	38.5	47 46.34	17.95	1.69	VI.	3	24.880	35 21.0	18.6	3.8	48 5.98	38 43.4
32	9	. .	. .	. .	. .	. .	. .	29.0	49 36.97	17.94	1.50	VII.	4	40.345	19 8.1	18.2	2.0	49 56.41	22 28.3
33	9	. .	. .	2.0	. .	. .	. .	. .	53 19.37	17.92	1.60	III.	3	29.520	30 30.1	17.2	3.3	53 38.89	33 50.6
34	7.8	46.5	4.0	21.0	38.5	. .	. .	. .	56 38.54	17.90	1.57	IV.	3	32.650	27 13.8	16.4	2.9	56 58.01	30 33.1
35	3.4	. .	. .	. .	. .	. .	50.0	7.0	18 57 14.98	17.90	1.82	VI.	2	11.157	49 43.1	16.3	5.4	18 57 34.70	53 4.8
36	7	. .	. .	47.0	4.0	. .	. .	. .	19 0 4.19	17.89	1.42	IV.	4	41.852	17 34.5	15.6	1.9	19 0 23.50	20 52.0
37	9	. .	. .	36.0	. .	10.5	. .	. .	1 53.25	17.88	1.38	III.	4	43.670	15 40.6	15.1	1.6	2 12.51	18 57.3
38	8	. .	. .	41.0	58.0	. .	. .	. .	3 58.21	17.87	1.61	IV.	3	25.000	35 13.7	14.6	3.8	4 17.69	38 32.1
39	8	. .	. .	. .	49.0	. .	. .	. .	4 49.05	17.86	1.60	IV.	3	25.707	34 29.3	14.4	3.7	5 8.51	37 47.4
40	8	. .	. .	. .	. .	. .	34.5	52.0	4 59.87	17.86	1.56	VI.	3	29.042	31 0.0	14.4	3.3	5 19.29	34 17.7
41	8	. .	27.0	44.0	. .	. .	. .	. .	8 1.54	17.84	1.51	III.	3	32.270	27 37.6	13.6	3.0	8 20.89	30 54.2
42	9	. .	. .	. .	. .	. .	24.0	. .	13 49.28	17.82	1.56	VI.	2	24.725	35 32.6	12.3	3.8	14 8.66	38 48.7
43	8	20.0	38.0	. .	. .	. .	. .	. .	20 12.45	17.78	1.58	II.	2	19.460	41 3.1	10.7	4.4	20 31.81	44 18.2
44	8	. .	. .	6.5	. .	. .	. .	. .	20 23.87	17.78	1.52	III.	2	24.420	35 52.2	10.7	3.8	20 43.17	39 6.7
45	5	. .	. .	. .	. .	. .	50.0	7.3	20 15.35	17.78	1.28	VI.	4	45.195	14 4.1	10.7	1.5	20 34.41	17 16.3
46	8	35.0	52.0	8.5	. .	. .	. .	. .	23 26.50	17.76	1.35	III.	3	36.995	22 40.9	10.0	2.4	23 45.61	25 53.3
47	8	14.5	32.0	. .	. .	. .	. .	. .	25 49.28	17.75	1.38	III.	3	34.763	25 1.0	9.5	2.7	25 8.41	28 13.2
48	9	. .	. .	. .	. .	14.0	31.0	. .	24 56.47	17.75	1.39	V.	3	34.260	25 32.9	9.6	2.7	25 15.61	28 45.2
49	9	. .	. .	3.0	. .	. .	. .	. .	19 27 20.38	+17.74	+1.62	III.	1	14.280	−46 25.0	− 9.0	− 5.0	19 27 39.74	−27 49 39.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 13,	20	+ 10.132	− 0.012	+ 0.294	+ 0.300	+ 0.230		

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 45	Aug. 13, 17 50	66 24 67.3	62.6	78.8	64.2	56.6	48.5	63.00	29.994	82.5	79.0			
	17 59	. .	. .	. .	. .	. .	. .	. .	29.990	82.0	78.8			
	18 43	. .	. .	. .	. .	. .	. .	. .	30.000	81.0	77.5			
	19 45	. .	. .	. .	. .	. .	. .	. .	29.996	80.0	77.0			
	19 50	66.5	62.6	78.7	64.2	56.7	46.7	62.57	. .	. .	. .	78.5	. .	79.5

REMARKS.

(45) 3. Transits over T.'s III and IV assumed as recorded over T.'s IV and V.

(45) 6. Micrometer reading assumed as $4^r.760$ instead of $6^r.760$.

(45) 13. Transits over T. IV assumed as recorded over T. III, and minutes as 7 instead of 8.

(45) 47. Transits over T.'s II and III assumed as recorded over T.'s I and II, and minutes as 24, not 25.

ZONE 45. AUGUST 13. P. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	28.0	45.5	3.0	20.0	. .	. .	. .	19 29 20.20	+17.73	+1.55	IV.	2	21.346	−39 5.0	− 8.5	− 4.2	19 39 29.48	−27 42 17.7
51	9	. .	. .	. .	56.0	. .	30.0	. .	30 55.66	17.72	1.48	VI.	3	25.203	35 0.9	8.1	3.8	31 14.86	38 12.8
52	9	. .	45.0	. .	19.3	. .	. .	. .	35 19.49	17.69	1.12	IV.	4	52.510	6 25.6	7.1	0.7	35 38.30	9 33.4
53	8	. .	. .	. .	. .	. .	15.0	. .	35 40.26	17.69	1.53	VI.	2	18.620	41 55.4	7.1	4.5	35 59.48	45 7.0
54	7	. .	. .	. .	. .	2.0	19.0	. .	36 44.44	17.69	1.44	V.	3	25.765	34 25.7	6.8	3.7	37 3.57	37 36.2
55	7	. .	16.0	33.0	. .	. .	. .	. .	40 50.51	17.67	1.05	III.	4	56.587	2 10.6	5.8	0.2	41 9.23	5 16.6
56	7	. .	33.0	50.0	. .	. .	. .	. .	42 7.52	17.65	1.29	III.	3	35.400	24 21.2	5.5	2.6	42 26.46	27 29.3
57	7	. .	. .	. .	. .	. .	. .	28.0	41 35.81	17.66	1.57	VII.	1	13.110	47 37.5	5.7	5.2	41 55.04	50 48.4
58	8	. .	. .	36.0	. .	. .	28.0	. .	43 53.36	17.65	1.19	VI.	2	42.987	16 22.7	5.1	1.8	44 12.20	19 29.6
59	9	. .	. .	. .	35.0	. .	. .	. .	45 35.04	17.63	1.30	IV.	3	33.235	26 37.1	4.7	2.9	45 53.97	29 44.7
60	4.5	. .	50.0	7.7	25.0	. .	. .	. .	19 47 24.94	+17.62	+1.33	IV.	3	29.390	−30 38.5	− 4.3	− 3.3	19 47 43.89	−27 33 46.1

ZONE 46. AUGUST 13. P. $D_0 = -23° 17' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	. .	59.0	16.0	20 3 25.43	+17.26	+1.51	VII.	3	24.913	−35 18.8	−37.2	+ 3.0	20 3 44.20	−23 52 59.0
2	7	7.0	25.0	. .	. .	14.0	. .	. .	6 57.77	17.24	1.47	VI.	3	20.280	40 9.7	36.4	3.5	7 16.48	57 49.6
3	7	27.0	. .	1.0	. .	. .	. .	. .	12 17.66	17.21	1.49	III.	2	21.260	39 10.3	35.2	3.4	12 36.36	56 48.9
4	7	17.0	34.0	. .	7.7	. .	. .	. .	15 7.64	17.19	1.50	IV.	2	20.865	39 34.9	34.6	3.4	15 26.33	57 12.9
5	9	8.5	25.3	42.3	58.7	. .	. .	. .	17 58.88	17.18	1.70	IV.	4	46.550	12 39.7	34.0	1.0	19 17.76	30 14.7
6	6	. .	. .	12.0	29.0	. .	. .	. .	20 28.88	17.16	1.78	IV.	4	55.950	2 50.4	33.4	0.2	20 47.82	20 24.0
7	8	. .	25.0	41.7	58.5	. .	. .	. .	24 58.57	17.14	1.60	IV.	3	32.055	27 51.1	32.5	2.4	25 17.31	45 26.0
8	9	. .	. .	. .	18.5	. .	. .	. .	26 18.54	17.14	1.50	IV.	2	20.420	40 3.0	32.2	3.5	26 37.18	57 38.7
9	8	. .	21.0	38.0	. .	. .	. .	. .	30 54.72	17.12	1.70	III.	4	43.525	15 49.8	31.3	1.3	31 13.54	33 22.4
10	7	55.0	11.5	28.3	. .	. .	. .	. .	32 45.19	17.10	1.65	III.	3	37.200	22 28.2	30.9	1.9	33 3.94	40 1.0
11	8	. .	. .	. .	. .	. .	38.0	. .	33 4.47	17.10	1.72	VI.	4	44.916	14 21.6	30.8	1.2	33 23.29	23 31 53.6
12	8	. .	. .	. .	. .	. .	5.0	22.3	34 31.54	17.09	1.50	VI.	2	17.837	42 44.5	30.5	3.7	34 50.13	24 0 18.7
13	8	. .	. .	. .	. .	. .	6.0	. .	35 32.41	17.09	1.63	VI.	3	33.850	25 58.3	30.3	2.2	35 51.13	23 43 30.8
14	8	52.0	9.0	26.0	. .	. .	. .	. .	38 43.69	17.07	1.49	III.	2	16.940	43 41.0	29.7	3.8	39 2.25	24 1 14.5
15	8	. .	45.3	. .	. .	. .	. .	. .	46 2.10	17.03	1.80	III.	4	51.460	7 31.7	28.2	0.6	46 20.93	23 25 0.5
16	7	. .	17.0	33.0	. .	. .	. .	. .	57 50.23	16.96	1.63	III.	3	28.757	31 17.9	26.0	2.7	58 8.82	48 46.6
17	7	11.0	. .	45.0	. .	19.0	. .	. .	20 58 1.79	16.96	1.66	V.	3	32.513	27 22.4	26.0	2.3	20 58 20.41	44 50.7
18	8	49.0	6.0	23.0	39.7	. .	. .	. .	21 1 39.68	16.94	1.58	IV.	3	22.960	37 24.3	25.3	3.2	21 1 58.20	54 52.8
19	6	. .	52.1	10.5	27.5	. .	. .	. .	4 26.83	16.92	1.84	IV.	4	53.835	5 2.3	24.8	0.4	4 45.59	22 27.5
20	8	. .	. .	. .	34.0	. .	. .	. .	5 34.01	16.92	1.78	IV.	4	47.003	12 11.2	24.6	1.0	5 52.71	29 36.8
21	6	23.3	40.0	57.0	. .	. .	. .	. .	15 13.65	16.86	1.84	III.	4	53.150	5 45.6	22.9	0.4	15 32.35	23 8.9
22	7	. .	. .	. .	. .	44.0	59.0	. .	15 26.24	16.86	1.60	V.	2	22.995	38 24.0	22.8	3.2	15 44.70	55 50.0
23	8	. .	26.0	. .	. .	. .	. .	. .	20 59.66	16.83	1.63	II.	2	23.995	36 18.6	21.9	3.1	22 18.12	53 43.6
24	8	31.0	48.0	5.0	. .	. .	. .	. .	23 21.61	16.81	1.71	III.	3	34.190	25 37.1	21.5	2.2	23 40.13	43 0.8
25	8	40.0	57.0	13.5	. .	. .	. .	. .	26 30.46	16.80	1.68	IV.	3	30.383	29 36.1	21.0	2.5	26 48.94	46 59.6
26	8	. .	33.0	. .	6.5	. .	. .	. .	29 6.57	16.78	1.71	IV.	3	33.023	26 50.3	20.6	2.3	29 25.06	44 13.2
27	9	. .	32.0	. .	6.0	. .	. .	. .	31 5.85	16.77	1.65	IV.	3	25.173	35 2.9	20.3	3.0	31 24.27	52 26.2
28	4	19.0	. .	52.5	9.5	. .	. .	. .	33 9.46	16.76	1.63	IV.	2	21.523	38 53.9	19.9	3.4	33 27.85	56 17.2
29	9	. .	. .	52.3	. .	26.3	. .	. .	34 9.28	16.75	1.67	V.	2	26.430	33 46.0	19.8	2.9	34 27.70	51 8.7
30	8	29.0	45.0	. .	20.0	. .	. .	. .	40 19.37	16.72	1.84	IV.	4	45.825	13 25.1	18.8	1.1	40 37.93	30 45.0
31	7	43.0	0.0	17.0	33.7	. .	. .	. .	42 33.69	16.71	1.63	IV.	2	19.920	40 34.2	18.5	3.5	42 52.03	23 57 56.2
32	8	. .	8.0	. .	41.0	. .	. .	. .	46 41.37	16.68	1.63	IV.	2	17.163	42 24.4	17.9	3.6	46 59.68	24 59 45.9
33	7	. .	. .	. .	. .	. .	. .	48.0	46 57.53	16.68	1.73	VII.	3	31.692	28 13.5	17.9	2.4	47 15.94	23 45 33.8
34	7	. .	. .	. .	27.0	. .	. .	. .	21 49 27.04	+16.67	+1.65	IV.	2	21.280	−39 9.1	−17.5	− 3.4	21 49 45.36	−23 50 30.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 46	Aug. 13, 20 0	62 39 61.5	58.7	71.3	59.0	50.0	42.3	57.13	29.996	80.0	76.7	. .	78.5	79.5
	20 57	. .	. .	. .	. .	. .	. .	. .	29.992	79.0	76.5			
	22 1	. .	. .	. .	. .	. .	. .	. .	29.980	78.5	75.3			

REMARKS.

(46) 5. Min. assumed as 18 instead of 17.
(46) 15. Transit over T. III assumed as recorded over T. I.
(46) 18. Micrometer reading assumed as $21^r.960$ instead of $22^r.960$.
(46) 22. Micrometer reading assumed as $21^r.995$ instead of $22^r.995$.
(46) 23. Min. assumed as 21 instead of 20.
(46) 32. Micrometer reading assumed as 18 instead of 17.

ZONE 46. AUGUST 13. P. $D_0 = -23° 17' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	7	. .	. .	. .	33.0	49.5	. .	. .	21 50 32.85	+16.66	+1.81	IV.	4	41.537	−17 54.5	−17.4	− 1.5	21 50 51.32	−24 35 13.4
36	7	. .	24.0	. .	57.0	. .	. .	. .	51 57.37	16.65	1.62	IV.	2	17.304	43 18.4	17.2	3.7	52 15.64	24 0 39.3
37	9	. .	. .	22.0	. .	. .	. .	. .	21 57 38.83	16.62	1.71	III.	3	27.710	32 23.6	16.4	2.8	21 57 57.16	23 49 42.8
38	9	. .	. .	. .	11.0	. .	. .	. .	22 1 11.04	+16.60	+1.75	IV.	3	31.363	−28 34.7	−15.9	− 2.4	22 1 29.39	−23 45 53.0

ZONE 47. AUGUST 18. C. $D_0 = -28° 17' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	28.1	45.7	3.5	21.1	38.6	. .	17 59 3.41	+16.15	+1.35	IV.	3	32.386	−27 30.5	−46.2	− 3.4	17 59 20.91	−28 46 10.1
2	6.7	. .	33.5	51.0	8.5	26.4	43.7	. .	18 2 8.62	16.14	1.16	IV.	3	23.289	37 1.1	45.5	4.5	18 2 25.92	55 41.1
3	8	. .	9.0	26.5	44.5	1.5	. .	. .	4 44.16	16.13	1.22	IV.	3	26.338	33 49.9	44.8	4.2	5 1.51	52 28.9
4	7.8	. .	. .	. .	25.1	43.5	0.5	. .	5 25.51	16.13	1.51	IV.	4	39.121	20 26.2	44.7	2.5	5 43.15	39 3.4
5	7	. .	0.7	18.7	35.5	53.5	10.6	. .	7 35.81	16.12	1.44	IV.	3	36.451	23 15.3	44.2	2.8	7 53.37	28 41 52.3
6	8	. .	. .	18.0	35.1	54.2	10.7	. .	10 35.68	16.10	0.89	IV.	2	11.049	49 50.1	43.5	6.1	10 52.67	29 8 29.7
7	6	. .	. .	55.5	12.8	30.4	47.9	. .	12 12.90	16.10	1.72	IV.	4	48.154	10 59.0	43.1	1.4	12 30.72	28 29 33.5
8	8.9	. .	. .	0.7	18.7	. .	53.5	. .	18 18.47	16.07	1.75	IV.	4	49.580	9 29.5	41.6	1.2	18 36.29	28 2.3
9	8	. .	. .	. .	. .	. .	15.7	32.5	18 40.17	16.07	1.23	VI.	3	26.738	33 24.5	41.6	4.1	18 57.47	52 0.2
10	7.8	. .	. .	25.5	42.5	0.6	18.0	. .	20 42.87	16.06	1.21	IV.	3	25.462	34 44.8	41.1	4.3	21 0.14	53 20.2
11	7.8	. .	. .	48.5	5.1	22.8	. .	. .	22 5.48	16.04	1.56	IV.	4	41.478	17 58.2	40.8	2.2	22 23.08	36 31.2
12	8	. .	. .	8.7	26.2	43.8	. .	. .	24 26.22	16.03	1.76	IV.	4	50.374	8 39.8	40.2	1.1	24 44.01	27 11.1
13	8	. .	. .	. .	52.0	8.3	. .	. .	25 51.37	16.02	1.78	IV.	4	51.231	7 46.0	39.8	1.0	26 9.17	26 16.8
14	6.7	. .	. .	58.7	16.3	34.4	51.5	. .	27 16.48	16.02	1.54	IV.	3	40.542	18 58.5	39.5	2.4	27 34.04	37 30.4
15	8.9	. .	53.0	. .	27.6	. .	2.0	. .	29 27.56	16.01	1.52	IV.	3	39.722	19 49.9	39.0	2.4	29 45.09	38 21.3
16	8	. .	44.7	2.2	19.7	. .	. .	. .	31 19.73	16.00	1.85	IV.	4	54.121	4 45.2	38.6	0.6	31 37.58	23 24.4
17	8	. .	. .	. .	. .	. .	5.5	. .	31 30.35	16.00	1.12	VI.	2	21.459	38 57.5	38.5	4.8	31 47.47	57 30.8
18	8	. .	59.0	16.2	33.0	51.3	. .	. .	34 33.65	15.98	1.58	IV.	3	42.574	16 50.9	37.9	2.1	34 51.21	35 20.9
19	8.9	. .	17.7	. .	. .	. .	. .	. .	35 52.87	15.98	1.16	II.	3	23.262	37 2.4	37.5	4.6	36 10.01	55 34.5
20	7.8	. .	17.0	. .	52.0	9.8	26.8	. .	37 52.04	15.97	1.79	IV.	4	51.353	7 38.3	37.1	1.0	38 9.80	26 6.4
21	7.8	. .	0.6	18.3	35.5	53.5	10.6	. .	40 35.71	15.95	1.35	IV.	3	31.995	27 54.8	36.4	3.4	40 53.01	46 24.6
22	8.9	. .	14.0	. .	48.5	7.0	. .	. .	44 49.03	15.93	1.21	IV.	3	25.630	34 34.2	35.4	4.3	45 6.17	53 3.9
23	9	. .	. .	10.5	29.7	. .	3.0	. .	48 28.56	15.91	1.13	IV.	3	22.071	38 17.4	34.6	4.7	48 45.60	56 46.7
24	9	. .	. .	. .	23.0	. .	. .	15.0	49 22.58	15.91	1.33	IV.	3	31.078	28 52.4	34.4	3.5	49 39.82	47 20.3
25	9	. .	. .	3.4	. .	38.5	. .	. .	51 20.93	15.89	1.18	IV.	3	23.913	36 21.8	33.9	4.5	51 38.00	54 50.2
26	8.9	. .	. .	. .	. .	. .	3.5	. .	52 28.37	15.89	1.25	VI.	3	27.320	32 48.2	33.6	4.0	52 45.51	51 15.8
27	8.9	. .	. .	29.5	47.0	. .	23.0	. .	52 47.33	15.89	1.25	IV.	3	27.620	32 29.4	33.6	4.0	53 4.47	50 57.0
28	6.7	. .	. .	28.6	46.3	4.1	21.5	. .	57 46.34	15.86	1.22	IV.	3	26.821	33 19.4	32.4	4.1	58 3.42	51 45.9
29	8.9	. .	. .	53.5	10.7	. .	46.6	. .	18 59 11.09	15.85	1.10	IV.	3	20.721	39 42.0	32.1	4.9	18 59 28.04	58 9.0
30	8.9	. .	53.2	11.0	28.5	. .	. .	. .	19 1 28.48	15.84	1.35	IV.	3	31.951	27 57.6	31.5	3.4	19 1 45.67	46 22.5
31	7.8	. .	. .	48.0	5.5	23.1	40.5	. .	7 5.49	15.80	1.16	IV.	3	23.182	37 7.8	30.2	4.6	7 22.45	55 32.6
32	8	. .	. .	. .	. .	28.5	. .	. .	9 10.96	15.80	1.59	IV.	4	47.746	11 24.5	29.7	1.4	9 28.35	29 45.6
33	8	. .	. .	. .	. .	. .	32.5	50.0	13 57.29	15.78	1.12	IV.	2	21.694	38 43.0	28.6	4.8	14 14.19	57 6.4
34	8	. .	. .	47.5	5.5	. .	. .	57.7	14 5.18	15.77	1.11	VI.	2	21.202	39 13.6	28.6	4.8	14 22.06	57 37.0
35	8	. .	. .	. .	. .	. .	. .	40.0?	14 51.26	15.77	1.19	VII.	2	24.622	35 38.6	28.5	4.4	15 0.22	54 1.5
36	8	. .	57.0	14.7	32.0	. .	. .	. .	21 32.13	15.72	1.52	IV.	3	39.361	20 12.7	26.9	2.5	21 49.37	38 32.1
37	7	. .	49.0	. .	. .	41.5	59.2	. .	22 24.08	15.72	1.66	IV.	2	46.172	13 6.9	26.7	1.6	22 41.46	31 25.2
38	8	. .	. .	. .	. .	52.0	. .	. .	22 34.42	15.72	1.46	V.	3	36.912	22 46.2	26.7	2.8	22 51.60	41 5.7
39	8	. .	. .	. .	. .	19.2	36.0	. .	24 1.24	15.71	1.25	V.	3	27.446	32 40.4	26.4	4.0	24 18.20	51 0.8
40	8	. .	48.0	6.0	23.0	41.0	. .	. .	26 23.29	15.69	1.07	IV.	3	19.272	41 13.0	25.8	5.1	26 40.05	28 59 33.9
41	8	. .	. .	28.0	45.8	4.0	21.0	. .	26 45.91	15.69	1.06	IV.	3	18.659	−41 51.3	−25.6	− 5.2	19 27 2.66	−29 0 12.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 18	20	+ 7.943	− 0.017	+ 0.294	+ 0.300	+ 0.230	0 0 2.22	30.016

REMARKS.

Aug. 18. 18h.20, clouds near horizon; 19h.1, clear.

(47) 35. Doubtless 4s in error; transit assumed at 44s.0.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 47	Aug. 18, 18 2	67 39 60.0	60.0	74.1	62.0	49.8	42.6	58.08	30.108	75.7	70.0	74.0	76.0	80.0
	18 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.5			
	18 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.8			
	19 1	60.2	60.2	75.2	62.0	51.0	42.4	58.50	30.126	74.1	68.4			
	19 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.0			
	19 43	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.0			
	20 1	59.8	60.9	75.2	62.5	51.7	42.1	58.70	30.130	73.8	67.2	72.8	73.7	
	20 18	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.1			

ZONE 47. AUGUST 18. C. $D_0 = -28° 17' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
42	7	. .	41.7	59.2	16.8	34.8	52.6	. .	19 29 17.02	+15.67	+1.13	IV.	3	22.188	−38 10.1	−25.2	− 4.7	19 29 33.82	−28 56 30.0
43	9	. .	. .	14.0	. .	49.0	. .	. .	33 31.47	15.65	1.07	IV.	3	19.059	41 26.2	24.3	5.1	33 48.19	59 45.6
44	6.7	. .	36.5	53.4	11.6	29.0	46.5	. .	38 11.41	15.62	1.24	IV.	3	27.118	33 0.9	23.2	4.1	38 28.27	28 51 18.2
45	9	. .	. .	. .	. .	. .	28.0	. .	38 52.82	15.62	0.99	VI.	2	15.332	45 21.6	23.1	5.6	39 9.43	29 3 40.3
46	7	. .	. .	. .	. .	. .	7.5	25.5	39 32.46	15.61	0.87	VI.	2	10.041	50 52.9	22.9	6.3	39 48.94	29 9 12.1
47	8.9	. .	14.7	32.2	50.0	. .	. .	. .	41 49.88	15.60	1.27	IV.	3	28.222	31 51.7	22.4	3.9	42 6.75	28 50 8.0
48	8	. .	. .	. .	14.5	32.0	. .	. .	42 14.45	15.59	1.14	IV.	3	22.611	37 43.5	22.4	4.6	42 31.18	56 0.5
49	8	. .	. .	. .	. .	40.0	57.1	. .	42 22.17	15.59	1.22	V.	3	25.926	34 15.5	22.3	4.2	42 38.98	52 32.0
50	9	. .	. .	. .	. .	. .	. .	3.4	43 10.82	15.59	1.66	VII.	4	46.147	13 3.7	22.2	1.6	43 28.07	31 17.5
51	9	. .	. .	6.5	. .	. .	. .	. .	48 24.08	15.55	1.08	III.	2	19.416	41 6.0	21.0	5.0	48 40.71	28 59 22.0
52	8.9	. .	. .	56.5	14.0	31.5	49.0	. .	49 13.94	15.55	1.00	IV.	2	15.829	44 50.7	20.8	5.5	49 30.49	29 3 7.0
53	7.8	. .	26.5	43.5	1.7	18.8	36.8	. .	51. 1.46	15.54	1.08	IV.	2	19.308	41 12.7	20.4	5.1	51 18.08	28 59 28.2
54	8	. .	. .	16.5	33.5	. .	9.0	. .	52 33.85	15.53	1.81	IV.	4	52.748	6 10.5	20.1	0.8	52 51.19	24 21.4
55	8	. .	. .	49.2	7.2	24.3	42.1	. .	57 6.93	15.49	1.32	IV.	3	30.484	29 29.8	19.1	3.6	19 57 23.74	47 42.5
56	7.8	. .	. .	29.0	46.1	4.0	21.8	. .	19 59 46.44	15.48	1.22	IV.	3	26.126	34 3.1	18.5	4.1	20 0 3.14	28 52 15.7
57	8.9	. .	19.5	. .	54.5	12.5	. .	. .	20 1 54.70	15.46	0.89	IV.	2	11.178	49 42.1	18.1	6.1	2 11.05	29 7 56.3
58	8.9	. .	. .	. .	. .	13.2	. .	. .	5 55.56	15.44	1.14	V.	3	22.622	37 42.8	17.2	4.6	6 12.14	28 55 54.6
59	9	. .	. .	. .	. .	. .	. .	20.0?	8 27.37	15.42	1.57	VII.	5	41.918	17 32.3	16.6	2.2	8 44.36	28 35 41.1
60	9	. .	. .	. .	50.5	. .	. .	. .	14 50 .	15.38	. .	.	.	. .	. . .	. .	. .	15 (6)	
61	6.7	. .	. .	. .	. .	. .	34.0	. .	15 58.79	15.37	0.88	VII.	2	10.342	50 33.8	15.1	6.2	16 15.04	29 8 45.1
62	8	. .	. .	11.7	28.9	46.9	4.3	. .	18 29.18	15.35	1.37	IV.	3	32.936	26 55.7	14.6	3.3	18 45.90	28 45 3.6
63	7.8	. .	. .	3.7	21.5	38.2	56.2	. .	22 21.15	15.32	1.53	IV.	4	43.071	16 18.1	13.8	2.0	22 38.00	28 34 23.9
64	8.9	. .	. .	. .	16.0	. .	51.5	. .	23 16.18	15.31	0.93	IV.	2	13.056	47 44.5	13.6	5.9	23 32.42	29 5 54.0
65	8	. .	3.3	20.7	38.5	56.1	13.6	. .	29 38.44	15.26	1.12	IV.	3	21.649	38 43.9	12.4	4.7	29 54.82	28 56 51.0
66	7	. .	53.7	11.2	28.5	46.6	4.2	. .	31 28.84	15.25	0.97	IV.	2	14.296	46 27.0	12.0	5.7	31 45.06	29 4 34.7
67	8	. .	. .	. .	. .	29.0	46.6	4.5	32 11.65	15.24	1.56	V.	4	45.942	13 17.5	11.9	1.6	32 28.45	28 31 21.0
68	8	. .	59.7	16.7	34.5	. .	. .	. .	34 34.50	15.23	1.76	IV.	4	50.098	8 57.0	11.4	1.1	34 51.49	26 59.5
69	7.8	. .	. .	. .	13.6	31.3	48.8	. .	35 13.69	15.22	1.38	IV.	3	33.461	26 23.0	11.3	3.2	35 30.29	44 27.5
70	8	. .	. .	50.0	. .	. .	42.5	. .	40 7.47	15.19	1.19	IV.	3	24.411	35 50.8	10.4	4.4	40 23.85	53 55.6
71	6.7	. .	42.5	59.7	17.6	35.0	52.5	. .	42 17.48	15.17	1.62	IV.	4	44.248	15 4.3	9.9	1.9	42 34.27	33 6.1
72	8.9	. .	26.0	44.2	1.5	. .	. .	. .	44 1.46	15.16	1.58	IV.	4	42.341	17 4.1	9.6	2.1	44 18.20	35 5.8
73	7.8	. .	43.5	. .	. .	36.1	53.5	. .	45 18.55	15.15	1.59	IV.	4	47.472	11 41.9	9.4	1.5	45 35.29	29 42.8
74	7	. .	. .	. .	49.5	7.2	24.5	. .	44 49.55	15.15	1.60	IV.	4	47.882	11 15.9	9.5	1.4	45 6.30	29 16.8
75	9	. .	28.0	46.0	3.7	. .	. .	. .	48 3.49	15.13	1.16	IV.	3	23.545	36 45.0	8.9	4.5	48 19.78	54 48.4
76	8	. .	. .	1.5	18.3	. .	. .	10.5	52 18.43	15.10	1.83	IV.	4	53.649	5 14.0	8.2	0.7	20 52 35.36	28 23 12.9
77	7	. .	9.2	26.1	44.0	1.7	19.7	. .	20 59 47.17	15.04	0.96	IV.	2	14.285	46 27.6	6.9	5.7	21 0 0.17	29 4 30.2
78	8	. .	. .	58.3	. .	33.5	51.0	. .	21 1 15.84	15.03	0.94	IV.	2	13.008	47 47.4	6.6	5.9	1 31.81	29 5 49.9
79	8	. .	31.5	48.7	. .	23.5	41.2	. .	21 3 6.25	+15.02	+1.57	IV.	4	46.299	−12 55.5	− 6.3	− 1.6	21 3 22.84	−28 30 53.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 47	Aug. 18, 21 0	67 39 59.7	61.8	75.1	62.7	52.0	42.0	58.88	30.138	72.0	66.5	72.6	73.6	79.3

ZONE 48. AUGUST 20. P. $D_0 = -37° 4' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	53.0	. .	. .	. .	. .	18 3 12.37	+16.25	+1.24	III.	4	47.280	−11 54.0	−22.9	− 2.6	18 3 29.86	−37 16 59.5
2	8	. .	. .	. .	37.0	. .	15.5	. .	3 36.85	16.25	0.99	IV.	3	26.083	34 5.8	22.8	8.9	3 54.09	39 17.5
3	9	. .	. .	. .	. .	. .	33.0	. .	3 54.14	16.24	0.97	VI.	3	24.373	35 52.9	22.8	9.4	4 11.35	41 5.1
4	8	10.3	30.0	49.3	8.5	. .	. .	. .	10 8.53	16.21	1.26	IV.	4	47.865	11 17.0	21.3	2.3	10 26.00	16 20.6
5	7	25.0	44.3	4.0	23.3	. .	. .	. .	10 23.27	16.21	1.07	IV.	3	32.295	27 36.2	21.2	7.0	10 40.55	32 44.4
6	9	. .	. .	. .	57.0	. .	. .	55.0	10 56.96	16.21	1.24	IV.	4	45.883	13 21.4	21.1	2.9	11 14.41	18 25.4
7	8	2.5	21.7	41.0	0.5	. .	. .	. .	14 0.21	16.19	1.24	IV.	4	46.437	12 46.9	20.3	2.8	14 17.64	17 50.0
8	8	. .	. .	42.0	. .	20.5	. .	. .	15 1.24	16.18	1.30	V.	4	50.633	8 23.1	20.1	1.6	15 18.72	13 24.8
9	8	38.0	57.0	16.7	36.0	. .	. .	. .	18 35.98	16.17	1.19	IV.	4	41.283	18 10.5	19.2	4.3	18 53.34	23 14.0
10	9	. .	. .	42.0	. .	. .	. .	. .	20 1.44	16.16	1.02	III.	3	26.735	33 24.6	18.9	8.7	20 18.62	38 22.2
11	7	. .	. .	33.0	52.0	11.5	. .	. .	20 52.17	16.16	0.99	IV.	3	24.117	36 9.1	18.7	9.5	21 9.32	41 17.3
12	8	52.0	11.0	31.0	. .	. .	. .	. .	22 50.07	16.15	1.17	III.	4	38.955	20 36.6	18.2	5.0	23 7.39	25 39.8
13	9	10.0	30.0	. .	. .	. .	. .	. .	26 8.66	16.13	0.94	II.	2	19.166	41 21.3	17.4	11.1	26 25.73	46 29.8
14	8	. .	. .	. .	26.0	46.0	. .	. .	26 26.30	16.13	1.11	IV.	3	33.120	46 44.3	17.4	6.7	26 43.54	31 48.4
15	8	. .	. .	33.0	52.5	. .	. .	. .	28 52.46	16.12	1.19	IV.	3	39.875	19 40.2	16.8	4.7	29 9.77	24 41.7
16	9	. .	. .	. .	. .	. .	. .	33.0	29 34.68	16.11	1.03	VII.	3	27.250	32 52.5	16.6	8.5	29 51.82	37 57.6
17	8	50.5	10.0	29.5	49.0	. .	. .	. .	36 48.93	16.07	0.99	IV.	3	23.330	36 58.6	14.9	9.7	37 5.99	42 3.2
18	7	. .	. .	34.0	54.0	13.0	. .	. .	37 53.63	16.07	1.36	IV.	4	53.653	5 13.8	14.7	0.7	38 11.06	10 9.2
19	9	. .	. .	. .	. .	30.0	. .	. .	39 10.57	16.06	1.15	V.	3	36.343	23 22.1	14.4	5.8	39 27.78	28 22.3
20	8	. .	. .	18.0	. .	57.0	. .	. .	40 37.50	16.05	1.20	III.	4	39.617	19 55.1	14.0	4.8	40 54.75	24 53.9
21	8	. .	17.3	37.3	57.0	. .	. .	. .	42 56.61	16.04	1.18	IV.	3	37.723	21 55.3	13.5	5.4	43 13.83	26 54.2
22	7	57.0	. .	36.0	. .	. .	. .	. .	44 55.31	16.03	1.09	III.	3	30.853	29 6.2	13.0	7.5	45 12.43	34 6.7
23	6	14.0	34.0	53.5	12.5	. .	. .	. .	46 12.61	16.02	1.13	IV.	3	33.112	26 44.8	12.7	6.8	46 29.76	31 44.3
24	8	49.0	9.0	. .	. .	. .	. .	. .	47 47.46	16.01	1.14	II.	3	34.280	25 31.1	12.4	6.4	48 4.61	30 29.9
25	5	. .	40.0	. .	19.0	. .	. .	. .	48 18.89	16.00	1.28	IV.	4	46.333	12 53.4	12.2	5.8	48 36.17	17 51.4
26	7	39.0	59.0	18.0	. .	57.0	. .	35.2	50 37.37	15.99	1.31	III	4	48.332	10 48.0	11.7	2.2	50 54.67	15 41.9
27	7	40.5	0.0	19.0	. .	58.0	. .	36.5	50 38.53	15.99	1.31	V.	4	48.276	10 51.2	11.7	2.2	50 55.83	15 45.6
28	3	1.0	20.5	40.0	59.2	. .	. .	. .	55 59.20	15.96	1.31	IV.	4	47.710	11 26.8	10.5	2.4	56 16.47	37 16 19.7
29	5	. .	. .	. .	. .	. .	6.0	. .	18 56 26.95	15.95	0.80	VI.	1	5.102	56 0.7	10.4	15.4	18 56 43.70	38 1 6.5
30	7	45.0	4.0	. .	43.0	. .	. .	. .	19 1 43.16	15.92	0.93	III.	2	16.203	44 27.3	9.1	12.0	19 2 0.01	37 49 28.4
31	7	11.5	30.0	. .	. .	28.0	. .	. .	2 9.10	15.92	0.97	V.	2	19.525	40 59.0	9.1	10.9	2 25.99	45 59.0
32	9	. .	54.0	. .	33.5	. .	. .	. .	4 33.21	15.90	1.06	IV.	3	26.950	33 11.4	8.5	8.6	4 50.17	38 8.5
33	7	. .	. .	. .	. .	32.0	51.3	. .	5 12.66	15.89	1.36	V.	4	51.720	7 14.8	8.3	1.3	5 29.91	12 4.4
34	7	. .	23.0	42.5	2.0	. .	. .	. .	9 1.86	15.87	1.39	IV.	4	54.093	4 46.2	7.5	0.6	9 19.12	9 34.3
35	8	50.0	. .	29.0	48.0	. .	. .	. .	11 48.19	15.85	1.17	IV.	3	34.862	24 54.9	6.8	6.2	12 5.21	29 47.9
36	8	. .	45.0	4.0	23.0	. .	. .	. .	13 23.40	15.84	1.26	IV.	4	42.933	16 26.7	6.5	3.8	13 40.50	21 17.0
37	7	. .	1.0	. .	40.0	. .	. .	. .	25 39.87	15.74	1.42	IV.	4	55.870	2 55.4	3.6	0.0	25 57.03	7 39.0
38	7	48.0	. .	27.0	46.0	. .	. .	. .	29 46.18	15.71	1.01	IV.	2	21.028	39 24.7	2.7	10.5	30 2.90	44 17.9
39	7	. .	54.3	14.0	33.0	. .	. .	. .	31 33.13	15.70	1.36	IV.	4	50.000	9 3.1	2.4	1.7	31 50.19	13 47.2
40	8	. .	. .	17.0	37.0	. .	. .	. .	32 36.75	15.69	0.98	IV.	2	18.300	42 16.0	2.1	11.3	32 53.42	47 9.4
41	7	. .	. .	. .	19.0	38.5	58.0	. .	33 19.00	15.68	0.91	IV.	1	12.493	48 16.9	2.0	13.1	33 35.59	53 12.0
42	7	32.7	52.0	11.3	31.0	. .	. .	. .	19 41 30.95	+15.62	+1.04	IV.	3	22.620	−37 43.0	− 0.1	−10.0	19 41 47.61	−37 42 33.1

CORRECTIONS.

Date,		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 48	Aug. 20, 18 3	76 24 65.5	62.5	80.3	67.0	55.0	45.0	62.55	30.092	76.5	73.0	76.0	. .	75.0
	18 29	. .	. .	. .	. .	. .	. .	. .	30.076	76.0	72.5			
	19 1	. .	. .	. .	. .	. .	. .	. .	30.076	75.0	72.0			
	19 25	. .	. .	. .	. .	. .	. .	. .	30.070	73.3				
	19 40	64.5	63.6	80.6	67.8	55.6	44.0	62.68	30.066	74.7	71.7	. .	. .	74.0

REMARKS.

Aug. 20. $19^h 20^m$, hazy; $19^h.30$, cloudy.

(48) 41. Differs 5′ in δ from Mural, May 27.

ZONE 49. AUGUST 29. C. $D_0 = -35° 49' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7.8	. .	. .	39.7	58.5	17.7	36.2	. .	18 16 58.52	+16.88	+1.41	IV.	4	43.291	−16 4.4	−41.7	− 3.4	18 17 16.81	−36 5 49.5
2	7.8	. .	. .	. .	43.5	2.5	21.5	. .	17 43.47	16.88	1.41	IV.	5	45.678	13 36.4	41.5	2.9	18 1.76	3 20.8
3	8	. .	51.5	10.6	30.0	49.0	8.5	. .	23 29.92	16.85	1.36	IV.	3	21.417	38 58.5	40.1	9.1	23 48.13	28 47.7
4	8.9	. .	. .	. .	. .	6.7	25.5	. .	26 47.51	16.83	1.40	V.	4	38.868	20 41.6	39.3	4.6	27 5.74	10 25.5
5	8	. .	. .	35.6	54.4	13.7	33.0	. .	28 54.64	16.82	1.38	IV.	3	28.701	31 21.5	38.8	7.2	29 12.84	21 7.5
6	7	. .	13.7	33.0	51.7	11.0	30.5	. .	30 51.98	16.81	1.37	IV.	3	23.671	36 37.0	38.3	8.5	31 10.16	26 23.8
7	8	. .	59.6	18.7	37.7	56.8	16.0	. .	32 37.77	16.80	1.38	IV.	3	30.487	29 29.6	37.9	6.7	32 55.95	19 14.2
8	6.7	. .	18.5	37.4	56.5	15.5	34.3	. .	34 56.46	16.79	1.42	IV.	4	48.740	10 22.1	37.3	2.1	35 14.67	0 1.5
9	7.8	. .	. .	. .	13.4	32.4	51.2	. .	41 13.16	16.75	1.35	IV.	2	12.701	48 6.7	35.8	11.4	41 31.26	37 53.9
10	7	. .	45.0	4.5	23.0	42.5	1.8	. .	43 23.36	16.74	1.37	IV.	3	22.249	38 6.3	35.2	8.9	43 41.47	27 50.4
11	8.9	. .	. .	51.0	. .	. .	. .	. .	48 10.06	16.71	1.41	III.	4	44.027	15 18.1	34.1	3.3	48 28.18	4 55.5
12	7.8	. .	4.5	23.5	42.0	1.5	20.7	. .	48 32.48	16.71	1.40	IV.	4	39.571	19 59.4	34.0	4.4	48 50.59	9 37.8
13	8.9	. .	. .	. .	. .	34.5	. .	0.5	48 . .	16.71	1.41	VI.	4	42.478	16 54.6	34.1	3.6	49 . .	6 32.3
14	7	. .	48.0	7.0	26.0	45.0	. .	. .	51 26.04	16.68	1.41	IV.	4	44.540	14 46.0	33.3	3.1	51 44.13	4 22.4
15	7	. .	. .	2.0	21.0	40.4	59.5	. .	51 21.19	16.68	1.38	IV.	3	31.534	28 23.9	33.3	6.5	51 39.25	18 3.7
16	8.9	. .	. .	44.5	3.5	22.7	. .	. .	55 3.57	16.66	1.37	IV.	3	26.501	33 39.7	32.5	7.7	55 21.60	23 19.9
17	8.9	. .	. .	. .	. .	54.5	13.4	. .	55 35.26	16.66	1.37	V.	3	24.998	35 13.8	32.3	8.1	55 53.29	24 54.2
18	7	. .	37.5	56.5	15.7	35.0	54.2	. .	18 59 15.80	16.63	1.37	IV.	3	26.014	34 10.1	31.4	7.9	18 59 33.80	23 49.4
19	9	. .	. .	. .	. .	36.5?	. .	13.5	19 2 16.73	16.61	1.37	V.	3	25.761	34 25.9	30.7	8.0	19 2 34.71	24 4.6
20	8.9	. .	10.0	. .	48.0	. .	27.0	. .	5 48.37	16.59	1.34	IV.	2	10.338	50 34.8	29.9	12.0	6 6.30	40 16.7
21	7.8	. .	16.2	35.5	54.2	13.8	32.8	. .	9 54.50	16.56	1.36	IV.	3	20.248	40 11.8	29.0	9.4	10 12.42	29 50.2
22	8.9	. .	7.5	. .	45.5	. .	23.2	. .	11 45.44	16.54	1.40	IV.	4	40.448	19 2.9	28.5	4.2	12 3.38	8 35.6
23	8	. .	7.5	. .	45.5	4.7	23.4	. .	13 45.52	16.53	1.39	IV.	3	35.872	23 51.5	28.1	5.3	14 3.44	13 24.9
24	7.8	. .	. .	12.5	31.0	50.5	10.0	. .	18 31.46	16.49	1.39	IV.	3	31.520	28 24.8	27.0	6.4	18 49.34	17 58.2
25	8	. .	. .	27.5	. .	5.7	24.5	. .	18 46.55	16.49	1.41	IV.	4	42.099	17 19.2	26.9	3.8	19 4.45	6 49.9
26	8	. .	54.5	13.5	32.3	51.5	10.6	. .	21 32.50	16.47	1.40	IV.	3	33.289	26 33.8	26.3	6.0	21 50.37	16 6.1
27	9	. .	. .	. .	11.3	. .	. .	. .	28 11.35	16.42	1.38	IV.	3	27.536	32 34.7	24.7	7.5	28 29.15	22 6.9
28	8	. .	17.7	. .	55.7	15.0	34.5	. .	30 55.94	16.40	1.34	IV.	2	10.145	50 46.8	24.1	12.1	31 13.68	40 23.0
29	7.8	. .	9.5	28.5	47.5	6.4	25.6	. .	32 47.51	16.38	1.39	IV.	3	29.771	30 14.3	23.7	6.9	33 5.28	19 44.9
30	9	. .	. .	41.0	0.0	19.0	38.5	. .	44 0.08	16.28	1.38	IV.	3	27.440	32 40.8	21.2	7.5	44 17.74	22 9.5
31	7	. .	. .	. .	52.5	12.0	30.9	. .	44 52.65	16.27	1.35	IV.	2	14.962	45 45.0	21.0	10.8	45 10.27	35 16.8
32	7.8	. .	57.6	16.7	35.8	55.0	13.8	. .	53 35.78	16.19	1.36	IV.	3	21.441	38 57.0	19.1	9.1	53 53.33	28 25.2
33	8.9	. .	. .	. .	34.0	53.2	12.5	. .	54 34.12	16.18	1.37	IV.	3	24.342	35 55.1	18.9	8.3	54 51.67	36 25 22.3
34	7.8	. .	38.7	57.5	17.0	36.0	55.0	. .	57 16.86	16.16	1.43	IV.	4	51.011	6 59.6	18.4	1.5	57 34.45	35 56 19.5
35	7.8	. .	. .	13.0	32.0	51.0	9.8	. .	57 31.94	16.16	1.42	IV.	4	43.817	15 31.2	18.3	3.3	19 57 49.52	36 4 52.8
36	8	. .	14.4	33.4	52.5	11.5	30.5	. .	19 59 52.50	16.14	1.42	IV.	4	46.220	13 0.5	17.8	2.7	20 0 10.06	2 21.0
37	6.7	. .	. .	. .	2.5	21.5	40.6	59.7	20 1 2.37	16.13	1.36	IV.	3	21.508	38 52.8	17.6	9.0	1 19.86	28 19.4
38	9	. .	8.5	27.6	46.7	6.0	. .	. .	3 46.77	16.10	1.36	IV.	3	20.589	39 50.4	17.0	9.3	4 4.23	29 16.7
39	9	. .	. .	7.8	. .	44.7	3.5	. .	4 25.94	16.10	1.39	IV.	3	32.261	27 38.3	16.9	6.2	4 43.43	17 1.4
40	7	. .	14.5	33.6	52.0	11.0	50.0	. .	10 52.24	16.04	1.41	IV.	3	40.323	19 12.3	15.6	4.2	11 9.69	8 32.1
41	8	. .	. .	. .	. .	29.7	48.5	. .	11 10.41	16.03	1.38	V.	3	26.453	33 42.7	15.5	7.8	11 27.82	23 6.0
42	8	. .	29.5	48.0	7.7	26.9	. .	. .	17 7.58	15.98	1.40	IV.	3	35.031	24 44.3	14.4	5.5	17 24.96	14 4.2
43	7	. .	. .	31.5	50.9	10.0	48.8	. .	18 50.77	15.96	1.42	IV.	3	43.504	15 52.5	14.0	3.4	19 8.15	5 9.9
44	8	. .	. .	54.7	13.5	32.6	52.3	11.1	23 13.72	15.92	1.38	IV.	3	26.786	33 21.6	13.2	7.6	23 31.02	22 42.4
45	9	. .	. .	. .	54.0	. .	32.2	. .	27 53.97	15.87	1.35	IV.	2	14.089	46 39.8	12.3	11.0	28 11.19	36 3.1
46	8	. .	21.0	39.7	59.0	18.4	37.5	. .	29 59.12	15.86	1.35	IV.	2	16.718	43 55.0	11.9	10.3	30 16.33	33 17.2
47	8	. .	. .	. .	. .	45.5	4.5	. .	30 26.34	15.85	1.39	V.	3	29.960	30 2.5	11.8	6.8	30 43.58	19 21.1
48	8.9	. .	. .	. .	45.8	. .	. .	. .	33 45.81	15.82	1.42	IV.	4	44.706	14 35.4	11.2	3.1	34 3.05	3 49.7
49	7.8	. .	. .	. .	. .	9.7	28.7	47.6	20 34 50.08	+15.82	+1.39	V.	3	27.511	−32 36.3	−11.0	− 7.5	20 35 7.29	−36 21 54.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 29,	21	+ 7.935	+ 0.010	+ 0.273	+ 0.347	+ 0.230	0 0 1.97	30.010

REMARKS.

(49) 12. Transits over T.'s II–VII assumed as 10^s too large, to agree with Transit Z., July 10, and Lacaille 7939.

Aug. 29. $21^h\ 2^m$, interrupted by clouds.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 49	Aug. 29,	18 23	. .	. .	. .	. .	. .	. .	. .	30.072	76.5	75.5			
		18 30	75 9 65.1	65.0	80.1	68.2	58.1	46.1	63.77	. .	. .	. .	76.6	75.9	
		18 48	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.0			
		19 2	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.0			
		19 18	. .	. .	. .	. .	. .	. .	. .	30.070	76.5	74.7			
		19 30	65.1	65.0	80.0	68.9	58.1	46.0	63.85	. .	. .	. .	76.1	75.7	
		19 44	. .	. .	. .	. .	. .	. .	. .	30.075	76.0	74.8			
		19 59	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.5			

ZONE 49. AUGUST 29. C. $D_\circ = -35° 49' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7.8	. .	. .	. .	. .	46.5	5.8	24.8	20 36 27.32	+15.79	+1.35	V.	2	10.682	−50 13.0	−10.7	−11.9	20 36 44.46	−36 39 35.6
51	9	. .	. .	58.7	17.7	. .	. .	15.0	41 17.77	15.74	1.41	IV.	4	42.011	17 24.7	9.8	3.8	41 34.92	6 38.3
52	9	. .	. .	1.0	. .	. .	58.3	17.5	43 20.11	15.72	1.38	IV.	3	23.853	36 25.6	9.5	8.4	43 37.21	25 43.5
53	7	. .	35.0	54.5	13.5	33.0	52.0	. .	50 13.60	15.65	1.35	IV.	2	7.985	53 1.9	8.3	12.7	50 30.60	42 22.9
54	8	. .	. .	49.5	8.7	27.9	. .	. .	51 8.67	15.64	1.35	IV.	2	11.898	48 56.9	8.2	11.6	51 25.66	36 38 16.7
55	9	. .	22.7	. .	. .	. .	39.0	. .	53 0.94	15.62	1.44	IV.	4	53.034	5 52.7	7.9	1.0	53 18.00	35 55 1.6
56	9	. .	45.5	4.7	23.5	. .	2.0	. .	20 57 23.75	15.58	1.37	IV.	3	21.594	38 47.4	7.2	9.0	20 57 40.70	36 28 3.6
57	9	. .	. .	46.5	5.0	. .	43.7	. .	21 2 5.39	+15.53	+1.37	IV.	3	19.309	−41 10.7	− 6.5	− 9.6	21 2 22.29	−36 30 26.8

ZONE 50. AUGUST 31. P. $D_\circ = -25° 48' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	20.0	. .	54.0	11.0	. .	. .	. .	19 12 11.07	+17.11	. .	IV.	2	21.070	−38 19.5	− 4.4	− 3.1	. . .	−26 26 27.0
2	8	. .	. .	29.0	47.0	. .	. .	. .	21 46.57	17.05	. .	IV.	4	44.733	14 33.7	2.1	0.7	. . .	2 36.5
3	8	. .	. .	. .	22.5	. .	. .	. .	19 23 22.54	+17.04	. .	IV.	3	27.620	−32 29.4	− 1.7	− 2.6	. . .	−26 20 33.7

ZONE 51. SEPTEMBER 9. C. $D_\circ = -32° 3' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	11.5	29.2	48.0	. .	23.7	19 26 29.45	+13.15	+0.49	IV.	4	53.251	− 5 39.2	−36.6	− 0.6	19 26 43.09	−32 9 26.4
2	8	. .	7.7	26.0	44.5	3.0	21.2	. .	29 44.48	13.12	1.11	IV.	2	16.056	44 36.5	35.9	7.1	29 58.71	48 29.5
3	9	. .	. .	26.5	. .	3.6	22.0	. .	32 45.19	13.10	0.92	IV.	3	28.809	31 14.7	35.2	4.9	32 59.21	35 4.8
4	8	. .	41.0	59.1	17.3	35.5	53.5	. .	35 17.31	13.07	0.56	IV.	4	54.254	4 36.8	34.7	0.4	35 30.94	8 21.9
5	7	. .	. .	54.5	12.8	30.8	50.0	. .	36 12.94	13.07	0.67	IV.	4	47.068	12 7.2	34.5	1.6	36 26.68	15 53.3
6	8	. .	. .	28.0	47.8	. .	23.5	. .	36 47.06	13.06	0.71	IV.	4	45.388	13 52.7	34.4	1.9	37 0.83	17 39.0
7	7	. .	20.7	38.7	57.4	15.8	33.8	. .	42 57.30	13.00	0.82	IV.	3	41.876	17 34.5	33.0	2.6	43 11.12	21 20.1
8	8	. .	6.5	25.0	43.2	. .	20.0	. .	48 43.26	12.95	1.30	IV.	2	15.122	45 35.1	31.7	7.3	48 57.51	49 24.1
9	7	. .	16.3	34.4	53.0	11.5	29.5	. .	50 52.95	12.93	1.06	IV.	3	29.056	30 59.2	31.2	4.8	51 6.94	34 45.2
10	6.7	. .	58.6	6.5	34.4	53.1	11.5	. .	54 34.83	12.90	1.02	IV.	3	35.161	24 36.3	30.3	3.7	54 48.75	28 20.3
11	9	. .	. .	. .	43.0	1.0	. .	. .	19 59 42.89	12.85	1.09	IV.	3	33.981	25 50.2	29.2	3.9	19 59 56.83	29 33.3
12	7	. .	. .	53.0	11.2	29.0	47.0	. .	20 1 10.91	12.83	1.34	IV.	2	18.743	41 48.0	28.8	6.7	20 1 25.08	45 33.5
13	9	. .	. .	. .	. .	. .	30.5	. .	1 54.12	12.83	0.93	VI.	4	45.647	13 35.5	28.7	1.9	2 7.88	17 16.1
14	8	. .	22.9	41.0	59.5	17.5	35.5	. .	20 9 59.31	+12.75	+0.91	IV.	4	51.053	− 7 57.0	−26.9	− 1.0	20 10 12.97	−32 11 34.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 31,	21	+ 7.367	+ 0.006	+ 0.167	+ 0.294	+ 0.115	0 0 1.72	30.011
Sept. 9,	22	+ 4.777	− 0.021	− 0.356	+ 0.527	+ 0.022		

REMARKS.

Aug. 31. Haze and moon-light.
(50) 1. Micrometer reading assumed as $22^r.070$ instead of $21^r.070$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 49	Aug. 29,	20 11	. .	. .	. .	. .	. .	. .	. .	30.084	76.0	74.3			
		20 30	75 9 65.1	65.0	79.9	69.1	58.1	45.8	63.83	. .	. .	74.0	75.6	75.3	
		20 43	. .	. .	. .	. .	. .	. .	. .	30.086	. .	74.0			
		21 2	65.1	65.8	80.0	69.0	58.4	46.1	64.07	30.088	75.5	73.5	75.5	75.3	74.7
Zone 50	Aug. 31,	19 20	65 9 65.0	59.2	76.2	61.6	53.8	43.5	59.88	30.132	81.0	76.5	77.0	. .	81.0
Zone 51	Sept. 9,	19 20	71 24 63.0	64.0	78.0	65.9	53.1	45.1	61.52	30.228	74.0	66.0	72.4	73.0	78.6
		19 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.7			
		20 1	. .	. .	. .	. .	. .	. .	. .	0.230	72.6	64.6			
		20 10	71 24 62.0	65.1	77.9	65.5	53.9	64.2	61.43	. .	. .	. .	70.2	71.5	

ZONE 52. SEPTEMBER 9. C. $D_{\circ} = -32° 3' 10''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
1	8	. .	10.2	. .	46.0	5.2	23.5	. .	20 55 46.65	+12.26	+0.56	IV.	2	8.338	−52 40.0	−17.5	− 8.5	20 55 59.47	−32 56 16.0
2	6	. .	. .	. .	1.0	19.5	37.8	56.0	57 1.08	12.25	0.56	IV.	2	8.338	52 40.0	17.3	8.5	57 13.89	56 15.8
3	8.9	. .	. .	. .	. .	27.5	45.7	4.0	20 59 5.25	12.22	0.82	V.	3	37.036	22 38.5	16.8	3.4	20 59 18.29	26 8.7
4	8	. .	. .	. .	. .	. .	. .	55.0	21 0 0.17	12.22	0.73	VII.	3	26.061	34 6.5	16.7	5.4	21 0 13.12	37 38.6
5	7	. .	14.0	32.2	50.5	8.6	26.7	. .	6 50.41	12.14	0.82	IV.	3	37.118	22 33.4	15.5	3.4	7 3.37	26 2.3
6	6	. .	. .	18.8	36.7	55.0	13.6	. .	8 36.86	12.12	0.66	IV.	2	16.458	44 11.4	52.2	7.1	8 49.64	47 43.7
7	9	. .	. .	. .	55.0	14.2	. .	. .	10 55.47	12.10	0.75	IV.	3	26.283	33 53.4	14.8	5.3	11 8.32	37 23.5
8	9	. .	. .	. .	22.8	. .	. .	. .	16 22.81	12.04	0.94	IV.	4	48.979	10 7.2	14.0	1.3	16 35.79	13 32.5
9	7.8	. .	. .	8.5	26.8	45.0	3.5	. .	18 26.85	12.01	0.85	IV.	3	36.539	23 9.8	13.7	3.5	18 39.71	26 37.0
10	8.9	. .	. .	. .	. .	31.5	. .	. .	19 13.10	11.99	0.63	V.	2	12.110	48 43.6	13.5	7.9	19 25.72	52 15.0
11	8.9	. .	. .	. .	. .	32.2	. .	. .	20 13.89	11.99	0.75	V.	3	24.964	35 15.9	13.4	5.5	20 26.63	38 44.8
12	8	. .	. .	20.2	38.7	56.5	15.0	. .	22 38.51	11.97	0.96	IV.	4	50.202	8 50.6	13.0	1.1	22 51.44	12 14.7
13	9	. .	. .	. .	56.5	14.8	32.3	. .	24 56.34	11.94	0.90	IV.	4	43.228	16 8.4	12.6	2.3	25 9.18	19 33.3
14	8	. .	. .	41.5	0.0	. .	. .	. .	28 59.89	11.89	0.86	IV.	4	38.721	20 51.2	12.0	3.1	29 12.64	24 16.3
15	8	. .	. .	. .	45.5	. .	. .	. .	29 45.56	11.89	0.77	IV.	3	28.621	31 26.6	11.9	4.9	29 58.22	34 53.4
16	8	. .	. .	33.6	. .	. .	28.0	46.1	31 51.54	11.86	0.78	IV.	3	27.529	32 35.2	11.6	5.1	32 4.18	36 1.9
17	9	. .	42.0	. .	18.7	37.0	. .	. .	34 18.67	11.83	0.64	IV.	2	12.162	48 40.5	11.3	7.8	34 31.14	52 9.6
18	8	. .	15.8	. .	52.2	10.5	. .	47.0	37 52.21	11.79	0.76	IV.	3	25.585	34 37.0	10.8	5.4	38 4.76	38 3.2
19	9	. .	. .	54.0	12.0	30.2	. .	. .	50 12.07	11.65	0.95	IV.	4	46.882	12 18.7	9.2	1.7	50 24.67	15 39.6
20	6.7	. .	. .	. .	57.5	16.0	34.0	52.1	50 57.60	11.65	0.96	IV.	4	48.129	11 0.6	9.1	1.5	51 10.21	14 21.2
21	7	. .	59.0	16.8	35.0	53.5	12.4	. .	53 35.34	11.61	0.66	IV.	2	12.951	47 51.0	8.8	7.7	53 47.61	51 17.5
22	7.8	. .	. .	. .	. .	. .	56.2	14.8	54 20.04	11.60	1.00	VI.	4	52.309	6 37.5	8.7	0.8	54 32.64	9 57.0
23	8	. .	3.3	22.0	40.5	58.0	16.6	. .	21 57 40.10	11.57	0.94	IV.	4	44.821	14 28.1	8.4	2.0	21 57 52.61	17 48.5
24	9	. .	48.2	6.9	25.2	44.0	2.0	. .	22 3 25.26	11.50	0.69	IV.	2	16.068	44 35.7	7.8	7.1	22 3 37.45	48 0.6
25	9	. .	. .	44.0	. .	. .	. .	58.?	22 5 2.79	+11.48	+0.97	IV.	4	47.968	−11 10.6	− 7.6	− 1.5	22 5 15.24	−32 14 29.7

ZONE 53. SEPTEMBER 13. P. $D_{\circ} = -34° 33' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	49.0	7.3	26.5	. .	. .	. .	. .	19 25 45.12	+12.12	+0.34	III.	4	43.523	−15 49.9	−39.6	− 2.6	19 25 57.58	−34 50 2.1
2	9	. .	. .	. .	. .	32.5	. .	. .	26 13.69	12.11	0.34	V.	3	35.077	24 41.5	39.5	4.4	26 26.14	58 55.4
3	7	. .	. .	. .	. .	. .	51.0	. .	27 13.64	12.10	0.34	VI.	4	55.808	2 58.4	39.3	0.0	27 26.08	37 7.7
4	7	. .	. .	. .	. .	52.0	40.7	. .	19 28 33.22	12.09	0.34	V.	4	41.113	18 23.9	39.0	3.1	19 28 45.65	34 52 32.9
5	7	29.0	47.5	6.3	25.0	. .	. .	. .	20 10 25.14	11.67	0.31	IV.	3	31.100	28 51.0	30.6	5.3	20 10 37.12	35 2 56.9
6	9	. .	. .	31.0	49.0	. .	. .	45.7	11 49.39	11.66	0.30	IV.	3	35.827	23 54.3	30.3	4.2	12 1.35	34 57 58.8
7	9	25.0	44.0	2.5	21.0	. .	. .	. .	14 21.30	11.63	0.30	IV.	3	36.726	22 57.9	29.8	4.0	14 33.23	34 57 1.7
8	9	. .	. .	. .	. .	. .	. .	39.0	14 42.50	11.62	0.29	VII.	3	23.100	37 12.2	29.7	7.0	14 54.41	35 11 18.9
9	7	. .	9.5	28.5	47.0	. .	. .	. .	17 47.13	11.59	0.30	IV.	4	39.590	19 56.7	29.0	3.4	17 59.02	34 53 59.1
10	8	. .	. .	51.0	10.0	. .	. .	. .	22 9.93	11.54	0.29	IV.	3	34.077	25 44.2	28.1	4.6	22 21,76	59 46.9
11	8	4.0	23.0	. .	. .	. .	. .	. .	25 0.35	11.51	0.29	III.	4	45.107	14 10.4	27.5	2.2	25 12.15	34 48 10.1
12	8	. .	. .	. .	. .	36.0	. .	. .	25 17.12	11.51	0.28	V.	2	20.195	40 16.9	27.5	7.7	25 28.91	35 14 22.1
13	9	. .	. .	. .	. .	. .	35.0	. .	25 57.64	11.50	0.30	VI.	4	54.430	4 24.9	27.4	0.2	26 9.44	34 38 22.5
14	9	. .	. .	. .	36.0	. .	. .	. .	27 35.98	11.48	0.30	IV.	4	52.480	6 27.5	27.0	0.6	27 47.76	40 25.1
15	9.10	. .	48.0	. .	. .	. .	. .	. .	30 25.56	11.45	0.30	II.	4	49.270	9 49.2	26.4	1.3	30 37.31	43 46.9
16	9	. .	11.0	. .	49.0	. .	. .	. .	31 48.76	11.43	0.29	IV.	4	55.010	3 49.4	26.2	0.1	32 0.48	37 45.7
17	9	. .	. .	. .	. .	. .	. .	7.0	32 10.71	11.43	0.29	VII.	4	43.670	15 38.9	26.1	2.5	32 22.43	34 49 37.5
18	9.10	. .	. .	. .	. .	. .	19.0	. .	34 41.41	11.40	0.28	VI.	3	30.650	29 18.9	25.6	5.4	34 53.09	35 3 19.9
19	9.10	. .	. .	. .	. .	45.0	. .	. .	38 26.12	11.35	0.27	V.	2	16.950	43 40.2	24.8	8.5	38 37.74	17 43.5
20	9	. .	. .	. .	. .	. .	18.0	. . .	20 43 40.34	+11.29	+0.27	VI.	2	21.285	−39 8.2	−23.8	− 7.5	20 43 51.90	−35 13 9.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ' "	r.
Sept. 13,	22	+ 3.439	− 0.020	− 0.356	+ 0.527	+ 0.022		

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ' "						"	in.	°	°	°	°	°
Zone 52	Sept. 9,	21 0	71 24 61.9	64.2	76.9	65.9	52.6	44.1	60.93	30.242	70.0	64.3	69.9	71.0	78.0
		21 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.0			
		21 50	. .	. .	. .	. .	. .	. .	. .	. . .	. .	64.0			
		22 0	61.0	65.1	76.6	66.7	53.1	44.3	61.13	30.250	69.5	63.5	68.0	69.4	
Zone 53	Sept. 13,	19 20	73 54 67.3	64.4	81.5	68.7	56.6	46.4	64.15	30.038	78.8	74.8	79.5	77.5	75.0
		20 0	67.5	65.5	82.6	69.3	58.6	46.6	65.02						
		20 10	. .	. .	. .	. .	. .	. .	. .	30.040	78.1	74.0			
		20 43	. .	. .	. .	. .	. .	. .	. .	30.042	77.3	73.7			
		20 58	. .	. .	. .	. .	. .	. .	. .	30.038	77.0	73.7			

REMARKS.

Sept. 9. Very clear; reading of Barometer, &c., at 19^{h} 20^{m}; 20^{h} 15^{m}, moved the circle for other observations.

Sept. 13. 19^{h} 29^{m}, found the Micrometer and fixed wires connected by a small fiber; suspended sweeping until it could be removed; previous observations probably impaired by it. Readings of Barometer, &c., at 19^{h} 50^{m}. 22^{h} 59^{m}, hazy; few stars visible.

ZONE 53. SEPTEMBER 13. P. $D_\circ = -34° 33' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	7	. .	3.0	22.0	40.0	. .	. .	. .	20 50 40.44	+11.21	+0.27	IV.	4	44.430	−14 52.9	−22.5	− 2.3	20 50 51.92	−34 48 47.7
22	8	. .	0.0	. .	37.5	. .	. .	. .	52 37.51	11.18	0.28	IV.	4	54.640	3 9.8	22.1	0.2	52 48.97	34 37 2.1
23	6	56.5	15.0	34.0	52.7	. .	. .	. .	56 52.82	11.13	0.26	IV.	2	20.975	39 28.0	21.4	7.5	57 4.21	35 13 26.9
24	7	. .	43.0	1.3	20.0	. .	. .	. .	20 58 20.22	11.12	0.27	IV.	4	45.365	13 54.2	21.1	2.1	20 58 31.61	34 47 47.4
25	8	. .	. .	. .	. .	36.0	. .	. .	21 8 17.27	11.00	0.27	V.	4	55.400	3 24.6	19.3	0.1	21 8 28.54	37 14.0
26	7	. .	. .	. .	. .	. .	31.0	. .	8 53.64	10.99	0.27	VI.	4	55.280	3 31.6	19.2	0.1	9 4.90	34 37 20.9
27	8	. .	. .	. .	42.0	0.0	. .	. .	10 41.58	10.97	0.25	IV.	2	19.990	40 29.8	18.9	7.8	10 52.80	35 14 26.6
28	5.6	. .	21.0	39.0	58.0	. .	. .	. .	22 58.08	10.82	0.25	IV.	4	56.402	2 22.0	17.0	0.0	23 9.15	34 36 9.0
29	9	. .	. .	. .	. .	. .	56.0	. .	23 18.44	10.82	0.24	VI.	3	33.637	26 11.5	16.9	4.7	23 29.50	35 0 3.1
30	6	1.0	19.5	38.0	57.0	. .	. .	. .	25 57.05	10.78	0.24	IV.	3	34.280	25 31.6	16.5	4.6	26 8.07	34 59 22.7
31	8	. .	. .	. .	. .	2.0	. .	. .	28 43.07	10.75	0.24	VI.	2	13.710	47 2.9	16.1	9.2	28 54.06	35 20 58.2
32	7	17.0	36.0	55.0	14.0	. .	. .	. .	31 13.76	10.71	0.24	IV.	2	21.905	38 29.7	15.7	7.4	31 25.71	12 22.8
33	9	. .	. .	. .	42.0	0.0	19.0	. .	31 41.50	10.71	0.23	IV.	2	22.463	37 54.9	15.7	7.2	31 52.44	35 11 47.8
34	8	. .	59.5	18.0	37.3	. .	. .	. .	45 37.06	10.53	0.23	IV.	4	42.683	16 42.5	13.8	2.7	45 47.82	34 50 29.0
35	8.9	. .	. .	. .	. .	. .	51.0	. .	46 13.30	10.52	0.22	VI.	2	13.527	47 14.5	13.7	9.2	46 24.04	35 21 7.4
36	8	11.0	29.5	49.0	7.7	. .	. .	. .	51 7.58	10.46	0.22	IV.	2	18.453	42 6.4	13.1	8.1	51 18.26	15 57.6
37	8	5.7	24.0	42.7	1.3	. .	. .	. .	53 1.65	10.43	0.22	IV.	3	27.820	32 16.7	12.9	6.0	53 12.30	6 5.6
38	9	4.5	. .	42.0	10.0	. .	. .	. .	57 0.69	10.38	0.22	IV.	3	26.400	33 46.0	12.4	6.3	57 11.29	7 34.7
39	8	. .	42.0	1.0	. .	. .	. .	. .	59 19.78	10.35	0.21	III.	2	17.410	43 11.7	12.1	8.4	59 30.34	35 17 2.2
40	4	. .	. .	. .	. .	46.5	5.0	. .	21 59 27.64	10.35	0.23	V.	4	46.580	12 37.5	12.1	1.9	21 59 38.22	34 46 21.5
41	3.4	. .	. .	. .	58.5	. .	36.0	. .	22 1 58.55	10.32	0.23	IV.	4	47.870	11 16.7	11.8	1.6	22 2 9.10	34 45 0.1
42	7	. .	. .	. .	. .	59.0	18.0	. .	2 40.23	10.31	0.21	V.	3	22.110	38 15.0	11.6	7.3	2 50.75	35 12 3.9
43	9	. .	. .	. .	10.0	. .	. .	. .	8 10.05	10.24	0.22	IV.	3	35.870	23 51.6	11.2	4.2	8 20.51	34 57 37.0
44	7	56.0	15.0	34.0	53.0	. .	. .	. .	11 52.78	10.19	0.21	IV.	2	18.347	42 13.0	10.8	8.1	12 3.18	35 16 1.9
45	7	. .	. .	47.0	5.5	. .	. .	. .	13 5.69	10.17	0.20	V.	2	17.890	42 41.3	10.6	8.2	13 16.06	16 30.1
46	7	. .	. .	. .	13.0	. .	. .	9.0	13 12.76	10.17	0.20	VI.	2	19.645	40 51.0	10.6	7.8	13 23.13	35 14 39.4
47	7	. .	. .	27.0	46.0	. .	. .	. .	20 45.84	10.07	0.21	IV.	4	55.463	3 20.9	9.8	0.0	20 56.12	34 37 0.7
48	7	. .	4.5	. .	42.5	. .	. .	. .	25 42.44	10.01	0.19	IV.	1	7.927	53 2.6	9.3	10.5	25 52.64	35 26 52.4
49	8	38.0	57.5	16.0	34.5	. .	. .	. .	33 34.70	9.90	0.19	IV.	3	30.110	29 53.2	8.6	5.5	33 44.79	3 37.3
50	8	. .	. .	. .	46.0	5.0	23.7	. .	34 46.04	9.89	0.18	V.	2	17.948	42 37.7	8.5	8.2	34 56.11	35 16 24.4
51	6	46.7	5.7	24.3	43.0	. .	. .	. .	38 43.10	9.84	0.19	IV.	3	36.280	23 26.1	8.2	4.1	38 53.13	34 57 8.4
52	7	. .	58.5	17.0	35.7	. .	. .	. .	43 35.97	9.78	0.18	IV.	1	8.970	51 57.3	7.8	10.3	43 45.93	35 25 45.4
53	8	. .	. .	42.0	0.5	. .	. .	. .	22 59 0.69	9.58	0.17	IV.	3	32.330	27 34.0	6.8	5.0	22 59 10.44	1 15.8
54	8	. .	. .	. .	. .	5.0	. .	. .	23 15 46.14	9.36	0.16	V.	3	26.550	33 36.5	6.0	6.3	23 15 55.66	35 7 18.8
55	9	. .	. .	. .	35.0	. .	. .	. .	44 35.05	9.00	0.14	IV.	3	37.290	22 22.7	5.4	3.9	44 44.19	34 56 2.0
56	9	. .	. .	17.0	36.0	. .	. .	. .	50 35.94	8.93	0.13	IV.	3	26.650	33 30.2	5.4	6.3	50 45.00	35 7 11.9
57	9	. .	46.0	5.0	. .	. .	. .	. .	23 56 23.76	+ 8.86	+0.12	V.	2	19.260	−41 15.6	− 5.4	− 7.9	23 56 32.74	−35 14 58.9

ZONE 54. SEPTEMBER 14. C. $D_\circ = -34° 33' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	36.2	. .	. .	32.0	18 49 35.99	+12.26	+0.62	IV.	4	53.141	− 5 46.0	−40.5	− 0.4	18 49 48.87	−34 39 56.9
2	9	. .	. .	0.5	19.1	37.6	. .	. .	51 19.06	12.25	0.61	IV.	4	50.741	8 16.6	40.1	0.9	51 31.92	42 27.6
3	8	. .	. .	5.2	24.1	42.5	1.3	. .	52 23.92	12.24	0.59	IV.	3	43.205	16 11.3	39.9	2.5	52 36.75	34 50 23.7
4	8.9	. .	. .	. .	. .	47.4	. .	25.1	53 28.58	12.23	0.55	V.	3	27.608	32 30.2	39.6	5.9	53 41.36	35 6 45.7
5	9	. .	. .	37.0	. .	14.6	. .	. .	57 55.79	12.20	0.64	IV.	4	50.938	8 4.1	38.6	0.9	58 8.63	34 42 13.6
6	8.9	. .	. .	. .	14.6	33.5	52.0	. .	18 59 14.64	12.19	0.65	IV	4	49.921	9 8.0	38.3	1.1	18 59 27.48	34 43 17.4
7	8.9	. .	. .	56.6	15.2	34.1	. .	. .	19 1 15.30	12.17	0.56	IV.	3	25.806	34 23.1	37.8	6.3	19 1 28.03	35 8 37.2
8	9	. .	. .	. .	42.0	. .	20.0	. .	19 2 42.29	+12.16	+0.66	IV.	4	52.344	− 6 36.1	−37.4	− 0.6	19 2 55.11	−34 40 44.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 14,	22	+ 3.248	− 0.024	− 0.356	+ 0.527	+ 0.022		

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 53	Sept. 13, 21 45	. .	. .	. .	. .	. .	. .	. .	30.038	76.8	73.5			
	22 8	. .	. .	. .	. .	. .	. .	. .	30.038	76.5	72.6			
	22 59	. .	. .	. .	. .	. .	. .	. .	30.032	75.8	72.5			
	23 56	. .	. .	. .	. .	. .	. .	. .	30.008	75.3	72.0	. .	. .	75.5
	0 0	66.7	65.5	82.6	69.3	58.6	. .	64.67						
Zone 54	Sept. 14, 18 40	73 54 61.2	58.0	75.0	62.5	48.5	. .	57.92	29.942	82.0	79.9	83.0	80.0	77.0
	18 49	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .			
	19 1	. .	. .	. .	. .	. .	. .	. .	. .	. .	78.5			
	19 19	. .	. .	. .	. .	. .	. .	. .	29.934	81.7	78.7			

REMARKS.

(53) 22. Micrometer reading assumed as $55^r.640$ instead of $54^r.640$.

(53) 35. Differs 21^s from Transit Z., Sept. 19.

ZONE 54. SEPTEMBER 14. C. $D_{\circ} = -34° 33' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	9	. .	. .	52.1	. .	30.0	48.2	. .	19 5 10.89	+12.14	+0.59	IV.	3	30.408	−29 34.6	−36.7	− 5.3	19 5 23.62	−35 3 46.6
10	7.8	. .	44.2	3.0	21.5	40.4	59.6	. .	11 21.74	12.08	0.58	IV.	2	19.479	41 2.0	35.3	7.7	11 34.40	15 15.0
11	8	. .	6.0	25.0	43.1	. .	21.1	. .	13 43.52	12.06	0.58	IV.	2	19.775	40 43.3	34.6	7.7	13 56.14	14 55.6
12	9	. .	54.0	13.4	32.0	51.0	10.0	. .	19 32.09	12.01	0.57	IV.	3	11.953	48 51.5	33.1	9.4	19 44.67	35 23 4.0
13	9	. .	. .	. .	46.0	4.2	22.5	. .	25 44.50	11.95	0.70	IV.	4	43.466	15 53.4	31.7	2.5	25 57.15	34 49 57.6
14	9	. .	. .	. .	. .	. .	51.0?	. .	26 13.46	11.95	0.67	VI.	3	34.981	24 47.1	31.7	4.3	26 26.08	58 53.1
15	7.8	. .	. .	14.5	33.2	52.0	10.5	. .	28 33.19	11.93	0.70	IV.	3	41.011	18 29.0	31.1	3.0	28 45.82	52 33.1
16	9	. .	35.0	54.0	12.5	31.1	50.1	. .	47 12.55	11.74	0.75	IV.	3	36.379	23 19.9	26.9	4.0	47 25.04	34 57 20.8
17	6.7	57.7	16.6	35.2	54.0	12.8	31.6	50.5	49 54.73	11.71	0.73	IV.	3	28.279	31 48.1	26.3	5.8	50 7.17	35 5 50.2
18	8.9	. .	6.5	25.6	44.5	3.2	22.1	. .	51 44.39	11.69	0.76	IV.	3	34.291	25 30.9	25.8	4.5	51 56.84	34 59 31.2
19	8	. .	53.5	12.6	. .	50.2	9.0	. .	55 31.32	11.65	0.75	IV.	3	28.911	31 8.3	24.9	5.6	55 43.72	35 5 8.8
20	9	. .	. .	. .	. .	. .	53.0	. .	57 15.34	11.63	0.74	IV.	3	22.774	37 33.2	24.5	7.0	57 27.71	11 34.7
21	8	. .	48.0	. .	25.6	45.0	3.5	. .	58 25.83	11.62	0.77	IV.	3	30.521	29 27.4	24.2	5.3	58 38.22	35 3 26.9
22	8	. .	. .	. .	. .	. .	. .	34.0	19 58 37.65	11.62	0.79	VII.	3	37.109	22 33.3	24.1	3.8	19 58 50.06	34 56 31.2
23	9	. .	. .	. .	18.7	. .	. .	. .	20 4 18.75	11.56	0.77	IV.	3	26.666	33 29.2	22.7	6.1	20 4 31.08	35 7 28.0
24	7.8	. .	47.5	6.0	24.5	43.4	2.5	. .	10 24.78	11.50	0.80	IV.	3	30.961	28 59.7	21.0	5.2	10 37.08	35 2 55.9
25	9	. .	. .	. .	49.7	8.0	27.0	. .	11 49.46	11.48	0.83	IV.	3	36.691	23 0.1	20.7	3.9	12 1.77	34 56 54.7
26	9	. .	5.8	24.7	43.5	. .	21.0	. .	20 14 43.47	+11.45	+0.79	IV.	3	23.958	−36 19.0	−20.9	− 6.7	20 14 55.71	−35 10 16.6

ZONE 55. SEPTEMBER 14. C. $D_{\circ} = -35° 48' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	29.6	. .	8.0	. .	20 57 29.69	+11.07	+1.54	IV.	3	21.451	−38 56.4	−16.4	− 9.4	20 57 42.30	−36 28 2.2
2	9	. .	. .	0.8?	. .	. .	. .	. .	21 2 19.93	10.98	1.60	III.	3	19.088	41 24.3	15.6	10.0	21 2 32.51	30 29.9
3	7.8	. .	. .	. .	45.5	. .	53.0	11.2	3 14.72	10.97	1.45	IV.	3	26.639	33 30.9	15.4	8.1	3 27.14	36 22 34.4
4	9	. .	. .	. .	55.5	3.0	22.0	41.0	4 44.33	10.95	1.03	IV.	4	48.671	10 26.5	15.1	2.4	4 56.31	35 59 24.0
5	9	. .	. .	. .	. .	16.5	35.0	. .	5 57.09	10.93	1.39	V.	3	29.037	31 0.5	14.9	7.4	6 9.41	36 20 2.8
6	9	. .	. .	. .	. .	. .	9.0	28.1	6 30.91	10.93	1.16	VI.	4	41.036	18 25.0	14.8	4.4	6 43.00	7 24.2
7	8	. .	25.0	44.5	4.1	23.0	42.0	. .	11 3.73	10.87	1.36	IV.	3	29.011	31 2.0	14.1	7.4	11 15.96	20 3.5
8	9	. .	. .	5.0	23.8	43.0	. .	. .	16 23.93	10.80	1.52	IV.	3	20.685	39 44.3	13.2	9.6	16 35.25	28 47.1
9	9.10	. .	. .	. .	. .	. .	24.5	. .	16 46.37	10.79	1.20	VI.	4	37.491	22 7.7	13.1	5.2	16 58.36	11 6.0
10	9	. .	28.0	47.0	6.0	25.2	. .	. .	21 6.12	10.74	1.68	IV.	2	10.814	50 4.8	12.4	12.2	21 18.54	39 9.4
11	9	. .	. .	7.0	26.0	. .	. .	22.2	22 25.70	10.72	1.20	IV.	4	35.021	24 43.4	12.2	5.9	22 37.62	13 41.5
12	8	. .	58.2	17.5	36.2	55.7	14.9	. .	27 36.50	10.65	1.55	IV.	2	16.540	44 6.2	11.4	10.7	27 48.70	33 8.3
13	9	. .	59.0	. .	36.5	. .	15.2	. .	30 36.92	10.61	1.50	IV.	2	18.558	41 59.7	11.0	10.2	30 49.03	31 0.9
14	7	. .	. .	42.0	1.5	20.8	40.0	. .	32 1.55	10.59	1.22	IV.	3	33.018	26 50.6	10.8	6.4	32 13.36	15 47.8
15	9	. .	. .	. .	27.5	47.0	6.0	. .	33 27.77	10.57	1.21	IV.	3	33.069	26 47.5	10.5	6.4	33 39.55	15 44.4
16	8.9	. .	45.5	4.6	23.5	42.5	2.0	. .	35 23.63	10.55	1.24	IV.	3	31.064	28 53.3	10.2	6.9	35 35.42	17 50.4
17	9	. .	55.3	. .	33.5	. .	11.7	. .	37 33.52	10.52	1.35	IV.	3	25.388	34 49.5	9.9	8.4	37 45.39	23 47.8
18	9	. .	20.8	40.0	59.0	18.0	. .	. .	39 59.01	10.48	1.27	IV.	3	29.204	30 50.1	9.6	7.4	40 10.76	19 47.1
19	9	. .	26.0	. .	4.5	23.5	. .	. .	40 4.37	10.48	1.09	IV.	3	37.726	21 55.2	9.6	5.2	40 15.94	10 50.0
20	9	. .	. .	12.0	. .	50.6	10.0	. .	43 31.37	10.44	1.53	IV.	2	7.922	53 5.8	9.2	13.0	43 43.34	42 8.0
21	9	. .	. .	. .	26.0	45.0	4.0	. .	44 25.86	10.42	1.34	IV.	3	17.445	43 7.5	9.0	10.5	44 37.62	32 7.0
22	7.8	. .	9.0	27.8	47.0	6.1	25.0	. .	47 47.00	10.38	0.95	IV.	4	44.036	15 17.5	8.6	3.6	48 58.33	4 9.7
23	8.9	. .	15.5	. .	. .	12.7	31.8	. .	51 53.60	10.32	1.05	IV.	3	38.028	21 36.2	8.1	5.1	52 4.97	10 29.4
24	7.8	. .	. .	. .	59.0	18.4	37.0	. .	52 59.05	10.31	1.13	IV.	3	32.841	27 1.7	8.0	6.4	53 10.49	15 56.1
25	8	. .	. .	. .	. .	. .	58.0	17.1	53 19.65	10.31	1.44	VI.	2	16.423	44 12.5	7.9	10.8	53 31.40	33 11.2
26	8	. .	. .	18.0	37.1	56.1	15.4	. .	55 37.10	10.28	1.29	IV.	3	23.955	36 19.2	7.6	8.8	55 48.67	25 15.6
27	8.9	. .	24.0	43.0	2.1	21.0	40.0	. .	21 58 2.04	+10.25	+0.77	IV.	4	51.802	− 7 9.9	− 7.4	− 1.6	21 58 13.06	−35 55 58.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 14,	22	+ 3.248	− 0.024	− 0.356	+ 0.527	+ 0.022		

REMARKS.

Sept. 14. $18^h 49^m$, clear; stars unsteady.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 54	Sept. 14, 19 28	73 54 . .	. .	. .	. .	. .	. .	. .	. .	. .	77.7			
	19 47	. .	. .	. .	. .	. .	. .	. .	. .	. .	77.5			
	20 4	. .	. .	. .	. .	. .	. .	. .	29.926	80.5	77.9			
	20 15	60.8	59.0	75.0	62.0	49.0	41.0	57.80	29.928	80.5	77.8	80.0	79.0	
Zone 55	Sept. 14, 21 2	75 9 60.9	58.6	75.1	61.9	49.1	41.0	57.77	29.926	80.0	77.2	79.6	78.6	77.8
	21 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	77.0			
	21 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	76.6			
	21 58	. .	. .	. .	. .	. .	. .	. .	29.920	79.0	75.9			
	22 0	75 9 60.5	58.1	75.1	61.3	48.4	40.9	57.42	. .	. .	. .	78.8	78.0	

ZONE 55. SEPTEMBER 14. C. $D_0 = -35° 48' 40'$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
28	8.9	. .	. .	21.5	40.5	. .	. .	. .	22 12 40.59	+10.05	+1.54	IV.	2	8.566	−52 25.7	− 5.8	−12.8	22 12 52.18	−36 41 24.3
29	8.9	. .	23.6	. .	1.8	. .	39.8	59.2	15 1.76	10.01	1.29	IV.	3	20.841	39 34.4	5.5	9.6	15 13.06	28 29.5
30	8	. .	24.8	. .	3.0	. .	. .	50.6	17 3.10	9.99	1.22	IV.	3	24.142	36 7.5	5.4	8.7	17 14.31	25 1.6
31	8	. .	. .	. .	. .	15.8	35.2	. .	17 56.81	9.98	1.24	V.	3	23.088	37 13.6	5.3	9.0	18 8.03	26 7.9
32	7	. .	18.5	37.1	56.1	. .	34.4	. .	22 56.32	9.91	0.81	IV.	4	44.588	14 42.9	4.8	3.5	23 7.04	36 3 31.2
33	8	. .	. .	42.0	1.1	20.0	. .	. .	24 1.02	9.89	0.64	IV.	4	53.181	5 43.5	4.8	1.3	24 11.55	35 54 29.6
34	8	. .	. .	. .	. .	48.0	7.0	. .	24 28.88	9.89	0.97	V.	3	35.989	23 44.2	4.7	5.6	24 39.74	36 12 34.5
35	8	. .	. .	. .	. .	33.5	52.5	. .	25 14.31	9.88	1.15	V.	3	26.468	33 41.7	4.6	8.1	25 25.34	22 34.4
36	9	. .	. .	. .	. .	56.5	. .	. .	27 37.43	9.84	0.83	V.	4	42.576	16 48.9	4.4	4.0	27 48.10	36 5 37.3
37	7.8	. .	36.5	55.1	14.4	33.5	52.6	. .	31 14.44	9.79	0.68	IV.	4	50.601	8 25.4	4.1	2.0	31 24.91	35 57 11.5
38	8	. .	30.1	49.1	8.0	. .	46.7	. .	43 8.29	9.63	1.42	IV.	2	8.940	52 2.1	3.3	12.7	43 19.34	36 40 58.1
39	6.7	5.5	24.5	44.0	3.0	22.2	41.3	0.3	22 50 2.96	9.53	1.00	IV.	3	29.641	30 22.6	2.8	7.2	22 50 13.49	19 12.6
40	8	. .	14.0	33.0	52.0	11.1	30.2	. .	23 1 52.08	+ 9.37	+0.85	IV.	3	35.858	−23 52.3	− 2.2	− 5.7	23 2 2.30	−36 12 40.2

ZONE 56. SEPTEMBER 15. P. $D_0 = -25° 47' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	27.0	44.5	2.0	19.0	. .	. .	. .	19 12 18.91	+10.53	+0.75	IV.	2	22.115	−38 16.6	−45.4	− 4.4	19 12 30.19	−26 26 26.4
2	8	. .	52.0	. .	. .	46.0	. .	. .	12 27.59	10.53	0.74	V.	2	21.328	39 6.0	45.3	4.5	12 38.86	27 15.8
3	7	25.0	42.3	59.5	16.5	. .	. .	. .	17 16.65	10.49	0.71	IV.	1	12.285	48 29.9	44.1	5.5	17 27.85	36 39.5
4	8	34.5	51.5	9.0	. .	. .	. .	. .	19 25.96	10.47	0.80	III.	3	35.830	23 54.0	43.6	2.9	19 37.23	12 0.5
5	8	. .	. .	. .	48.0	. .	. .	. .	19 48.02	10.47	0.84	IV.	4	43.810	15 31.6	43.5	2.1	19 59.33	3 37.2
6	9	. .	. .	. .	. .	. .	49.0	. .	20 14.75	10.47	0.83	VI.	4	41.300	18 8.7	43.4	2.3	20 26.05	6 14.4
7	7	. .	19.5	37.0	. .	. .	. .	. .	21 53.98	10.46	0.84	III.	4	44.820	14 28.3	42.9	2.0	22 5.28	26 2 33.2
8	8	. .	. .	. .	. .	. .	. .	27.0	21 35.64	10.46	0.88	VII.	4	56.340	2 24.6	43.0	0.8	21 46.98	25 50 28.4
9	7	. .	. .	13.0	30.0	. .	. .	. .	23 30.11	10.44	0.76	IV.	3	27.690	32 24.9	42.6	3.8	23 41.31	26 20 31.3
10	8	. .	55.0	12.0	. .	. .	. .	. .	26 29.33	10.42	0.70	III.	2	11.500	49 22.1	41.8	5.5	26 40.44	37 29.4
11	8	. .	. .	. .	. .	58.0	16.0	. .	26 41.27	10.42	0.79	V.	3	34.400	25 24.1	41.8	3.1	26 52.48	13 29.0
12	8	37.0	. .	11.0	. .	. .	. .	. .	29 28.28	10.39	0.79	III.	3	39.963	23 45.7	41.1	2.9	29 39.46	11 49.7
13	9	. .	. .	. .	53.0	. .	. .	. .	36 53.05	10.33	0,77	IV.	3	31.397	28 32.5	39.3	3.4	37 4.15	26 16 35.2
14	7	. .	46.0	3.0	20.5	. .	. .	. .	38 20.32	10.32	0.84	IV.	4	47.785	11 22.0	38.9	1.7	38 31.48	25 59 22.6
15	8	. .	. .	. .	. .	5.0	. .	. .	38 47.80	10.32	0.77	V.	3	32.300	27 35.9	38.8	3.3	39 58.89	26 15 38.0
16	8	. .	. .	. .	. .	38.0	. .	. .	41 20.74	10.29	0.70	V.	2	16.135	44 31.4	38.3	5.0	41 31.73	32 34.7
17	8	. .	51.5	. .	. .	. .	. .	17.5	43 25.66	10.28	0.70	VII.	2	15.245	45 26.6	37.8	5.1	43 36.64	33 29.5
18	6	. .	. .	. .	. .	. .	2.2	19.5	46 27.80	10.25	0.67	VI.	1	7.434	53 33.2	37.1	6.0	46 38.72	41 36.3
19	8	. .	. .	. .	. .	13.0	30.5	. .	47 55.90	10.24	0.69	V.	2	12.050	48 47.3	36.8	5.5	48 6.83	36 49.6
20	7	. .	4.0	21.0	. .	. .	. .	. .	49 38.30	10.22	0.70	III.	2	14.003	47 47.8	36.4	5.2	49 49.22	35 49.4
21	9	. .	. .	23.0	. .	. .	15.0	. .	50 40.38	10.22	0.67	VI.	1	7.300	53 41.7	36.1	6.0	50 51.27	41 43.8
22	8	. .	1.5	19.0	. .	. .	. .	. .	51 36.08	10.20	0.68	III.	2	11.040	49 50.7	35.9	5.6	51 46.96	37 52.2
23	8	. .	. .	. .	. .	. .	55.0	. .	51 20.67	10.20	0.75	VI.	3	27.303	32 49.2	36.0	3.8	51 31.62	20 49.0
24	8	. .	9.0	26.0	. .	. .	. .	. .	53 43.28	10.19	0.72	III.	2	21.210	39 13.4	35.5	4.5	53 54.19	27 13.4
25	8	29.0	. .	4.0	20.5	. .	. .	. .	57 20.65	10.15	0.82	IV.	4	47.100	12 5.2	34.7	1.7	57 31.62	0 1.6
26	9	. .	. .	19.0	. .	. .	. .	. .	59 36.18	10.13	0.73	III.	3	26.005	34 10.5	34.2	4.0	59 47.04	22 8.7
27	7	. .	. .	. .	. .	5.0	22.0	. .	19 59 47.65	10.13	0.66	V.	2	9.725	51 12.9	34.2	5.7	19 59 58.44	39 12.8
28	9	. .	. .	. .	. .	2.5	18.5	. .	20 0 44.74	10.13	0.75	V.	3	29.510	30 30.9	34.0	3.6	20 0 55.62	18 28.5
29	9	. .	. .	. .	13.0	. .	. .	. .	2 55.84	10.12	0.79	IV.	4	40.570	18 55.2	33.7	2.4	2 6.75	6 51.3
30	9	. .	. .	23.0	. .	. .	. .	. .	3 40.19	10.11	0.66	III.	2	10.730	50 10.1	33.4	5.6	3 50.96	38 9.1
31	9	. .	. .	. .	. .	. .	. .	44.0	3 52.43	10.11	0.70	VII.	2	18.690	41 50.6	33.3	4.7	4 3.24	29 48.6
32	9	39.0	. .	13.5	. .	. .	. .	. .	20 8 30.61	+10.06	+0.72	III.	2	22.690	−37 40.6	−32.3	− 4.3	20 8 41.39	−26 25 37.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 15,	22	+ 2.484	− 0.021	− 0.356	+ 0.527	+ 0.022		

REMARKS.

(56) 20. Micrometer reading assumed as 13r.003 instead of 14r.003.

(56) 26. Declination apparently about 30″ too large by Mural and Meridian Circle in 1847.

(56) 29. Transit over T. V assumed as recorded over T. IV, and minutes as 1, not 2.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 55	Sept. 14, 22 17	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.6			
	22 43	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.2			
	23 0	60.0	58.2	75.5	61.5	48.6	40.9	57.45	29.906	78.2	74.8	77.5	77.4	78.0
Zone 56	Sept. 15, 19 10	65 9 66.6	61.5	79.0	65.2	52.4	45.7	61.73						
	19 43	. .	. .	. .	. .	. .	. .	. .	30.048	76.7	67.7	79.0	. .	78.0
	20 18	. .	. .	. .	. .	. .	. .	. .	30.051	75.8	65.5			
	20 40	. .	. .	. .	. .	. .	. .	. .	30.052	75.0	64.5			
	20 50	65.5	62.4	79.7	64.8	54.5	43.6	61.75						
	21 15	. .	. .	. .	. .	. .	. .	. .	30.086	74.0	63.8			

ZONE 56. SEPTEMBER 15. P. $D_0 = -25° 47' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	8	. .	. .	. .	. .	44.0	1.0	. .	20 11 26.65	+10.04	+0.66	V.	2	11.833	−49 0.8	−31.7	− 5.5	20 11 37.35	−26 36 58.0
34	9	11.0	. .	. .	. .	. .	. .	. .	14 2.49	10.01	0.72	IV.	3	26.175	34 0.1	31.2	3.9	14 13.22	21 55.2
35	6	. .	. .	7.7	24.7	. .	. .	16.0	15 24.70	10.00	0.74	IV.	3	29.243	30 47.6	20.9	3.6	15 35.44	18 42.1
36	5.6	. .	. .	33.5	50.5	8.0	. .	. .	18 50.67	9.97	0.78	IV.	4	41.510	17 56.2	30.2	2.3	19 1.42	5 48.7
37	9	. .	. .	. .	24.0	. .	. .	. .	23 24.04	9.93	0.73	IV.	3	27.193	32 56.2	29.2	3.9	23 34.70	20 49.3
38	9	. .	8.5	26.0	. .	. .	. .	. .	27 42.99	9.89	0.77	III.	3	38.420	21 11.7	28.4	2.6	27 53.65	9 2.7
39	9	39.0	. .	13.0	. .	. .	. .	. .	29 30.28	9.87	0.75	III.	4	36.480	23 12.1	28.0	2.9	29 40.90	11 3.0
40	5	. .	. .	. .	16.0	33.5	50.5	. .	32 16.13	9.84	0.67	IV.	2	16.912	43 42.7	27.5	4.9	32 26.64	31 35.1
41	8	53.0	10.0	27.0	44.3	. .	. .	. .	34 44.31	9.82	0.71	IV.	3	26.377	33 47.5	27.0	3.9	34 54.84	21 38.4
42	5.6	21.0	38.0	55.3	12.3	. .	. .	. .	40 12.40	9.77	0.71	IV.	3	28.104	31 59.0	25.9	3.7	40 22.88	19 48.6
43	7	16.0	33.0	. .	7.0	. .	. .	. .	42 7.23	9.76	0.76	IV.	4	39.086	20 28.3	25.5	2.6	42 17.75	8 16.4
44	8	29.5	46.5	3.7	20.7	. .	. .	. .	45 20.81	9.73	0.76	IV.	4	39.083	20 28.5	24.9	2.6	45 31.30	8 16.0
45	9	. .	. .	. .	. .	. .	12.5	. .	45 38.12	9.73	0.65	VI.	2	13.755	47 0.2	24.8	5.3	45 48.50	34 50.3
46	9	50.0	7.0	24.0	. .	. .	. .	. .	49 41.42	9.68	0.65	III.	2	13.655	47 7.0	24.1	5.3	49 51.75	26 34 56.4
47	9	. .	. .	. .	. .	. .	53.0	. .	50 1.61	9.68	0.80	VI.	4	50.000	9 2.3	24.0	1.4	50 12.09	25 56 47.7
48	7	. .	20.3	37.3	54.0	. .	. .	. .	20 57 54.37	9.61	0.73	IV.	3	37.813	21 49.7	22.7	2.7	20 58 4.71	26 9 35.1
49	7	56.0	13.0	30.0	47.5	. .	. .	. .	21 5 47.44	9.53	0.65	IV.	2	16.770	43 51.7	21.0	5.0	21 5 57.62	31 37.7
50	8	31.0	47.5	5.0	. .	. .	56.0	. .	9 22.05	9.49	0.68	IV.	3	27.760	32 20.5	20.4	3.8	9 32.22	26 20 4.7
51	6	. .	28.0	45.0	. .	. .	. .	. .	15 2.23	9.44	0.79	III.	4	56.070	2 43.0	19.4	0.8	15 12.46	25 50 23.2
52	7	. .	. .	. .	. .	38.0	55.0	. .	15 20.77	9.43	0.71	V.	3	35.470	24 16.9	19.4	3.0	15 30.91	26 11 59.3
53	7.8	. .	. .	. .	55.7	12.5	. .	. .	16 55.53	9.42	0.79	IV.	4	53.713	5 10.0	19.2	1.0	17 5.74	25 52 50.2
54	7	57.0	14.0	. .	48.5	. .	. .	. .	19 48.44	9.39	0.69	IV.	3	30.100	29 53.8	18.7	3.5	19 58.52	26 17 36.0
55	7	1.0	18.0	35.3	. .	. .	. .	. .	21 52.42	9.37	0.67	III.	3	26.030	34 8.9	18.4	4.0	22 2.46	26 21 51.3
56	7	. .	. .	. .	. .	. .	9.0	26.5	21 34.99	9.37	0.80	V.	4	55.713	3 4.9	18.4	0.8	21 45.16	25 50 44.1
57	7	. .	. .	. .	. .	6.0	. .	. .	22 48.86	9.36	0.76	V.	4	49.370	9 42.5	18.2	1.5	22 58.98	25 57 22.2
58	7	. .	. .	. .	. .	. .	35.0	. .	23 0.78	9.36	0.75	VI.	4	47.885	16 28.7	18.2	2.1	23 10.89	26 4 9.0
59	8	. .	. .	. .	. .	. .	. .	9.0	23 17.63	9.36	0.77	VII.	4	53.490	5 22.8	18.2	1.0	23 27.76	25 53 2.0
60	8	36.0	53.0	10.3	. .	. .	. .	. .	26 27.36	9.33	0.79	III.	4	47.840	11 18.7	17.7	1.6	26 37.48	25 58 58.0
61	7	30.5	47.7	4.7	21.3	. .	. .	. .	29 21.76	9.30	0.72	IV.	4	40.255	19 15.1	17.3	2.4	29 31.78	26 6 54.8
62	8	16.0	33.0	50.0	. .	. .	. .	. .	31 7.24	9.28	0.77	III.	4	52.850	6 4.3	17.0	1.1	31 17.29	25 53 42.4
63	8	. .	38.0	55.0	. .	. .	. .	. .	32 12.30	9.27	0.63	III.	2	17.015	43 36.3	16.9	5.0	32 22.20	26 31 18.2
64	8	. .	42.0	59.0	15.5	. .	. .	. .	33 16.05	9.26	0.62	IV.	2	16.053	44 36.7	16.7	5.1	33 25.93	32 18.5
65	8	. .	. .	. .	. .	18.5	. .	. .	34 1.20	9.26	0.59	V.	1	7.900	53 4.2	16.7	5.9	34 11.05	40 46.8
66	7	. .	. .	. .	. .	. .	. .	15.0	39 23.40	9.20	0.61	VII.	2	14.263	46 28.2	16.0	5.2	39 33.21	26 34 9.4
67	8	. .	. .	. .	. .	26.0	. .	. .	41 8.90	9.18	0.77	V.	4	55.725	3 4.2	15.8	0.8	41 18.85	25 50 40.8
68	8	48.5	6.0	23.0	. .	. .	. .	. .	43 40.11	9.16	0.72	III.	4	42.780	16 36.4	15.4	2.2	43 49.99	26 4 14.0
69	8	20.3	38.0	54.0	. .	. .	. .	. .	45 11.81	9.14	0.63	III.	2	19.353	41 10.0	15.2	4.7	45 21.58	28 49.9
70	7.8	55.5	12.3	29.5	46.7	. .	. .	. .	47 46.73	9.12	0.69	IV.	3	34.910	24 51.9	14.9	3.0	47 56.54	12 29.8
71	9	. .	27.0	. .	. .	. .	. .	. .	50 1.33	9.09	0.67	II.	3	30.600	29 22.1	14.7	3.5	50 11.09	17 0.3
72	8	. .	. .	8.7	. .	43.0	. .	. .	50 25.85	9.09	0.72	IV.	4	43.007	16 22.1	14.6	2.2	50 35.66	3 58.9
73	9	. .	. .	. .	. .	. .	. .	47.0	50 55.43	9.09	0.64	VII.	3	22.203	38 8.7	14.6	4.4	51 5.16	25 47.7
74	6.7	. .	. .	. .	. .	49.0	6.0	. .	21 55 31.66	9.04	0.59	V.	2	12.060	48 46.7	14.0	5.5	21 55 41.29	36 26.2
75	7	. .	. .	50.3	. .	24.5	. .	. .	22 0 7.37	9.00	0.61	V.	2	18.220	42 20.8	13.5	4.8	22 0 16.98	29 59.1
76	8	43.0	. .	17.7	. .	. .	. .	. .	2 34.61	8.98	0.70	IV.	4	40.790	18 41.3	13.2	2.4	2 44.29	26 6 16.9
77	4.5	. .	. .	. .	8.5	25.5	. .	. .	5 8.42	8.95	0.74	IV.	4	51.322	7 40.3	12.9	1.3	5 18.11	25 55 14.5
78	7	. .	. .	. .	. .	. .	6.5	. .	6 32.17	8.94	0.64	VI.	3	24.472	35 46.7	12.8	4.1	6 41.75	26 23 23.6
79	4	. .	. .	44.5	2.0	19.0	. .	. .	8 1.81	8.92	0.57	IV.	2	10.000	50 55.8	12.6	5.7	8 11.30	38 34.1
80	7	31.0	48.5	5.5	22.7	. .	. .	. .	13 22.64	8.87	0.69	IV.	4	39.994	19 31.3	12.0	2.5	13 32.20	7 5.8
81	8	. .	. .	. .	38.0	55.0	. .	. .	22 14 37.84	+ 8.86	+0.58	V.	2	12.795	−48 0.6	−11.9	− 5.4	22 14 47.28?	− 35 37.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(56) 47. Transit over T. VII assumed as recorded over T. VI.

(56) 58. Micrometer reading assumed as $42^r.885$ instead of $47^r.885$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 56	Sept. 15,	21 40	64.2	63.4	80.2	65.0	55.3	42.5	61.77						
		22 0	. .	. .	. .	. .	. .	. .	. .	30.096	72.0	60.5			
		22 29	. .	. .	. .	. .	. .	. .	. .	30.098	71.0	59.0			
		23 0	65 9 66.6	. .	. .	. .	. .	. .	. .	30.104	69.5	57.9			
		23 30	. .	. .	. .	. .	. .	. .	. .	30.103	68.3	57.5			
		23 59	. .	. .	. .	. .	. .	. .	. .	30.110	67.7	56.5			
		0 0	62.4	64.5	79.2	66.0	54.8	41.0	61.32	. .	. .	. .	68.5	66.5	77.0

ZONE 56. SEPTEMBER 15. P. $D_{\circ} = -25° 47' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
82	9	..	..	..	57.5	..	..	..	22 16 57.53	+ 8.84	+0.69	IV.	4	40.450	−19 2.8	−11.7	− 2.4	22 17 7.06	−26 6 36.9
83	9	..	..	..	5.0	..	..	..	24 5.03	8.76	0.56	IV.	1	10.640	50 12.8	10.9	5.7	24 14.35	37 49.4
84	7	54.0	11.0	28.0	45.0	..	..	..	29 45.28	8.71	0.61	IV.	2	22.120	38 16.3	10.4	4.4	29 54.60	25 51.1
85	7.8	..	..	33.0	50.0	7.0	..	..	30 50.01	8.70	0.65	IV.	3	31.885	28 1.7	10.3	3.3	30 59.36	15 35.3
86	7	5.0	22.0	39.0	56.5	..	..	..	32 56.34	8.68	0.68	IV.	4	39.223	20 19.9	10.1	2.5	33 5.70	7 52.5
87	7	0.7	..	35.3	52.0	..	..	..	34 52.25	8.66	0.60	IV.	3	21.067	39 20.3	10.0	4.5	35 1.51	26 54.8
88	7	17.3	34.5	51.7	8.7	..	..	..	37 8.76	8.63	0.68	IV.	4	40.410	13 51.5	9.8	2.4	37 18.07	1 23.7
89	8	..	47.0	4.0	21.0	..	..	..	38 21.17	8.62	0.65	IV.	3	36.170	23 32.9	9.6	2.9	38 30.44	11 5.4
90	6	..	58.0	15.5	32.3	..	..	..	39 32.51	8.61	0.54	IV.	1	6.770	54 16.5	9.6	6.0	39 41.66	41 52.1
91	8	37.0	54.0	11.0	..	..	..	..	44 28.32	8.56	0.63	III.	3	29.155	30 53.0	9.2	3.6	44 37.51	18 25.8
92	8	..	..	..	..	..	..	23.0	44 31.58	8.56	0.70	VII.	4	46.685	12 29.8	9.2	1.7	44 40.84	26 0 0.7
93	8	..	..	..	..	..	22.0	..	44 47.81	8.56	0.71	VII.	4	50.050	8 59.2	9.1	0.9	44 57.07	25 56 29.2
94	9	..	44.5	..	19.0	..	..	..	49 19.94	8.51	0.64	IV.	3	32.610	27 16.3	8.8	3.3	49 28.09?	26 14 48.4
95	4	57.3	14.7	31.7	..	..	..	..	51 48.81	8.49	0.71	III.	4	48.855	10 15.0	8.6	1.5	51 58.01	25 57 45.1
96	4.5	..	..	..	..	24.0	41.0	..	52 6.70	8.48	0.60	V.	2	22.265	38 7.2	8.6	4.4	52 15.78	26 25 40.2
97	8	48.0	4.7	22.0	..	..	..	..	55 49.30	8.45	0.56	III.	2	14.535	46 12.0	8.4	5.2	55 58.31	33 45.6
98	7.8	..	..	1.5	18.0	36.0	..	..	22 56 18.49	8.44	0.58	IV.	2	18.610	41 56.5	8.3	4.8	22 56 27.51	29 29.6
99	6	48.0	55.0	23.0	40.0	..	..	..	23 0 39.83	8.40	0.54	IV.	1	10.013	50 52.1	8.0	5.8	23 0 48.77	38 25.9
100	9	..	23.0	..	..	..	..	..	3 57.31	8.37	0.64	II.	3	34.230	25 34.4	7.8	3.1	4 6.32	13 5.3
101	8	42.5	59.3	16.7	34.0	..	..	..	6 33.88	8.35	0.60	IV.	3	25.113	35 6.6	7.7	4.1	6 42.83	22 38.4
102	9	..	3.0	..	..	..	..	..	9 37.33	8.32	0.61	II.	3	31.095	28 51.1	7.5	3.4	9 46.26	16 22.0
103	9	..	..	..	55.0	..	..	..	10 55.05	8.31	0.61	IV.	3	29.767	30 14.6	7.4	3.6	11 3.97	17 45.6
104	8	6.0	23.0	40.0	57.0	..	..	..	12 57.21	8.29	0.66	IV.	4	42.500	16 54.0	7.4	2.2	13 6.16	4 23.6
105	6.7	29.0	47.0	3.3	20.3	..	..	..	20 20.65	8.21	0.62	IV.	3	32.710	27 10.0	7.0	3.2	20 29.48	14 40.2
106	7	..	..	35.5	..	10.0	..	..	23 52.71	8.18	0.54	V.	2	13.930	46 49.5	6.9	5.3	24 1.43	34 21.7
107	6.7	48.3	5.0	22.3	39.3	..	..	..	28 39.49	8.14	0.65	IV.	4	42.750	16 38.2	6.7	2.2	28 48.28	4 7.1
108	9	..	..	..	..	25.0	..	..	30 7.84	8.12	0.66	V.	4	43.860	15 28.2	6.6	2.0	30 16.62	2 56.8
109	8	..	..	..	22.0	..	57.0	..	35 22.38	8.07	0.62	IV.	3	35.716	24 1.3	6.5	2.9	35 31.07	11 30.7
110	9	..	..	..	52.0	10.0	..	..	36 52.40	8.06	0.56	IV.	2	18.760	41 47.0	6.4	4.8	37 1.02	29 18.2
111	5	3.0	20.0	37.0	54.0	..	..	..	41 54.23	8.02	0.62	IV.	3	37.330	22 20.2	6.4	2.7	42 2.87	26 9 49.3
112	5	..	..	29.0	..	3.3	21.0	..	44 46.37	7.99	0.70	V.	4	57.053	1 40.9	6.3	0.7	44 55.06	25 49 7.9
113	9	49.5	7.0	24.0	..	..	..	..	52 41.20	7.92	0.55	III.	2	20.587	39 52.5	6.3	4.6	52 49.67	26 27 23.4
114	9	..	..	44.0	..	..	..	..	54 1.19	7.91	0.49	III.	1	11.240	49 35.3	6.3	5.6	54 9.59	37 7.2
115	9	..	..	46.0	..	..	..	..	55 3.17	7.90	0.58	III.	3	33.530	26 18.5	6.3	3.2	55 11.65	13 48.0
116	9	..	..	..	..	34.0	..	8.0	55 16.69	7.90	0.61	V.	4	41.250	18 12.3	6.3	2.3	55 25.20	5 40.9
117	6.7	41.0	58.0	15.0	32.0	..	..	..	23 59 32.23	+ 7.87	+0.59	IV.	3	36.080	−23 38.5	− 6.3	− 2.9	23 59 40.69	−26 11 7.7

ZONE 57. SEPTEMBER 16. C. $D_{\circ} = -38° 19' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	..	18.0	37.2	57.5	17.1	37.0	..	20 24 57.38	+10.07	+1.12	IV.	4	43.523	−15 49.8	−27.1	− 4.9	20 25 8.57	−38 35 51.8
2	9.10	..	..	..	20.0	..	..	19.8	32 20.15	9.97	0.91	IV.	2	14.089	46 39.8	25.7	15.9	32 31.03	39 6 51.4
3	9.10	..	42.1	..	21.4	..	1.2	..	40 21.59	9.86	1.00	IV.	3	32.389	27 30.3	24.3	9.6	40 32.45	38 47 33.6
4	8.9	..	..	..	23.0	42.0	..	22.0	41 22.65	9.85	0.98	IV.	3	30.711	29 15.4	24.1	9.7	41 33.48	49 19.2
5	8.9	..	..	..	13.0	..	53.0	..	42 13.31	9.83	1.01	IV.	3	36.544	23 9.5	24.0	7.5	42 25.15	43 11.0
6	9.10	..	..	..	..	..	43.0?	..	46 3.69	9.78	1.07	VI.	4	47.106	12 3.9	23.3	3.7	46 14.54	38 32 0.9
7	7	..	58.6	18.5	38.2	58.2	..	38.0	52 38.33	9.70	0.84	IV.	2	14.324	46 25.2	22.2	15.9	52 48.87	39 6 33.3
8	7	..	32.1	..	11.8	31.2	..	11.5	53 11.72	9.69	0.80	IV.	2	8.333	52 40.3	22.1	18.2	53 22.21	39 12 50.6
9	8.9	..	..	52.7	12.0	32.0	51.4	..	20 57 12.20	+ 9.63	+1.00	IV.	4	40.683	−18 48.1	−21.5	− 6.0	20 57 22.83	−38 38 45.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 16,	22	+ 1.622	− 0.027	− 0.356	+ 0.527	+ 0.022		

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 57	Sept. 16, 20 20	77 39 63.0	65.7	80.0	70.0	53.1	45.0	62.80	. .	. .	60.1	66.0	67.0	72.0
	20 32	. .	. .	. .	. .	. .	. .	. .	30.150	66.5	59.9			
	20 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	59.9			
	20 59	. .	. .	. .	. .	. .	. .	. .	30.142	65.8	59.0			
	21 30	63.0	66.9	79.6	70.6	54.9	43.9	63.15	30.138	65.1	57.8	64.0	65.5	
	21 45	. .	. .	. .	. .	. .	. .	. .	. .	. .	58.0			
	22 1	. .	. .	. .	. .	. .	. .	. .	30.138	64.0	56.4			
	22 30	. .	. .	. .	. .	. .	. .	. .	30.128	63.5	54.2			
	22 40	62.1	67.9	80.1	70.5	55.9	43.6	63.35	. .	. .	55.0	61.2	63.2	

REMARKS.

(56) 88. Micrometer assumed as $45^{r}.410$ instead of $40^{r}.410$.

ZONE 57. SEPTEMBER 16. C. $D_0 = -38° 19' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	7.8	. .	57.8	17.7	37.5	57.0	16.7	. .	20 59 37.36	+ 9.60	+1.02	IV.	4	46.941	−12 15.0	−21.1	− 3.7	20 59 47.98	−38 32 9.8
11	9	. .	55.5	. .	35.1	. .	15.7	. .	21 4 35.47	9.53	0.78	IV.	2	9.508	51 26.7	20.4	17.7	21 4 45.78	39 11 34.8
12	9.10	. .	. .	6.2	. .	. .	6.2	. .	8 26.31	9.48	0.82	IV.	2	18.931	41 36.2	19.8	14.1	8 36.61	39 1 40.1
13	9	. .	6.4	26.0	45.8	6.0	25.5	. .	11 45.95	9.44	0.90	IV.	3	31.348	28 35.6	19.3	9.4	11 56.29	38 48 34.3
14	8	. .	. .	41.1	1.0	20.8	. .	. .	14 0.93	9.40	1.05	IV.	4	56.692	2 3.8	19.0	0.7	14 11.38	21 53.5
15	6.7	. .	9.7	29.3	49.0	8.6	28.1	. .	16 48.98	9.37	1.00	IV.	4	50.508	8 31.3	18.6	2.5	16 59.35	28 22.4
16	9.10	. .	. .	0.0	. .	. .	. .	. .	18 19.79	9.34	0.83	III.	2	24.569	35 42.9	18.4	11.9	18 29.96	55 43.2
17	9	. .	. .	. .	. .	32.5	. .	. .	18 12.68	9.34	0.83	V.	2	25.181	35 2.4	18.4	11.7	18 22.85	55 2.5
18	8	. .	. .	. .	. .	19.7	39.3	. .	19 59.90	9.32	0.90	V.	3	35.561	24 11.1	18.2	7.8	20 10.12	44 7.1
19	8	. .	26.0	46.7	. .	25.7	45.1	. .	33 5.90	9.13	0.92	IV.	3	42.512	16 54.8	16.4	5.3	33 15.95	38 36 46.5
20	7	. .	24.5	. .	. .	25.0	. .	5.0	35 4.91	9.10	0.66	IV.	2	7.289	53 46.9	16.2	18.6	35 14.67	39 13 51.7
21	7.8	. .	55.0	. .	34.0	53.8	. .	. .	35 34.18	9.10	0.70	IV.	2	13.271	47 31.6	16.1	16.3	35 43.98	39 7 34.0
22	7.8	. .	35.7	55.4	15.0	34.8	. .	. .	38 15.10	9.05	0.89	IV.	4	40.834	18 38.5	15.8	5.9	38 25.04	38 38 30.2
23	9.10	. .	. .	. .	. .	. .	41.0	. .	45 1?.32	8.95	0.66	VI.	2	10.540	50 21.5	14.9	17.3	45 10?.93	39 10 23.7
24	7	. .	8.2	28.5	48.2	8.0	27.7	. .	46 48.17	8.92	0.92	IV.	4	51.371	7 37.2	14.7	2.2	47 58.01	38 27 24.1
25	8	. .	26.0	45.2	. .	25.0	. .	3.8	47 5.09	8.91	0.92	IV.	4	50.681	8 20.3	14.7	2.4	47 14.92	38 28 7.4
26	7	. .	. .	. .	. .	. .	43.0	2.8	50 3.34	8.87	0.67	VI.	2	14.209	46 31.7	14.3	15.9	50 12.88	39 6 31.9
27	8	. .	. .	19.2	39.0	59.0	. .	. .	59 39.07	8.73	0.75	IV.	3	31.158	28 47.4	13.8	9.5	59 48.55	38 48 40.7
28	8.9	. .	. .	. .	43.0	3.0	. .	. .	21 59 43.15	8.73	0.86	IV.	4	48.247	10 53.3	13.8	3.3	21 59 52.74	30 40.4
29	8	. .	49.0	9.0	28.7	. .	8.0	. .	22 1 28.63	8.70	0.87	IV.	4	49.989	9 3.8	13.7	2.6	22 1 38.20	28 50.1
30	8	. .	. .	1.8	21.1	41.0	. .	. .	2 21.96	8.69	0.76	IV.	3	32.749	27 7.5	13.6	8.9	2 31.41	38 47 0.0
31	7.8	. .	. .	. .	. .	. .	. .	56.0	2 56.55	8.68	0.66	VII.	2	18.085	42 28.1	13.5	14.4	3 5.89	39 2 26.0
32	9	. .	. .	28.0	. .	. .	28.7	. .	9 49.02	8.58	0.58	IV.	2	9.979	50 57.1	13.0	17.5	9 58.18	39 10 57.6
33	8	. .	3.0	22.8	42.4	. .	. .	. .	15 42.54	8.50	0.64	IV.	3	22.157	38 12.0	12.7	12.8	15 51.68	38 58 7.5
34	7.8	. .	. .	. .	9.5	29.4	49.0	. .	16 9.66	8.48	0.79	IV.	4	43.946	15 23.1	12.6	4.8	16 18.93	35 10.4
35	8.9	. .	. .	37.4	57.0	16.7	36.0	. .	24 56.89	8.35	0.64	IV.	3	25.449	34 45.7	12.1	11.6	25 5.88	38 54 39.5
36	7	. .	27.5	47.5	7.0	27.2	47.0	. .	30 7.16	8.27	0.48	IV.	2	5.810	55 19.7	11.7	19.1	30 15.91	39 15 20.7
37	8	. .	. .	58.5	18.7	38.0	57.8	. .	34 18.42	8.20	0.78	IV.	4	51.481	7 30.2	11.4	2.1	34 27.40	38 27 13.6
38	7.8	. .	. .	. .	5.7	25.7	45.7	. .	39 5.90	8.12	0.55	IV.	2	19.891	40 36.0	10.9	13.7	39 14.57	39 0 30.4
39	7.8	. .	. .	. .	. .	. .	. .	28.0?	39 23.89	8.12	0.72	VII.	4	46.144	13 3.5	10.9	4.0	39 32.73	38 32 48.6
40	8	. .	. .	. .	. .	26.0	45.7	5.7	41 6.38	8.10	0.68	V.	4	41.068	18 23.5	10.8	5.8	41 15.16	38 10.1
41	8	. .	. .	15.5	35.0	. .	14.5	. .	47 35.10	8.00	0.58	IV.	3	27.401	32 43.2	10.7	10.9	47 43.58	52 34.8
42	8	. .	. .	57.8	17.7	37.1	56.9	. .	49 17.53	7.98	0.63	IV.	3	35.444	24 18.6	10.7	7.9	49 26.14	44 7.2
43	9	. .	. .	24.5	44.0	3.5	23.2	. .	52 43.97	7.93	0.72	IV.	4	51.576	7 24.2	10.7	2.1	52 52.62	38 27 7.0
44	7	. .	18.7	38.6	58.0	18.5	38.2	. .	22 54 58.39	7.89	0.45	IV.	1	11.612	54 25.8	10.7	16.9	22 55 6.73	39 14 23.4
45	9	. .	. .	20.0	. .	58.2	18.2	. .	23 12 39.03	7.62	0.67	IV.	4	48.289	10 50.7	9.9	3.2	23 12 47.32	38 30 33.8
46	9	. .	32.5	52.0	11.8	. .	51.4	11.0	20 11.88	7.51	0.60	IV.	4	44.181	15 8.5	9.4	4.7	20 19.99	38 34 52.6
47	9	. .	. .	. .	. .	47.0	6.8	26.2	22 26.94	7.48	0.36	V.	2	11.478	49 23.2	9.3	17.0	22 34.78	39 9 19.5
48	6.7	. .	. .	26.8	46.5	6.2	25.8	45.6	24 46.45	7.44	0.55	IV.	4	40.410	19 5.3	9.3	6.1	24 54.44	38 38 50.7
49	9	. .	. .	. .	29.5	. .	. .	. .	26 29.54	7.42	0.38	IV.	2	14.928	45 47.1	9.2	15.6	26 37.34	39 5 41.9
50	9	. .	. .	. .	. .	. .	. .	. .	29 . .	7.38	0.59	IV.	4	48.903	10 11.9	9.1	3.0	29 . .	38 29 54.0
51	8	. .	. .	36.0	55.8	15.7	35.3	. .	32 55.85	7.33	0.50	IV.	3	37.571	22 5.0	9.1	7.1	33 3.68	38 41 51.2
52	8	. .	. .	30.8	50.3	10.4	30.3	. .	36 50.51	7.27	0.31	IV.	2	10.911	49 58.7	9.0	17.2	36 58.09	39 9 54.9
53	8.9	. .	. .	. .	. .	18.0	37.8	57.2	37 58.15	7.25	0.44	V.	3	31.221	28 43.5	9.0	9.4	38 5.84	38 48 31.9
54	8	. .	. .	. .	. .	49.1	8.9	28.7	39 29.28	7.23	0.38	V.	3	20.901	39 30.6	8.9	13.3	39 36.89	59 22.8
55	8.9	. .	6.0	25.8	45.6	5.3	25.0	. .	47 45.54	7.11	0.38	IV.	3	25.935	34 15.0	8.9	11.4	47 53.03	38 54 5.3
56	8	. .	9.0	. .	48.5	8.1	28.0	. .	50 48.45	7.06	0.32	IV.	2	16.891	43 44.0	8.9	14.9	50 55.83	39 3 37.8
57	7	. .	. .	48.5	8.2	28.0	48.0	. .	55 8.33	7.00	0.42	IV.	3	35.381	24 22.5	8.9	7.9	55 15.75	38 44 9.3
58	8	. .	42.3	2.3	21.8	41.8	1.7	. .	23 59 22.00	6.94	0.40	IV.	3	33.746	26 4.9	8.9	8.5	23 59 29.34	45 52.3
59	7	32.4	52.1	11.9	31.8	51.5	11.1	30.8	0 5 31.66	+ 6.85	+0.42	IV.	3	39.822	−19 43.5	− 9.0	− 6.3	0 5 38.93	−38 39 28.8

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 57	Sept. 16, 23 12	. .	. .	. .	. .	. .	. .	. .	30.118	61.8	52.4			
	23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.0			
	23 29	. .	. .	. .	. .	. .	. .	. .	30.112	60.2	53.5			
	23 50	61.5	68.6	79.7	71.0	55.6	43.0	63.23	. .	. .	52.3	60.0	63.0	71.0
	23 59	. .	. .	. .	. .	. .	. .	. .	30.108	59.5	53.5			

REMARKS.

(57) 24. Minutes assumed as 47 instead of 46.

(57) 32. Transit over T. III rejected.

(57) 39. Transit assumed at $23^s.0$, to agree with Transit 1846 and Lacaille 9253.

(57) 44. Micrometer reading assumed as $6^r.612$ instead of $11^r.612$.

ZONE 58. SEPTEMBER 19. P. $D_0 = -29° 33' 10''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	44.0	1.5	19.5	37.0	. .	. .	. .	19 31 37.18	+ 7.22	+1.00	IV.	3	28.643	−31 25.2	−15.6	− 4.8	19 31 45.40	−30 4 55.6
2	5.6	. .	. .	9.5	27.0	45.0	. .	. .	46 27.16	7.09	1.24	IV.	4	57.325	1 24.1	12.2	0.8	46 35.49	29 34 47.1
3	7	. .	. .	. .	6.0	. .	. .	. .	48 56.03	7.06	0.91	IV.	1	6.273	54 47.7	11.6	8.0	49 4.00	30 28 17.3
4	8.7	11.5	29.0	. .	5.0	. .	. .	. .	52 4.86	7.03	1.03	IV.	2	22.122	38 16.2	11.0	5.7	52 12.92	30 11 42.9
5	7	. .	51.0	. .	26.5	. .	. .	. .	57 26.52	6.98	1.18	IV.	4	42.493	16 54.4	9.8	2.8	57 34.68	29 50 17.0
6	6	. .	. .	. .	55.0	13.0	. .	. .	19 57 55.11	6.98	1.07	IV.	3	24.752	35 29.2	9.7	5.3	19 58 3.16	30 8 54.2
7	8	10.0	28.0	46.0	. .	. .	. .	. .	20 0 3.51	6.96	1.15	III.	3	36.660	23 2.0	9.2	3.6	20 0 11.62	29 56 24.8
8	8	. .	. .	. .	23.5	. .	. .	. .	0 23.56	6.96	1.10	V.	3	29.317	30 43.0	9.1	4.7	0 31.62	30 4 6.8
9	7	52.0	10.0	28.0	. .	. .	. .	. .	2 45.53	6.94	1.13	III.	3	33.570	26 16.0	8.6	4.1	2 53.60	29 59 38.7
10	5	29.3	47.0	5.0	23.0	. .	. .	. .	6 22.87	6.90	0.98	IV.	1	6.956	54 4.8	7.8	7.9	6 30.75	30 27 30.5
11	8	. .	36.0	. .	11.0	. .	. .	. .	8 11.27	6.88	1.20	IV.	4	41.633	17 48.4	7.4	3.0	8 19.35	29 51 8.8
12	7	5.0	23.0	40.5	58.5	. .	. .	. .	9 58.42	6.86	1.13	IV.	3	28.182	31 54.3	7.1	4.8	10 6.41	30 5 16.2
13	6	. .	. .	. .	4.5	. .	. .	. .	11 4.49	6.86	1.29	V.	4	52.447	6 29.3	6.8	1.5	11 12.64	29 39 47.6
14	8	. .	. .	. .	. .	. .	39.0	. .	11 3.61	6.86	1.30	VII.	4	52.740	6 10.3	6.8	1.5	11 11.77	39 28.6
15	8	. .	. .	. .	34.0	. .	. .	. .	13 33.97	6.83	1.31	IV.	4	54.630	4 13.2	6.3	1.2	13 42.11	29 37 30.7
16	8	. .	53.0	10.5	. .	46.0	. .	. .	15 28.34	6.81	1.17	V.	3	31.685	28 14.2	5.9	4.4	15 36.32	30 1 34.5
17	7	. .	. .	. .	. .	. .	. .	4.5	16 11.20	6.80	1.21	VII.	3	37.735	21 54.0	5.8	3.5	16 19.21	29 55 13.3
18	7	. .	9.0	26.0	44.3	. .	. .	. .	18 44.92	6.78	1.24	IV.	4	41.003	18 27.9	5.2	3.1	18 52.94	29 51 46.2
19	7	29.0	47.0	5.0	. .	. .	. .	. .	20 21 24.09	+ 6.05	+1.12	III.	2	22.420	−37 57.6	− 4.7	− 5.7	20 21 31.26	−30 11 18.0

ZONE 59. SEPTEMBER 19. P. $D_0 = -33° 18' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	18.0	36.0	. .	. .	. .	20 29 36.29	+ 7.95	+0.63	IV.	3	36.705	−22 59.3	−26.0	− 4.3	20 29 48.87	−33 41 49.6
2	5.6	. .	. .	28.0	46.5	4.5	. .	. .	30 46.33	7.94	0.78	IV.	2	21.815	38 35.4	25.8	7.3	30 55.05	57 28.5
3	8	. .	59.0	. .	35.0	. .	. .	. .	39 35.50	7.84	0.56	IV.	4	44.245	15 4.5	24.2	2.7	39 43.90	33 51.4
4	5.6	35.3	53.5	12.3	. .	49.3	. .	. .	42 30.72	7.80	0.65	IV.	3	34.510	25 17.2	23.6	4.7	42 39.17	33 44 5.5
5	7	. .	. .	. .	2.0	20.0	. .	. .	50 1.68	7.71	0.92	IV.	1	8.530	52 25.0	22.3	10.0	50 10.31	34 11 17.3
6	8	. .	. .	12.0	31.0	. .	. .	. .	51 30.74	7.70	0.54	IV.	4	45.633	13 37.2	22.0	2.5	51 38.98	33 32 21.7
7	6.7	. .	. .	. .	3.0	. .	39.5	. .	52 2.81	7.69	0.51	IV.	4	49.157	9 56.1	21.9	1.8	52 11.01	28 39.8
8	8	. .	. .	6.0	. .	. .	. .	. .	56 24.55	7.64	0.80	III.	2	20.110	40 22.3	21.2	7.6	56 32.99	59 11.1
9	8	. .	. .	. .	. .	. .	14.0	. .	56 37.15	7.63	0.49	VI.	4	51.386	7 35.4	21.1	1.3	56 45.27	33 26 17.8
10	8	. .	33.0	. .	10.0	28.0	. .	. .	20 59 9.89	7.60	0.88	V.	1	11.680	49 7.5	20.7	9.3	20 59 18.37	34 7 57.5
11	7	. .	24.0	43.0	1.0	. .	. .	. .	21 1 1.19	7.58	0.50	IV.	4	50.427	8 36.4	20.4	1.5	21 1 9.27	33 27 18.3
12	8	3.0	22.0	41.0	. .	. .	. .	. .	5 59.03	7.52	0.70	III.	3	30.455	29 31.5	19.5	5.5	6 7.25	48 16.5
13	9	. .	. .	. .	. .	6.0	. .	. .	8 47.53	7.48	0.51	VI.	4	48.590	10 30.7	19.0	1.9	8 55.52	29 11.6
14	8	. .	. .	. .	. .	5.0	. .	. .	9 46.47	7.47	0.63	V.	3	36.710	22 58.9	18.8	4.3	9 54.57	41 42.0
15	6.7	44.5	2.5	21.5	. .	. .	. .	. .	27 39.84	7.25	0.65	III.	3	35.480	24 16.2	15.9	4.5	27 47.74	42 56.6
16	9	. .	. .	. .	. .	. .	7.0	. .	27 29.59	7.25	0.67	VI.	3	32.785	27 4.9	16.0	5.0	27 37.51	45 45.9
17	9	. .	20.0	. .	57.0	. .	. .	. .	33 57.09	7.17	0.77	IV.	2	22.770	37 35.5	15.0	7.1	34 5.03	56 17.6
18	4	57.0	15.0	34.0	52.3	. .	. .	. .	35 52.33	7.14	0.64	IV.	3	35.957	23 46.2	14.7	4.4	36 0.11	42 25.3
19	7	. .	44.0	2.5	21.0	. .	. .	. .	37 20.97	7.13	0.47	IV.	4	53.383	5 30.9	14.5	0.9	37 28.57	24 6.3
20	9	. .	. .	. .	. .	32.0	. .	. .	38 13.50	7.11	0.60	V.	4	39.970	19 32.4	14.4	3.6	38 21.21	38 10.4
21	9	0.0	18.0	37.5	. .	. .	. .	. .	43 35.57	7.04	0.76	III.	3	23.910	36 21.8	13.6	6.8	43 43.37	55 2.2
22	9	. .	11.5	. .	49.0	. .	. .	. .	45 48.75	7.02	0.61	IV.	4	39.230	20 19.4	13.3	3.7	45 56.38	38 56.4
23	7	. .	. .	. .	. .	41.0	59.0	. .	46 22.24	7.01	0.64	V.	3	35.610	24 8.0	13.2	4.5	46 29.89	42 45.7
24	5	34.3	53.0	11.0	. .	. .	. .	. .	59 29.76	6.84	0.65	III.	3	35.295	24 27.8	11.6	4.5	59 37.25	43 3.9
25	9	. .	. .	13.0	. .	9.0	. .	. .	59 31.00	6.84	0.62	V.!	3	37.683	21 57.8	11.6	4.0	59 38.46	40 33.4
26	7	. .	. .	. .	. .	. .	. .	45.5	21 59 49.87	+ 6.83	+0.73	VII.	3	27.265	−32 51.1	−11.5	− 6.2	21 59 57.43	−33 51 28.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 19	18	+ 0.030	− 0.019	− 0.415	+ 0.429	+ 0.022		

REMARKS.

Sept. 19, 20h 21m. Perfectly clear.

(58) 3. Transit over T. IV assumed as at 56s.0 instead of 6s.0, to agree with Transit Z., 1847, and Arg. Z. 235.68.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 58	Sept. 19,	19 30	68 54 64.0	63.6	79.0	68.0	53.3	44.3	62.03	30.208	71.8	63.7	72.0	71.5	71.0
		20 21	. .	. .	. .	. .	. .	. .	. .	30.216	70.0	61.8			
Zone 59	Sept. 19,	20 30	72 39 65.2	67.0	80.0	68.8	55.5	43.3	63.30	30.216	70.0	61.8			
		21 1	. .	. .	. .	. .	. .	. .	. .	30.216	69.0	60.6			
		21 43	. .	. .	. .	. .	. .	. .	. .	30.216	68.0	60.0			
		22 9	. .	. .	. .	. .	. .	. .	. .	30.216	67.0	59.5			
		22 30	64.6	67.0	79.6	68.8	55.4	42.5	62.98						
		22 44	. .	. .	. .	. .	. .	. .	. .	30.222	66.5	58.7			
		23 31	. .	. .	. .	. .	. .	. .	. .	30.216	65.7	58.2			

ZONE 59. SEPTEMBER 19. P. $D_0 = -33° 18' 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
27	8	. .	. .	. .	47.0	5.0	. .	. .	22 9 46.71	+ 6.70	+0.86	V.	2	14.060	−46 41.4	−10.4	− 8.9	22 9 54.27	−34 5 20.7
28	9	56.0	14.0	32.5	51.0	. .	. .	. .	13 51.10	6.65	0.61	IV.	4	39.105	20 27.1	10.0	3.8	13 58.36	33 39 0.9
29	9	59.5	18.0	36.5	55.0	. .	. .	. .	15 55.12	6.62	0.82	IV.	2	17.697	42 53.6	9.8	8.1	16 2.56	34 1 31.5
30	9	. .	. .	46.0	4.3	. .	. .	. .	17 4.45	6.61	0.88	IV.	1	11.690	49 7.0	9.7	9.4	17 11.94	34 7 46.1
31	6	20.0	38.3	56.5	15.0	. .	. .	. .	30 15.26	6.44	0.73	IV.	3	27.125	33 0.4	8.5	6.2	30 22.43	33 51 35.1
32	9	. .	11.0	29.0	48.0	. .	. .	. .	31 47.82	6.42	0.48	IV.	4	52.343	6 36.2	8.3	1.2	31 54.72	25 5.7
33	9	. .	. .	. .	. .	0.0	. .	. .	37 41.50	6.34	0.57	V.	4	42.700	16 41.0	7.9	3.0	37 48.41	35 11.9
34	7	. .	. .	. .	. .	40.0	. .	. .	38 21.40	6.33	0.79	V.	3	20.770	39 38.9	7.8	7.5	38 28.52	58 14.2
35	5.6	34.7	53.0	12.0	30.0	. .	. .	. .	41 30.14	6.29	0.58	IV.	4	42.155	17 15.7	7.6	3.2	41 37.01	35 46.2
36	4	8.3	27.0	45.3	3.7	. .	. .	. .	44 3.83	6.26	0.63	IV.	3	37.000	21 38.0	7.4	4.0	44 10.72	40 9.4
37	9	. .	. .	. .	20.0	39.0	. .	. .	49 20.22	6.19	0.81	IV.	2	19.267	41 15.3	7.0	7.8	49 27.22	59 50.1
38	9	58.0	16.5	35.0	. .	. .	. .	. .	55 53.55	6.10	0.72	III.	3	27.780	32 19.1	6.7	6.0	56 0.37	50 51.8
39	9	. .	. .	. .	18.0	. .	55.0	. .	22 56 18.05	6.10	0.59	IV.	4	40.565	18 55.5	6.7	3.5	22 56 24.74	37 25.7
40	3.4	. .	. .	18.0	36.5	54.7	. .	. .	23 10 36.52	5.91	0.44	IV.	4	56.340	2 25.9	5.9	0.4	23 10 42.87	20 52.2
41	7	53.5	12.0	30.0	48.7	. .	. .	. .	31 48.76	5.64	0.56	IV.	4	44.153	15 10.3	5.4	2.7	31 54.96	33 38.4
42	7	28.3	46.7	5.0	23.5	. .	. .	. .	35 23.69	5.59	0.76	IV.	3	23.980	36 17.6	5.4	6.8	35 30.04	54 49.8
43	8	59.7	18.0	37.0	55.0	. .	. .	. .	37 55.21	5.56	0.67	IV.	3	32.780	27 5.5	5.3	5.1	38 1.44	45 35.9
44	7	5.0	23.3	42.0	0.7	. .	. .	. .	44 0.59	5.49	0.78	IV.	2	21.595	38 49.3	5.4	7.3	44 6.86	33 57 22.0
45	7	. .	. .	. .	47.0	5.0	. .	. .	49 46.71	5.42	0.82	V.	2	17.647	42 56.6	5.4	8.2	49 52.95	34 1 30.2
46	7	33.0	51.3	10.3	28.7	. .	. .	. .	23 58 28.56	5.31	0.60	IV.	4	40.093	19 25.1	5.6	3.6	23 58 34.47	33 37 54.3
47	9	38.0	. .	15.5	33.5	. .	. .	. .	0 0 33.61	+ 5.29	+0.54	IV.	4	45.675	−13 34.6	− 5.7	− 2.4	0 0 39.44	−33 32 2.7

ZONE 60. SEPTEMBER 21. C. $D_0 = -37° 4' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	24.5	44.5	3.6	23.0	42.3	. .	19 41 3.62	+ 8.42	. .	IV.	4	47.681	−11 28.6	−25.8	− 2.3	19 . . .	−37 16 6.7
2	7.8	. .	. .	. .	. .	. .	. .	37.0?	41 38.61	8.42	. .	VII.	3	22.541	37 47.2	25.6	9.9	. . . .	42 32.7
3	8	. .	0.7	19.8	38.5	58.5	17.7	. .	19 46 39.05	8.36	. .	IV.	3	34.638	25 9.0	24.5	6.2	. . . .	29 49.7
4	7.8	. .	58.1	17.8	37.0	56.7	16.0	. .	49 37.12	8.33	. .	IV.	2	18.754	41 47.3	23.9	11.1	. . . .	46 30.3
5	9	. .	. .	12.2	31.6	51.0	10.2	. .	51 31.61	8.31	. .	IV.	4	48.222	10 54.8	23.5	2.2	. . . .	15 30.5
6	8	. .	15.8	. .	54.0	14.4	33.6	. .	53 54.64	8.29	. .	IV.	4	44.548	14 45.4	23.0	3.3	. . . .	19 21.7
7	7.8	. .	. .	. .	. .	. .	. .	. .	19 54 . .	8.29	. .	VII.	2	9.419	51 32.1	23.	14.0	. . . .	56 17.
8	9	. .	. .	. .	31.0	50.5	. .	. .	20 3 31.06	8.17	. .	IV.	4	46.614	12 35.6	21.2	2.6	. . . .	17 9.4
9	9	. .	. .	31.6	50.8	10.0	29.2	. .	10 50.76	8.09	. .	IV.	4	44.691	14 36.3	19.9	3.2	. . . .	19 9.4
10	9	. .	. .	33.0	52.2	. .	30.8	. .	11 52.24	8.07	. .	IV.	4	41.719	17 43.9	19.7	4.1	. . . .	22 17.7
11	8	. .	15.8	35.0	54.3	13.8	33.4	. .	14 54.47	8.04	. .	IV.	3	35.858	23 52.4	19.2	5.8	. . . .	28 27.4
12	7	. .	21.8	41.0	1.0	20.1	39.2	. .	17 0.62	8.00	. .	IV.	2	17.506	48 19.5	18.8	11.5	. . . .	52 59.8
13	8.9	. .	19.0	37.7	57.3	17.0	36.2	. .	18 57.46	7.99	. .	IV.	4	43.922	15 24.6	18.5	3.4	. . . .	19 56.5
14	9	. .	. .	. .	34.0	. .	. .	32.2	22 34.06	7.94	. .	IV.	4	43.568	15 46.9	17.9	3.6	. . . .	20 18.4
15	9	. .	. .	. .	. .	. .	10.0?	. .	26 34.16	7.89	. .	VI.	3	27.471	32 38.8	17.2	8.4	. . . .	37 14.4
16	7.8	. .	. .	. .	. .	. .	. .	2.6	27 4.10	7.88	. .	VII.	2	11.398	49 27.3	17.[illegible]	13.4	. . . .	54 7.9
17	9	. .	51.0	. .	30.0	49.2	8.2	. .	29 29.79	7.85	. .	IV.	4	46.758	12 26.5	16.7	2.6	. . . .	16 55.8
18	9	. .	. .	. .	. .	. .	. .	35.1	38 36.59	7.73	. .	VII.	2	10.938	49 55.9	15.2	13.5	. . . .	54 34.6
19	8.9	. .	. .	. .	. .	. .	56.0	15.7	39 17.48	7.72	. .	VI.	4	44.176	15 8.0	15.1	3.3	. . . .	19 36.4
20	8.9	. .	. .	. .	. .	. .	43.2	2.0	40 4.17	7.71	. .	VI.	4	39.664	19 51.2	14.9	4.7	. . . .	24 20.8
21	9	. .	. .	. .	54.0	. .	32.0	. .	44 53.64	7.65	. .	IV.	3	36.787	22 54.1	14.1	5.5	. . . .	27 23.7
22	9	. .	5.0	25.2	44.0	3.8	. .	. .	46 44.25	7.63	. .	IV.	2	11.281	49 35.8	13.8	13.4	. . . .	54 13.0
23	7	. .	34.4	54.1	13.2	32.8	51.5	. .	52 13.24	7.55	. .	IV.	4	53.799	5 4.5	12.9	0.5	. . . .	9 27.9
24	7	. .	51.0	10.5	29.7	49.5	8.8	. .	55 29.91	+ 7.51	. .	IV.	2	16.085	−44 34.7	−12.3	−11.9	. . . .	−37 49 8.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 21, 18	− 0.419	− 0.020	− 0.415	+ 0.429	+ 0.022		

REMARKS.

(59) 36. γ Piscis Australis. Micrometer reading assumed as $38^r.0$ instead of $37^r.0$.

Sept. 21. Apparently clear; stars unsteady, variable, as if through clouds.

(60) 12. Micrometer reading assumed as $12^r.506$ instead of $17^r.506$.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 59	Sept. 19,	0 0	72 39 63.7	67.5	79.6	69.5	55.4	42.5	63.03	30.216	65.7	58.2	65.0	65.0	70.5
Zone 60	Sept. 21,	19 30	76 24 62.1	60.5	75.2	65.0	49.8	42.7	59.22	. .	. .	. .	73.2	72.1	71.0
		19 41	. .	. .	. .	. .	. .	. .	. .	30.108	73.8	69.0			
		20 3	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.3			
		20 22	. .	. .	. .	. .	. .	. .	. .	30.122	72.5	66.3			
		20 40	62.2	61.0	75.7	65.0	49.9	41.4	59.20	. .	. .	64.8	70.2	70.5	
		20 59	. .	. .	. .	. .	. .	. .	. .	30.130	71.5	64.2			
		21 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.2			
		21 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.9			

ZONE 60. SEPTEMBER 21. C. $D_\circ = -37° 4' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	9	. .	33.5	. .	. .	. .	. .	. .	20 58 12.53	+ 7.47	. .	II.	2	13.521	−47 15.3	−11.8	−12.7	. . . .	−37 51 49.8
26	8.9	. .	. .	. .	. .	51.3	. .	. .	58 31.82	7.47	. .	V.	3	25.984	34 11.9	11.8	8.8	. . . .	38 42.5
27	7.8	. .	26.0	. .	5.0	. .	43.5	3.0	59 4.78	7.46	. .	VI.	2	14.702	46 0.8	11.6	12.4	. . . .	50 34.8
28	7	. .	. .	. .	. .	. .	. .	45.5	20 59 47.42	7.45	. .	VII.	4	45.456	13 46.8	11.5	3.0	. . . .	18 11.3
29	9	. .	. .	53.0	. .	. .	51.0	. .	21 5 12.27	7.37	. .	IV.	2	19.156	41 22.2	10.5	11.0	. . . .	45 53.7
30	9	. .	. .	. .	. .	. .	. .	25.0?	9 26.98	7.32	. .	VII.	4	50.151	8 52.1	9.7	1.6	. . . .	13 13.4
31	9	. .	. .	. .	. .	. .	29.8?	. .	10 51.07	7.30	. .	VI.	3	38.856	20 43.9	9.4	4.9	. . . .	25 8.2
32	9	. .	. .	. .	. .	. .	3.0?	. .	11 24.35	7.29	. .	VI.	4	46.359	12 50.9	9.3	2.7	. . . .	17 12.9
33	9	. .	31.0	50.2	. .	. .	. .	. .	15 9.79	7.23	. .	III.	3	20.082	40 22.0	8.6	10.7	. . . .	44 51.3
34	9	. .	. .	36.7	56.5	15.6	. .	. .	17 56.26	7.20	. .	IV.	3	19.754	40 42.6	8.0	10.8	. . . .	45 11.4
35	9	. .	. .	. .	. .	. .	40.0	59.7	18 1.26	7.19	. .	VI.	4	25.080	35 6.3	8.0	9.1	. . . .	39 33.4
36	7.8	. .	56.3	15.9	35.0	54.5	13.8	. .	21 35.12	7.15	. .	IV.	4	51.186	7 48.8	7.4	1.3	. . . .	12 7.5
37	6.7	. .	40.2	59.7	18.7	38.0	58.0	17.0	25 18.94	7.09	. .	IV.	4	45.061	14 13.1	6.9	3.1	. . . .	18 33.1
38	9	. .	. .	. .	. .	. .	29.5?	. .	25 50.83	7.09	. .	VI.	4	44.358	14 56.5	6.8	3.3	. . . .	19 16.6
39	8.9	. .	5.0	24.6	43.2	3.8	23.0	. .	28 43.92	7.05	. .	IV.	2	15.112	45 29.5	6.4	12.2	. . . .	49 58.1
40	8	. .	. .	39.5	59.0	18.7	38.5	. .	29 59.18	7.03	. .	IV.	2	16.447	44 12.1	6.2	11.8	. . . .	48 40.1
41	9	. .	. .	. .	. .	. .	. .	16.3?	30 18.19	7.02	. .	VII.	4	43.771	15 32.4	6.1	3.5	. . . .	19 52.0
42	9	. .	8.3	28.1	47.2	6.9	26.3	. .	32 47.34	6.99	. .	IV.	3	21.208	39 11.6	5.8	10.3	. . . .	43 37.7
43	9	. .	. .	20.0	. .	59.2	. .	38.7	36 39.78	6.93	. .	IV.	2	13.286	47 30.2	5.2	12.8	. . . .	51 58.2
44	8	. .	44.0	3.3	22.7	42.0	1.2	. .	40 22.66	6.88	. .	IV.	4	40.386	19 6.9	4.7	4.5	. . . .	23 26.1
45	7.8	. .	. .	44.1	3.4	23.0	. .	. .	44 3.51	6.82	. .	IV.	3	28.642	31 25.3	4.2	8.0	. . . .	35 47.5
46	8	. .	33.1	. .	. .	. .	. .	10.1	47 11.88	6.78	. .	IV.	3	33.058	26 48.1	3.8	6.7	. . . .	31 8.6
47	6	. .	33.4	53.1	12.8	32.0	51.8	11.0	47 12.59	6.78	. .	IV.	2	7.776	53 15.0	3.8	14.5	. . . .	57 43.3
48	8	. .	. .	. .	. .	. .	. .	33.0	48 34.88	6.76	. .	VII.	4	42.741	16 37.1	3.6	3.8	. . . .	20 54.5
49	7	. .	14.0	33.0	52.7	12.0	31.5	. .	51 52.66	6.71	. .	IV.	3	47.161	12 2.9	3.1	2.5	. . . .	16 18.5
50	8.9	. .	. .	. .	. .	9.8	. .	48.7	52 50.20	6.70	. .	V.	2	11.618	49 14.4	3.0	13.3	. . . .	53 40.7
51	8.9	. .	. .	. .	. .	. .	6.2	25.1	53 26.94	6.68	. .	VI.	2	15.921	44 44.3	2.9	12.0	. . . .	49 9 2
52	8	. .	11.7	. .	51.0	10.1	29.2	. .	21 5 50.64	+ 6.50	. .	IV.	4	45.952	−13 17.1	− 1.2	− 2.9	. . . .	−37 17 31.2

ZONE 61. SEPTEMBER 23. C. $D_\circ = -29° 32' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	29.5	47.0	4.5	. .	40.0	58.0	20 0 4.70	+ 6.50	+0.76	IV.	3	36.599	−23 6.0	−29.0	− 3.0	20 0 11.96	−29 56 28.0
2	8	. .	. .	. .	25.0	43.0	0.5	. .	0 25.08	6.50	0.84	IV.	3	29.349	30 44.0	28.9	4.1	0 32.42	30 4 4.0
3	8	. .	11.1	28.8	46.2	4.3	22.2	. .	2 46.53	6.48	0.79	IV.	3	33.551	26 17.3	28.4	3.4	2 53.80	29 59 39.1
4	6.7	. .	48.5	5.8	23.8	41.8	59.7	17.3	5 23.87	6.45	1.10	IV.	2	6.964	54 7.3	27.8	7.3	6 31.42	30 27 32.4
5	8	. .	. .	54.8	12.5	. .	. .	5.7	8 12.49	6.42	0.69	IV.	4	41.648	17 47.5	27.2	2.3	8 19.60	29 51 7.0
6	7.8	. .	. .	42.0	59.5	17.0	34.5	. .	9 59.37	6.41	0.83	IV.	3	28.171	31 54.9	26.8	4.2	10 6.61	30 5 15.9
7	8	. .	. .	. .	4.0	22.0	39.0	57.0	11 3.92	6.38	0.54	VI.	4	52.731	6 10.8	26.6	0.8	11 10.84	29 39 28.2
8	7.8	. .	. .	. .	6.0	23.8	41.0	59.0	11 5.87	6.38	0.56	IV.	4	52.384	6 33.6	26.6	0.8	11 12.81	29 39 51.0
9	9	. .	. .	35.1	52.8	. .	28.3	. .	14 52.80	6.36	0.98	IV.	2	14.902	45 48.8	25.8	6.1	15 0.14	30 19 10.7
10	9	. .	. .	. .	. .	. .	. .	22.5	15 29.15	6.35	0.78	IV.	3	31.668	28 15.4	25.7	3.7	15 36.28	30 1 34.8
11	8.9	. .	. .	. .	. .	. .	. .	5.7	16 12.39	6.34	0.72	VII.	3	37.721	21 54.9	25.5	2.9	16 19.45	29 55 13.3
12	7	. .	9.8	27.6	45.3	2.9	20.8	. .	18 45.29	6.32	0.68	VII.	3	41.002	18 28.9	25.0	2.4	18 52.29	29 51 46.3
13	7.8	. .	. .	5.7	23.3	41.5	59.0	. .	21 23.47	6.29	0.89	IV.	3	22.383	37 57.9	24.4	5.1	21 30.65	30 11 17.4
14	6.7	. .	. .	. .	. .	. .	12.7	30.8	21 37.49	6.29	0.50	VI.	4	55.421	3 22.7	24.4	0.4	21 44.28	29 36 37.5
15	7	. .	54.7	12.7	30.5	48.1	5.7	. .	24 30.59	6.26	0.62	IV.	4	44.607	14 41.7	23.8	1.9	24 37.47	47 57.4
16	9	. .	. .	. .	37.5	. .	4.0	21.8	29 38.20	6.20	0.61	IV.	4	45.558	13 42.0	22.7	1.8	29 45.01	46 56.5
17	8	. .	. .	51.0	8.9	26.8	44.8	. .	20 31 9.02	+ 6.18	+0.56	IV.	4	48.849	−10 15.2	−22.3	− 1.3	20 31 15.76	−29 43 29.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 23	18	− 1.513	− 0.011	− 0.415	+ 0.429	+ 0.022		

REMARKS.

(61) 4. Minutes assumed as 6 instead of 5.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 60	Sept. 21,	22 5	76 24 62.0	61.0	75.2	65.0	49.9	41.6	59.12	30.138	70.2	65.3	68.5	68.8	
Zone 61	Sept. 23,	20 0	68 54 64.1	63.1	77.1	68.9	53.2	44.9	61.88	30.140	71.2	66.6	71.5	70.3	69.0
		20 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.7			
		21 0	63.1	64.1	78.0	68.9	53.1	43.9	61.85	30.138	70.0	64.7	69.0	68.9	
		21 24	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.2			
		21 40	. .	. .	. .	. .	. .	. .	. .	30.138	69.0	63.4			
		22 0	63.0	64.1	78.0	68.5	53.0	43.1	61.62	. .	. .	63.2	67.0	68.0	
		22 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	63.3			
		22 31	. .	. .	. .	. .	. .	. .	. .	30.136	68.3	63.0			

ZONE 61. SEPTEMBER 23. C. $D_0 = -29° 32' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	9	. .	. .	. .	. .	. .	51.2	. .	20 31 15.61	+ 6.18	+0.53	VI.	4	52.361	− 6 34.2	−22.5	− 0.8	20 31 22.32	−29 39 47.5
19	7	. .	24.8	42.8	0.5	18.3	35.7	. .	34 0.43	6.15	0.71	IV.	3	36.032	23 41.5	21.9	3.1	34 7.29	56 56.5
20	8.9	. .	. .	5.7	. .	40.8	58.7	. .	35 23.25	6.14	0.61	IV.	4	43.752	15 35.3	21.6	2.0	35 30.00	48 48.9
21	8.9	. .	57.2	14.8	32.7	50.7	8.0	. .	37 32.69	6.12	0.67	IV.	3	39.164	20 25.0	21.2	2.7	37 39.48	53 38.9
22	9	. .	23.0	. .	57.8	16.7	. .	50.5	39 58.12	6.09	0.63	IV.	3	42.458	16 58.2	20.7	2.2	40 4.84	29 50 11.1
23	7.8	. .	50.6	8.1	25.6	43.5	. .	. .	42 25.86	6.06	0.94	IV.	2	13.798	46 57.9	20.2	6.3	42 32.86	30 20 14.4
24	7.8	. .	. .	. .	. .	44.5	2.0	20.2	42 26.89	6.06	0.72	V.	3	33.399	26 26.8	20.2	3.5	42 33.67	29 59 40.5
25	8.9	. .	. .	15.0	32.8	50.2	8.2	26.1	45 32.69	6.03	0.70	IV.	3	34.531	25 15.8	19.6	3.3	45 39.42	58 28.7
26	9	. .	. .	32.0	49.7	7.7	25.6	. .	45 49.88	6.02	0.67	IV.	3	37.187	22 29.1	19.6	2.9	45 56.57	55 41.6
27	8.9	. .	. .	. .	. .	. .	37.2	55.0	47 1.82	6.01	0.47	VI.	4	53.768	5 5.7	19.3	0.7	47 8.30	29 38 15.7
28	9	. .	. .	. .	53.8	. .	29.8	46.8	50 53.86	5.97	0.75	IV.	3	29.911	30 5.5	18.6	4.0	51 0.58	30 3 18.1
29	8	. .	. .	. .	. .	10.0	27.5	46.0	51 52.87	5.96	0.92	V.	2	14.391	45 18.0	18.4	6.2	51 59.75	18 32.6
30	8.9	. .	. .	. .	. .	13.5	31.5	49.0	51 55.67	5.96	0.92	V.	2	14.138	46 36.6	18.4	6.2	52 2.55	30 19 51.2
31	7	. .	. .	. .	47.6	5.7	23.4	40.7	53 47.76	5.94	0.51	IV.	4	50.368	8 40.1	18.1	1.1	53 54.21	29 41 49.3
32	8	. .	. .	. .	. .	21.5	39.5	56.8	55 3.82	5.92	0.53	V.	4	48.181	10 57.0	17.8	1.4	55 10.27	29 44 6.2
33	8	. .	14.5	32.8	50.7	8.1	25.7	. .	57 50.36	5.89	0.82	IV.	3	22.645	37 41.4	17.3	5.0	57 57.07	30 10 53.7
34	8	. .	0.7	17.8	35.7	. .	11.5	. .	20 59 35.89	5.87	0.79	IV.	3	25.327	34 53.3	17.0	4.6	20 59 42.55	8 4.9
35	6.7	. .	. .	40.7	. .	16.5	33.9	51.7	21 0 58.40	5.86	0.92	IV.	2	14.389	46 21.1	16.8	6.2	21 1 5.18	19 34.1
36	7	. .	17.7	35.7	53.0	10.8	28.7	. .	4 53.18	5.82	0.88	IV.	2	17.200	43 24.9	16.0	5.8	4 59.88	30 16 36.7
37	9	. .	. .	. .	49.2	. .	24.8	. .	5 49.27	5.80	0.67	IV.	3	34.478	25 19.2	15.9	3.3	5 55.74	29 58 28.4
38	8	. .	. .	42.6	0.7	18.7	36.5	. .	9 0.73	5.76	0.77	IV.	3	25.419	34 47.6	15.3	4.6	9 7.26	30 7 57.5
39	8	. .	. .	. .	. .	. .	9.8	27.5	9 34.27	5.76	0.60	VI.	4	39.698	19 49.0	15.2	2.6	9 40.63	29 52 56.8
40	8	. .	. .	. .	56.7	14.6	31.0?	59.7	10 56.35	5.75	0.67	IV.	3	34.129	25 41.8	15.0	3.3	11 2.77	58 49.3
41	6.7	. .	. .	. .	47.5	. .	22.8	40.7	12 47.44	5.72	0.55	IV.	4	44.461	14 51.0	14.7	1.9	12 53.71	29 47 57.6
42	7.8	. .	. .	. .	. .	. .	14.6	32.1	13 38.90	5.71	0.72	VI.	3	28.918	31 7.6	14.6	4.1	13 45.33	30 4 16.3
43	8	. .	8.1	. .	. .	1.7	19.0	. .	17 43.73	5.67	0.44	IV.	4	52.698	6 13.7	13.9	0.8	17 49.84	29 39 18.4
44	9	. .	. .	. .	. .	35.7?	. .	. .	18 17.95	5.66	0.53	V.	4	45.308	13 57.4	13.8	1.8	18 24.14	29 47 3.0
45	8	. .	16.0	33.7	52.0	10.0	. .	. .	24 51.82	5.60	0.75	IV.	3	25.598	34 36.3	12.7	4.6	24 58.17	30 7 43.6
46	6	. .	. .	37.2	55.1	13.1	30.8	48.6	25 55.11	5.60	0.91	IV.	2	12.400	48 25.7	12.6	6.5	26 1.62	21 34.8
47	7.8	. .	51.8	9.8	27.7	45.6	3.6	. .	29 27.70	5.53	0.86	IV.	2	15.062	45 38.8	12.0	6.1	29 34.09	18 46.9
48	8.9	. .	. .	. .	33.5	51.4	9.7	. .	30 33.75	5.52	0.74	IV.	3	24.828	35 24.4	11.9	4.7	30 40.01	8 31.0
49	9	. .	. .	. .	52.3	. .	29.?	. .	31 52.83	5.50	0.94	IV.	2	8.041	52 58.5	11.7	7.1	31 59.27	26 7.3
50	9	. .	. .	. .	. .	. .	. .	1.0?	33 6.60	5.49	0.88	VII.	2	12.831	47 57.5	11.5	6.4	33 12.97?	30 21 5.4
51	9	. .	12.8	. .	. .	. .	25.0	. .	39 48.92	5.41	0.61	IV.	3	34.758	25 1.4	10.6	3.3	39 54.94	29 58 5.3
52	7	. .	23.5	. .	69.0	. .	36.7	54.5	40 0.10	5.40	0.66	IV.	3	29.522	30 30.1	10.5	4.0	40 6.16	30 3 34.6
53	8	. .	17.0	. .	52.8	10.8	28.2	. .	46 52.74	5.32	0.89	IV.	2	9.691	51 15.2	9.5	6.9	46 58.95	30 24 21.6
54	9	. .	. .	. .	2.0	19.7	. .	. .	49 1.97	5.30	0.50	IV.	4	43.061	16 18.8	9.2	2.1	49 7.77	29 49 20.1
55	6.7	. .	9.5	27.1	44.9	2.5	20.7	. .	50 44.96	5.28	0.47	IV.	4	46.018	13 13.0	8.9	1.7	50 50.71	46 13.6
56	9	. .	. .	. .	. .	. .	53.5	. .	51 18.12	5.27	0.41	VI.	4	50.867	8 7.8	8.9	1.0	51 24.10	41 7.7
57	9	. .	. .	. .	21.0	49.0	. .	22.0	53 21.13	5.25	0.42	IV.	4	48.700	10 24.7	8.6	1.3	53 26.80	43 24.6
58	9	. .	54.5	. .	. .	. .	19.1	37.5	53 42.92	5.25	0.53	IV.	4	39.908	19 36.6	8.5	2.6	53 48.70	29 52 37.7
59	7.8	. .	. .	. .	. .	. .	. .	. .	53 . .	5.25	0.65	VII.	3	28.911	31 7.6	8.5	4.1	55 . .	30 4 10.2
60	7.8	. .	. .	. .	. .	48.0	6.0	. .	57 30.41	6.20	0.47	V.	4	44.422	14 53.0	8.0	1.9	57 36.08	29 47 52.9
61	7.8	. .	. .	. .	. .	. .	. .	0.?	21 58 8.52	5.19	0.83	VII.	2	13.046	47 44.1	7.9	6.4	21 58 14.54	30 20 48.4
62	9	. .	. .	. .	25.7	43.2	1.1	. .	22 4 25.51	5.12	0.79	IV.	2	17.039	43 34.8	7.1	5.8	22 4 31.42	16 37.7
63	9	. .	. .	. .	. .	12.5	. .	47.2	5 54.23	5.10	0.69	V.	3	24.801	35 26.0	6.9	4.7	6 0.02	8 27.6
64	9	. .	. .	35.7	56.7	. .	. .	51.0	7 56.95	5.09	0.65	IV.	3	27.965	32 7.7	6.7	4.2	8 2.69	5 8.6
65	9	. .	41.0	. .	16.5	34.0	. .	9.7	8 16.41	5.08	0.64	IV.	3	29.102	30 56.4	6.6	4.1	8 22.13	3 57.1
66	8.9	. .	29.7	48.0	5.7	23.6	41.6	. .	22 14 5.71	+ 5.01	+0.83	IV.	2	11.706	−49 9.0	− 5.9	− 6.6	22 14 11.54	−30 22 11.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 61	Sept. 23, 22 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	62.8			
	23 0	68 54 62.8	64.1	77.3	69.1	53.0	44.1	61.73	30.138	68.2	62.4	67.0	67.8	69.0

REMARKS.

(61) 29. Micrometer reading assumed as $15^r.391$ instead of $14^r.391$.

(61) 52. Transits discordant. Those over T.'s II and IV assumed to be 2^s too small.

(61) 56. Transit over T. VI assumed to have been recorded as over T. VII.

(61) 61. Transit assumed as at 2^s, to agree with Mural Z., 1847, and Arg. Z. 245.83.

ZONE 61. SEPTEMBER 23. C. $D_\circ = -29^\circ\ 32'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
67	8	. .	0.0	17.7	35.0	53.0	11.0	. .	22 17 35.35	+ 4.97	+0.47	IV.	4	41.906	−17 31.2	− 5.5	− 2.3	22 17 40.79	−29 50 29.0
68	8.9	. .	23.0	. .	58.7	16.4	34.1	. .	20 58.63	4.93	0.47	IV.	4	41.708	17 43.6	5.2	2.3	21 4.03	50 41.1
69	8	. .	. .	11.8	. .	47.0	5.0	. .	24 29.45	4.89	0.40	IV.	4	46.992	12 11.9	4.8	1.6	24 34.74	29 45 8.3
70	7.8	. .	. .	. .	. .	20.0	37.5	55.5	25 1.95	4.88	0.85	V.	2	7.869	53 9.0	4.8	7.1	25 7.68	30 26 10.9
71	7.8	. .	38.0	55.7	13.5	31.1	49.0	. .	29 13.47	4.83	0.43	IV.	4	43.016	16 21.6	4.4	2.1	29 18.73	29 49 18.1
72	8	. .	. .	24.5	42.1	0.1	17.8	. .	31 42.24	4.80	0.61	IV.	3	27.581	32 31.9	4.2	4.3	31 47.65	30 5 30.4
73	8	. .	. .	. .	. .	29.0	47.0	4.8	32 11.20	4.80	0.86	V.	2	6.808	54 17.0	4.2	7.3	32 16.86	27 18.5
74	7	. .	. .	37.5	55.0	13.1	31.0	. .	33 55.24	4.78	0.63	IV.	3	24.631	35 36.9	4.0	4.7	34 0.65	30 8 35.6
75	9	. .	4.0	21.8	39.8	57.5	. .	. .	35 39.65	4.77	0.35	IV.	4	49.149	9 56.6	3.8	1.3	35 44.77	29 42 51.7
76	8	. .	16.2	34.2	. .	. .	. .	46.0	40 52.13	4.70	0.75	IV.	2	13.741	47 1.5	3.5	6.3	41 57.58	30 20 1.3
77	8	. .	. .	. .	. .	8.2	26.2	44.2	40 50.66	4.70	0.52	V.	3	34.023	25 47.5	3.5	3.4	41 55.88	29 58 44.4
78	7	. .	. .	. .	. .	. .	34.0	52.0	42 58.44	4.67	0.75	VI.	1	13.911	46 47.5	3.3	6.2	43 3.86	30 19 47.0
79	8	. .	. .	. .	20.5	38.5	55.8	. .	44 20.51	4.65	0.52	IV.	3	34.151	25 39.6	3.2	3.4	44 25.68	29 58 36.2
80	9	. .	45.0	. .	20.2	. .	. .	13.6	46 20.35	4.63	0.61	IV.	3	26.310	33 51.6	3.1	4.5	46 25.59	30 6 49.2
81	8.9	. .	. .	. .	. .	. .	34.0	52.3	46 58.56	4.62	0.80	VI.	2	9.360	51 35.6	3.0	6.9	47 3.98	24 35.5
82	1.2	. .	57.2	15.2	33.5	51.5	9.2	. .	49 15.48	4.59	0.80	IV.	2	9.013	51 57.6	2.8	7.0	49 20.87	24 56.4
83	7.8	. .	. .	. .	17.2	35.5	53.6	. .	51 17.61	4.57	0.69	IV.	3	17.612	42 57.0	2.7	5.7	51 22.87	30 15 55.4
84	7.8	. .	. .	45.0	. .	19.5	37.2	55.0	53 2.03	4.55	0.29	IV.	4	52.370	6 34.5	2.6	0.8	53 6.87	29 39 27.9
85	8.9	. .	. .	51.0	10.0	. .	. .	2.0	22 53 9?.17	4.55	0.47	IV.	4	37.181	22 28.0	2.6	2.9	22 53 14.19	55 23.5
86	6.7	. .	32.2	50.2	8.0	. .	43.5	1.5	23 0 8.03	4.46	0.26	IV.	4	53.770	5 6.4	2.2	0.6	23 0 12.75	37 59.2
87	8	. .	18.8	36.5	54.5	12.3	29.4	. .	1 54.32	4.45	0.35	IV.	4	46.604	12 36.3	2.1	1.6	1 59.12	29 45 30.0
88	7.8	. .	. .	. .	. .	52.0	9.8	27.6	2 34.12	4.44	0.73	V.	2	13.595	47 10.6	2.1	6.3	2 39.29	30 20 9.0
89	9	. .	. .	. .	. .	11.8	. .	. .	23 4 53.89	+ 4.41	+0.76	V.	2	10.229	−50 41.4	− 2.0	− 6.8	23 4 59.06	−30 23 40.2

ZONE 62. SEPTEMBER 24. P. $D_\circ = -38^\circ\ 19'\ 40'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	2.5	. .	42.0	. .	. .	. .	19 19 42.03	+ 7.67	. .	IV.	3	28.050	−32 2.4	−18.2	−10.7	19 19 . .	−38 52 11.3
2	8	50.0	. .	. .	. .	. .	. .	48.5	27 49.24	7.59	. .	VII.	2	15.697	44 57.9	16.8	15.2	27 . .	39 5 9.9
3	7	47.5	6.5	26.7	46.7	. .	. .	. .	41 46.47	7.44	. .	IV.	3	33.197	26 39.5	13.6	8.9	41 . .	38 46 42.0
4	9	. .	17.0	. .	. .	. .	. .	. .	41 56.44	7.44	. .	IV.	4	45.290	13 58.9	13.6	4.7	42 . .	33 57.2
5	7	. .	. .	. .	0.5	20.0	. .	. .	46 0.41	7.39	. .	IV.	4	41.730	17 42.2	12.7	5.9	46 . .	37 40.8
6	6.7	. .	52.0	12.5	32.0	. .	. .	. .	47 31.87	7.38	. .	IV.	4	51.940	7 1.3	12.4	2.4	47 . .	38 26 56.1
7	9	4.0	24.0	. .	. .	. .	. .	. .	51 3.57	7.33	. .	II.	2	16.017	44 38.7	11.6	15.1	51 . .	39 4 45.4
8	9	. .	. .	. .	3.0	. .	. .	. .	51 3.05	7.33	. .	IV.	2	26.087	34 7.5	11.6	11.4	51 . .	38 54 10.5
9	6.7	. .	. .	7.5	27.0	. .	. .	. .	53 27.05	7.30	. .	IV.	4	57.585	1 8.4	11.1	0.5	53 . .	21 00.0
10	7	7.0	27.0	46.3	. .	. .	. .	. .	19 59 6.22	7.23	. .	III.	3	35.640	24 6.1	9.9	8.0	19 59 . .	44 4.0
11	8.9	. .	43.0	. .	. .	22.0	. .	. .	20 0 2.38	7.22	. .	II.	2	20.570	39 53.3	9.7	13.4	20 0 . .	59 56.4
12	7	30.0	49.7	9.5	29.3	. .	. .	. .	3 29.29	7.18	. .	IV.	3	26.995	33 8.5	9.0	11.1	3 . .	53 8.6
13	7	2.0	21.7	41.3	1.0	. .	. .	. .	20 25 1.05	+ 6.91	. .	IV.	4	43.290	−16 4.5	− 4.5	− 5.3	20 25 . .	−38 35 54.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 24,	20	− 1.620	− 0.015	− 0.415	+ 0.429	+ 0.022		

REMARKS.

(61) 82. Transit over T.'s III–VII assumed as recorded over T.'s II–VI.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 62	Sept. 24, 19 19	77 39 61.3	59.0	75.4	62.8	49.4	40.6	58.08	30.088	74.5	73.0	73.0	71.0	70.0
	19 46	. .	. .	. .	. .	. .	. .	. .	30.093	74.2	70.8			
	20 25	. .	. .	. .	. .	. .	. .	. .	30.100	73.4	69.9			

Zone 63. September 24. P. $D_0 = -28° 17' 30''$.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	33.5	50.5	8.0	26.0	. .	. .	. .	21 1 25.92	+ 5.70	+1.13	IV.	2	12.933	−47 52.1	−20.7	− 6.4	21 1 32.75	−29 5 49.2
2	7	. .	42.0	59.0	16.3	. .	. .	. .	3 16.65	5.68	0.65	IV.	4	46.253	12 58.4	20.4	1.1	3 22.98	28 30 49.9
3	9	. .	. .	. .	. .	. .	36.0	. .	5 0.85	5.66	1.00	VI.	2	21.290	39 8.1	20.1	5.3	5 7.51	28 57 3.5
4	9	. .	51.0	. .	. .	. .	. .	. .	7 26.28	5.63	1.16	II.	1	10.925	49 54.8	19.7	6.6	7 33.07	29 7 51.1
5	9	. .	. .	. .	. .	. .	. .	14.0	7 21.27	5.63	0.95	VII.	3	24.660	35 34.5	19.7	4.9	7 27.85	28 53 29.1
6	9	. .	. .	. .	6.0	. .	. .	. .	14 6.04	5.55	0.84	IV.	3	33.565	26 16.4	18.6	3.7	14 12.43	44 8.7
7	9	. .	15.0	. .	51.0	. .	. .	. .	17 50.56	5.51	0.75	IV.	3	40.333	19 11.7	17.9	2.8	17 56.82	37 2.4
8	7	. .	0.5	18.0	35.7	. .	. .	. .	24 35.62	5.44	0.69	IV.	4	44.475	14 50.1	16.8	2.3	24 41.75	32 39.2
9	8	. .	. .	. .	16.0	32.5	. .	. .	25 15.48	5.43	0.71	IV.	4	43.545	15 48.4	16.7	2.4	25 21.62	33 37.5
10	7	. .	5.0	23.0	40.3	. .	. .	. .	29 40.31	5.38	0.72	IV.	4	43.253	16 6.8	16.0	2.5	29 46.41	33 55.3
11	8	. .	. .	. .	15.3	. .	50.7	. .	33 15.51	5.34	0.54	IV.	4	54.697	4 9.0	15.4	1.0	33 21.39	21 55.4
12	7	. .	5.0	22.3	40.0	57.0	. .	. .	36 39.86	5.30	0.91	IV.	3	29.083	30 57.6	14.9	4.3	36 46.07	48 46.8
13	7	2.0	19.0	36.7	54.3	. .	. .	. .	38 54.27	5.28	0.61	IV.	4	50.350	8 41.3	14.6	1.5	39 0.16	26 27.4
14	8	. .	. .	. .	. .	. .	59.0	17.0	39 24.07	5.27	1.01	VI.	3	23.947	36 19.5	14.5	4.9	39 30.35	54 8.9
15	7	. .	. .	. .	0.0	. .	35.0	. .	42 0.00	5.24	0.77	IV.	4	39.503	20 2.3	14.1	2.9	42 6.01	37 49.3
16	8	. .	. .	. .	14.0	31.0	. .	. .	48 13.70	5.17	1.01	IV.	3	22.900	37 25.3	13.1	5.1	48 19.88	55 13.5
17	7	. .	. .	. .	52.5	10.0	. .	. .	50 52.47	5.14	0.54	V.	4	55.850	2 56.4	12.7	0.9	50 58.15	28 20 40.0
18	5.6	. .	. .	. .	. .	25.0	42.0	. .	52 7.05	5.12	1.23	V.	1	8.485	52 27.7	12.6	7.0	52 13.40	29 10 17.3
19	9	. .	. .	47.5	4.5	. .	. .	. .	55 4.81	5.09	0.90	IV.	3	31.355	28 35.2	12.1	4.0	55 10.80	28 46 21.3
20	7	. .	. .	. .	58.0	15.5	. .	. .	55 57.92	5.08	1.22	IV.	1	9.120	51 48.0	12.0	6.9	56 4.22	29 9 36.9
21	9	. .	. .	. .	. .	. .	5.0	. .	56 29.87	5.07	1.02	VI.	3	23.667	36 37.1	11.9	5.0	56 35.96	28 54 24.0
22	9	. .	. .	. .	. .	4.0	. .	. .	57 28.93	5.06	0.89	V.	3	32.545	27 1.4	11.8	3.8	57 34.88	44 47.0
23	8	. .	. .	44.0	. .	. .	. .	. .	59 1.58	5.04	0.92	III.	3	30.590	29 22.9	11.6	4.1	59 7.54	47 8.6
24	7	. .	. .	. .	. .	. .	40.0	57.5	21 59 4.82	5.04	1.00	VI.	3	25.350	34 51.7	11.6	4.7	21 59 10.86	28 52 38.0
25	7	. .	46.0	3.0	21.0	. .	. .	. .	22 1 20.94	5.02	1.12	IV.	2	16.790	43 50.4	11.3	5.9	22 1 27.08	29 1 37.6
26	9	. .	. .	. .	. .	. .	. .	24.0	1 31.46	5.02	0.61	VII.	4	52.450	6 28.0	11.3	1.3	1 37.09	28 24 11.6
27	9	. .	56.0	. .	. .	50.0	. .	. .	4 31.78	4.98	1.11	V.	2	16.805	43 49.3	10.9	5.9	4 37.87	29 1 36.1
28	5.6	. .	. .	. .	42.5	0.0	17.3	. .	5 42.42	4.97	0.69	V.	4	46.455	12 45.4	10.8	2.0	5 48.08	28 30 28.2
29	8	7.0	25.0	42.0	. .	. .	. .	. .	9 59.80	4.92	1.00	III.	3	26.015	34 9.8	10.3	4.7	10 5.72	51 54.8
30	7	. .	. .	28.0	45.0	3.0	. .	. .	10 45.33	4.91	1.07	IV.	3	20.690	39 43.9	10.2	5.4	10 51.31	57 29.5
31	9	. .	. .	. .	. .	25.0	. .	. .	12 7.36	4.89	1.09	V.	2	19.360	51 9.4	10.0	5.5	12 13.34	58 54.9
32	8	5.7	23.3	41.0	. .	. .	. .	. .	14 58.41	4.86	0.82	III.	4	38.760	20 48.9	9.7	3.0	15 4.09	38 31.6
33	7.8	46.5	4.0	21.7	39.0	. .	. .	. .	17 39.14	4.83	0.93	IV.	3	31.343	28 35.9	9.5	4.0	17 44.90	46 19.4
34	9	. .	. .	33.0	. .	. .	. .	. .	18 50 58	4.82	0.94	III.	3	30.060	29 56.1	9.4	4.1	18 56.34	47 39.6
35	8	35.0	52.5	10.0	27.5	. .	. .	. .	34 27.57	4.74	0.85	IV.	3	37.290	22 22.7	7.8	3.2	34 33.16	40 3.7
36	9	. .	. .	. .	. .	. .	. .	39.0	34 46.23	4.74	1.06	VII.	2	21.920	38 27.9	7.8	5.2	34 52.03	28 56 10.9
37	6.7	. .	32.0	. .	7.2	. .	. .	. .	45 7.28	4.51	1.30	IV.	1	6.093	54 59.0	6.9	7.3	45 13.09	29 12 43.2
38	8	51.0	8.7	26.3	. .	. .	. .	. .	47 43.78	4.49	0.98	III.	3	28.455	31 37.0	6.7	4.4	47 49.25	28 49 18.1
39	7	32.7	50.5	8.0	25.3	. .	. .	. .	49 25.47	4.47	0.94	IV.	3	31.587	28 20.5	6.6	4.0	49 30.88	46 1.1
40	9	. .	. .	. .	23.0	. .	. .	. .	50 23.05	4.46	1.09	IV.	2	21.073	39 22.0	6.5	5.3	50 28.60	57 3.8
41	9	. .	. .	39.0	. .	. .	. .	. .	51 56.57	4.44	0.90	III.	3	33.970	25 50.7	6.4	3.7	52 1.91	43 30.8
42	8.9	. .	33.0	. .	8.0	. .	. .	. .	53 8.08	4.42	0.99	IV.	3	28.973	31 4.5	6.3	4.3	53 13.4	28 48 45.1
43	9	0.0	17.5	35.5	. .	. .	. .	. .	22 55 52.83	4.40	1.11	III.	2	20.690	44 59.7	6.1	6.0	22 55 58.34	29 2 41.8
44	6	40.5	58.0	15.3	33.0	. .	. .	. .	23 1 33.07	4.33	1.06	IV.	3	23.910	36 22.0	5.8	4.9	23 1 38.46	28 54 2.7
45	9	. .	. .	. .	40.0	. .	. .	. .	2 40.05	4.31	1.02	IV.	3	26.820	33 19.5	5.7	4.6	2 45.38	28 50 59.8
46	5.6	. .	21.0	38.5	56.0	. .	. .	. .	10 56.15	4.22	1.32	IV.	1	6.253	54 48.9	5.2	7.3	11 1.69	29 12 31.4
47	9	. .	. .	. .	. .	5.5	. .	. .	12 47.96	4.20	0.74	V.	4	46.955	12 13.8	5.2	2.0	12 52.90	28 29 51.0
48	8	. .	41.5	59.0	16.0	. .	. .	. .	19 16.42	4.12	1.05	IV.	3	25.643	34 33.4	4.8	4.7	19 21.59	28 52 12.9
49	7	11.5	29.5	47.0	. .	. .	. .	. .	23 21 4.56	+ 4.10	+1.23	III.	2	13.163	−47 37.8	− 4.8	− 6.4	23 21 9.89	−29 5 19.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 24,	20	− 1.620	− 0.015	− 0.415	+ 0.429	+ 0.022		

REMARKS.

(63) 22. Transit over T. VI assumed as recorded over T. V.

Sept. 24. Readings of Barometer, &c., at $20^h\ 35^m$.

(63) 43. Micrometer reading assumed as $15^r.690$, not $20^r.690$.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 63	Sept. 24, 21 1	67 39 60.2	58.7	75.0	61.6	48.6	40.0	57.35	30.104	73.0	69.0	73.0	71.0	70.0
	21 29	. .	. .	. .	. .	. .	. .	. .	30.108	72.5	68.0			
	21 59	. .	. .	. .	. .	. .	. .	. .	30.114	73.2	68.3			
	22 34	. .	. .	. .	. .	. .	. .	. .	30.110	72.0	67.0			
	23 1	59.5	59.0	75.0	62.0	48.2	39.0	57.12	30.110	71.7	67.0			
	0 1	. .	. .	. .	. .	. .	. .	. .	30.100	70.8	66.0			
	0 30	59.0	58.8	75.0	62.2	47.5	38.6	56.85	30.100	70.3	66.0	70.0	70.0	70.0

ZONE 63. SEPTEMBER 24. P. $D_0 = -28° 17' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	. .	. .	50.0	. .	23 21 15.03	+ 4.10	+0.69	VI.	4	51.270	− 7 42.8	− 4.8	− 1.4	23 21 19.82	−28 25 19.0
51	9	59.0	16.5	34.0	51.5	. .	. .	. .	26 51.54	4.04	0.77	IV.	4	44.415	14 53.8	4.6	2.3	26 56.35	28 32 30.7
52	9	. .	17.0	. .	52.0	. .	. .	. .	30 52.15	4.00	1.24	IV.	2	12.655	48 9.6	4.5	6.4	30 57.39	29 5 50.5
53	6.7	. .	42.7	0.0	17.5	. .	. .	. .	32 17.72	3.98	1.32	IV.	1	7.450	53 32.7	4.4	7.1	32 23.02	29 11 14.2
54	8	. .	45.0	3.0	. .	. .	. .	. .	34 20.31	3.96	0.73	III.	4	48.580	10 32.4	4.4	1.8	34 25.00	28 28 8.6
55	9	. .	. .	. .	. .	58.0	15.0	. .	34 40.08	3.96	1.18	V.	2	17.460	43 8.5	4.4	5.8	34 45.22	29 0 48.7
56	7	. .	. .	27.0	. .	. .	. .	. .	37 44.51	3.92	0.66	III.	4	55.287	3 32.1	4.3	0.9	37 49.09	28 21 7.3
57	9	34.0	52.0	. .	. .	. .	. .	. .	40 26.86	3.89	0.96	II.	3	33.790	26 1.8	4.3	3.7	40 31.71	43 39.8
58	5	. .	27.0	44.3	2.0	. .	. .	. .	41 2.04	3.89	1.14	IV.	2	20.530	39 56.1	4.3	5.4	41 7.07	57 35.8
59	7	. .	. .	. .	28.0	45.5	. .	. .	41 27.98	3.88	0.92	IV.	3	36.205	23 30.7	4.2	3.4	41 32.78	28 41 8.3
60	8	10.3	28.0	45.5	. .	. .	. .	. .	44 3.17	3.85	1.30	III.	1	8.940	51 59.1	4.2	6.9	44 8.32	29 9 40.2
61	8	48.5	. .	24.0	. .	. .	. .	. .	49 41.38	3.80	1.08	III.	3	25.213	35 0.3	4.1	4.8	49 46.26	28 52 39.2
62	9	. .	. .	. .	14.0	. .	. .	. .	50 14.05	3.79	1.05	IV.	3	27.640	32 28.1	4.1	4.5	50 18.89	50 6.7
63	8	. .	. .	. .	2.5	. .	37.5	. .	51 2.50	3.78	0.86	VI.	4	40.540	18 56.4	4.1	2.8	51 7.14	36 33.3
64	7.8	. .	22.3	40.0	. .	. .	. .	. .	23 52 57.48	3.76	0.98	III.	3	32.955	26 54.4	4.2	3.8	23 53 2.22	44 32.4
65	6.7	45.0	. .	. .	37.5	55.0	. .	. .	0 1 37.54	3.67	1.05	IV.	3	28.357	31 43.3	4.2	4.3	0 1 42.26	49 21.8
66	5.6	0.3	17.7	35.3	52.7	. .	. .	. .	3 52.81	3.65	0.89	IV.	4	39.053	20 30.4	4.2	3.0	3 57.35	38 7.6
67	9	. .	. .	. .	. .	48.0	. .	. .	4 30.44	3.64	0.88	V.	4	39.960	19 33.1	4.2	2.9	4 34.96	37 10.2
68	9	. .	. .	. .	28.5	. .	3.5	. .	5 28.50	3.63	0.91	IV.	4	38.335	21 15.6	4.2	3.1	5 33.04	38 52.9
69	9	57.0	. .	32.0	. .	. .	. .	. .	11 49.61	3.57	1.02	III.	3	31.453	28 28.8	4.3	4.0	10 54.20	46 7.1
70	9	1.0	. .	. .	. .	11.0	. .	. .	11 53.52	3.57	1.02	V.	3	30.514	29 27.9	4.3	4.1	10 58.11	47 6.3
71	7	17.5	35.0	52.5	10.0	. .	. .	. .	19 10.03	3.50	0.84	IV.	4	44.515	14 47.5	4.5	2.3	18 14.37	28 32 24.3
72	7	56.0	13.5	31.0	. .	. .	. .	. .	19 48.72	3.49	1.28	III.	2	13.982	46 46.4	4.5	6.2	19 53.49	29 4 27.1
73	8.9	. .	31.5	. .	6.0	. .	. .	. .	23 6.34	3.46	1.02	IV.	3	31.643	28 17.0	4.6	3.9	23 10.82	28 45 55.5
74	9	. .	31.0	50.0	. .	. .	. .	. .	25 6.85	3.44	1.05	III.	3	29.036	31 0.4	4.6	4.3	25 11.34	28 48 39.3
75	7	45.3	2.5	20.5	37.5	. .	. .	. .	0 30 37.73	+ 3.38	+0.77	IV.	4	49.840	− 9 13.1	− 4.8	− 1.6	0 30 41.88	−28 26 49.5

ZONE 64. SEPTEMBER 28. P. $D_0 = -24° 32' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	30.0	47.5	4.0	. .	. .	. .	. .	20 1 21.23	+ 2.36	+0.76	III.	2	12.237	−48 35.9	−15.8	− 4.5	20 1 24.35	−25 21 36.2
2	8	. .	. .	. .	25.0	. .	58.5	. .	2 24.83	2.35	2.36	IV.	4	52.052	6 54.3	15.6	0.5	2 29.54	24 39 50.4
3	8	. .	. .	. .	59.0	. .	. .	. .	3 41.94	2.34	1.04	IV.	2	18.656	41 53.5	15.2	3.9	3 45.32	25 14 52.6
4	9	. .	. .	16.0	. .	. .	. .	. .	6 32.95	2.31	2.44	III.	4	52.710	6 13.1	14.7	0.5	6 37.70	24 39 8.3
5	8	13.0	. .	47.0	. .	. .	. .	. .	9 3.90	2.29	2.07	III.	4	42.540	16 51.6	14.1	1.5	9 8.26	49 47.2
6	9	. .	. .	. .	. .	. .	. .	55.5	9 4.64	2.29	2.31	VII.	4	48.456	10 38.8	14.1	0.9	9 9.24	24 43 33.8
7	8	50.5	7.5	25.0	42.5	. .	. .	. .	11 42.91	2.26	1.10	IV.	2	17.664	42 55.7	13.5	4.0	11 46.27	25 15 53.2
8	8	. .	. .	. .	. .	. .	45.0	. .	12 11.13	2.26	2.18	VI.	4	44.342	14 57.7	13.4	1.3	12 15.57	24 47 52.4
9	9	. .	. .	. .	. .	. .	27.0	. .	13 52.96	2.24	0.82	VI.	1	9.780	51 6.2	13.0	4.8	13 56.02	25 24 4.0
10	8	. .	38.0	55.5	. .	. .	. .	. .	17 12.30	2.21	0.79	III.	1	8.133	52 49.8	12.2	5.0	17 15.30	25 25 47.0
11	8	. .	. .	59.0	. .	. .	. .	. .	19 15.99	2.19	2.18	III.	4	41.975	17 27.0	11.8	1.5	18 20.36	24 50 20.3
12	6.7	. .	55.0	12.5	29.0	. .	. .	. .	19 29.13	2.19	2.62	IV.	4	52.940	5 58.5	11.7	0.4	19 33.94	24 38 50.6
13	7	. .	. .	. .	18.0	. .	. .	. .	23 18.03	2.15	0.99	IV.	1	11.397	49 25.6	10.9	4.6	23 21.17	25 22 21.1
14	6.7	. .	. .	. .	. .	8.5	26.0	. .	23 51.65	2.15	0.84	V.	1	7.210	53 47.6	10.8	5.0	23 54.64	26 43.4
15	8	. .	. .	. .	. .	7.5	. .	. .	24 50.47	2.14	1.50	V.	3	23.240	37 4.2	10.6	3.4	24 54.11	25 9 58.2
16	7	. .	16.0	33.5	50.0	. .	. .	. .	26 50.16	2.12	2.17	IV.	4	39.350	20 11.9	10.1	1.8	26 54.45	24 53 3.8
17	8	. .	8.5	. .	42.5	. .	. .	. .	28 42.49	2.10	2.18	IV.	4	39.060	20 30.0	9.7	1.8	28 46.77	53 21.5
18	7	. .	. .	. .	. .	23.5	40.5	. .	29 6.59	2.09	2.52	V.	4	47.320	11 51.2	9.6	1.0	29 11.20	44 41.8
19	7	33.0	50.0	6.5	24.0	. .	. .	. .	20 31 23.77	+ 2.07	+2.81	IV.	4	53.980	− 4 54.0	− 9.1	− 0.3	20 31 28.65	−24 37 43.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 64	Sept. 28, 20 0	63 54 67.3	68.4	81.2	73.4	53.4	45.0	64.78	30.250	62.0	56.7	64.0	64.5	68.0
	20 19	. .	. .	. .	. .	. .	. .	. .	30.262	62.0	55.5			
	20 46	. .	. .	. .	. .	. .	. .	. .	30.272	62.0	55.2			

REMARKS.

Sept. 28. 20h 19m, hazy; stars unsteady.

(63) 69. Minutes assumed as 10 instead of 11.

(63) 70. Minutes assumed as 10 instead of 11.

(63) 71. Minutes assumed as 18 instead of 19.

(64) 11. Minutes assumed as 18 instead of 19.

(64) 2. Transit over T. V assumed as recorded over T. IV.

ZONE 64. SEPTEMBER 24. P. $D_0 = -24° 34' 4''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	9	45.0	2.5	. .	. .	. .	. .	. .	20 34 36.26	+ 2.04	+1.48	II.	2	19.853	−40 38.3	− 8.5	− 3.7	20 34 39.78	−25 13 30.5
21	9	. .	. .	34.0	. .	. .	. .	. .	36 51.00	2.02	1.98	III.	3	31.333	28 36.4	8.0	2.6	36 55.00	1 27.0
22	9	. .	. .	2.0	. .	. .	. .	. .	38 19.00	2.00	2.01	III.	3	31.665	28 15.4	7.9	2.6	38 23.01	25 1 5.9
23	8	. .	. .	44.0	1.0	. .	. .	. .	44 0.99	1.95	2.64	IV.	4	45.620	13 38.0	6.5	1.2	44 5.58	24 46 25.7
24	6.7	. .	33.0	50.5	7.0	. .	. .	. .	45 7.15	1.93	2.51	IV.	4	41.730	17 42.2	6.2	1.6	45 11.59	50 30.0
25	8	. .	52.0	9.0	. .	. .	. .	. .	20 46 25.97	+ 1.92	+2.61	III.	4	44.090	−15 14.3	− 6.0	− 1.3	20 46 30.50	−24 48 1.6

ZONE 65. SEPTEMBER 28. P. $D_0 = -27° 2' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean R. A.	Mean Decl.
1	8	. .	. .	. .	9.0	. .	. .	1.5	21 0 9.19	+ 3.94	+0.59	IV.	2	20.955	−39 29.3	− 9.0	− 4.4	21 0 13.72	−27 42 32.7
2	8	1.0	18.0	35.0	. .	. .	. .	. .	3 52.64	3.91	0.92	III.	4	43.563	15 47.4	8.3	1.6	3 57.47	18 47.3
3	9	32.0	50.0	7.0	24.0	. .	. .	. .	6 24.29	3.88	0.70	IV.	3	29.755	30 15.3	7.9	3.3	6 28.87	33 16.5
4	7	. .	11.0	28.5	44.5	3.0	. .	. .	8 45.41	3.88	1.10	V,	4	55.463	3 20.6	7.4	0.2	8 50.39	6 18.2
5	9	. .	. .	. .	55.0	. .	. .	. .	9 55.00	3.84	0.97	IV.	4	47.712	11 26.7	7.2	1.1	9 59.81	14 25.0
6	7	. .	. .	. .	57.5	. .	. .	. .	10 57.54	3.83	0.42	IV.	1	13.510	47 13.2	7.0	5.3	11 1.79	50 15.5
7	9	. .	. .	. .	. .	. .	42.0	. .	11 7.17	3.82	0.33	VI.	1	7.862	53 6.3	7.0	5.9	11 11.32	56 9.2
8	9	. .	. .	. .	. .	. .	35.5	. .	12 0.90	3.81	0.96	VI.	4	47.450	11 42.5	6.9	1.2	12 5.67	14 40.6
9	9	. .	. .	. .	. .	. .	. .	54.0	13 1.85	3.80	0.49	VII.	2	18.055	42 30.3	6.7	4.7	13 6.14	45 31.7
10	9	40.0	57.0	14.5	. .	. .	. .	. .	18 31.84	3.74	0.72	III.	3	34.270	25 32.1	5.8	2.7	18 36.30	28 30.6
11	7.8	. .	. .	12.5	29.5	. .	. .	. .	19 29.64	3.73	0.97	IV.	4	50.826	8 11.2	5.6	0.8	19 34.34	11 7.6
12	9	. .	36.0	54.0	. .	. .	. .	. .	22 11.08	3.70	0.51	VII.	2	21.017	44 48.2	5.1	5.0	22 15.29	47 49.3
13	8	. .	. .	57.5	. .	32.5	. .	. .	24 14.98	3.68	0.55	V.	3	25.080	35 8.7	4.9	3.9	24 19.21	38 7.5
14	5.6	. .	. .	1.0	18.5	36.0	. .	. .	21 30 18.47	+ 3.61	+0.21	IV.	1	5.510	−55 34.0	− 3.8	− 6.3	21 30 22.29	−27 58 34.1

ZONE 66. SEPTEMBER 30. P. $D_0 = -27° 2' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean R. A.	Mean Decl.
1	6.7	. .	45.0	2.5	20.0	. .	. .	. .	21 30 19.94	+ 2.67	+0.07	IV.	1	5.373	−55 42.7	−14.2	− 6.3	21 30 22.68	−27 58 33.2
2	9	. .	. .	31.0	. .	. .	. .	. .	34 48.34	2.62	0.29	III.	4	43.445	21 8.6	13.6	2.3	34 51.25	23 54.5
3	8	. .	. .	. .	17.0	. .	. .	. .	35 16.97	2.61	0.32	IV.	4	49.770	9 17.5	13.5	1.0	35 19.90	12 2.0
4	7	. .	. .	1.0	18.3	. .	. .	. .	36 18.30	2.60	0.32	IV.	4	51.140	7 51.9	13.3	0.8	36 21.22	10 35.8
5	8	. .	. .	. .	. .	17.5	. .	52.0	37 0.07	2.59	0.32	V.	4	51.275	7 42.9	13.2	0.8	37 2.98	10 26.9
6	9	. .	. .	. .	. .	35.0	. .	. .	39 17.52	2.57	0.12	V.	1	10.055	50 49.4	12.9	5.7	39 20.21	53 38.0
7	7	33.0	50.3	7.5	. .	. .	. .	. .	48 24.89	2.46	0.32	III.	4	50.550	8 28.8	11.5	0.9	48 27.67	11 11.2
8	8	. .	. .	59.3	16.7	34.0	. .	. .	52 16.66	2.42	0.30	V.	4	47.480	11 41.1	11.0	1.2	52 19.38	14 23.3
9	7	40.5	58.0	15.3	33.0	. .	. .	. .	54 32.80	2.39	0.15	IV.	2	16.890	43 44.1	10.6	4.9	54 35.34	46 29.6
10	5	. .	27.0	44.3	1.5	. .	. .	53.5	21 56 1.58	2.37	0.22	IV.	3	29.947	30 3.3	10.4	3.3	21 56 4.17	32 47.0
11	9	35.0	52.0	9.5	. .	. .	. .	. .	22 0 26.84	2.32	0.26	III.	4	37.840	21 46.6	9.8	2.4	22 0 29.42	24 28.8
12	7	. .	. .	. .	. .	12.0	. .	. .	2 54.52	2.30	0.12	V.	1	10.383	50 29.0	9.5	5.7	2 56.94	53 14.2
13	7	. .	. .	48.0	5.0	. .	. .	. .	4 5.21	2.28	0.14	IV.	2	14.130	46 37.2	9.4	5.2	4 7.63	49 21.8
14	6	. .	. .	. .	. .	. .	2.5	. .	4 27.95	2.28	0.35	VI.	4	57.470	1 14.2	9.3	0.1	4 30.58	3 53.6
15	7	. .	. .	. .	. .	. .	. .	. .	4 . .	2.28	0.31	VII.	4	47.760	11 22.8	9.2	1.2	5 . .	14 3.2
16	6.7	. .	. .	22.0	39.5	. .	. .	. .	15 39.41	2.15	0.34	IV.	4	53.737	5 8.5	7.9	0.5	15 41.90	7 46.9
17	6	. .	. .	. .	19.5	37.0	. .	. .	16 19.57	2.14	0.20	V.	3	25.880	34 18.4	7.8	3.8	16 21.91	37 0.0
18	6	22.3	39.5	57.0	14.3	. .	. .	. .	19 14.24	2.10	0.33	IV.	4	50.820	8 11.5	7.5	0.9	19 16.67	10 49.9
19	6	. .	. .	. .	. .	. .	20.0	. .	19 45.17	2.10	0.08	VI.	1	5.515	55 34.8	7.4	6.3	19 47.35	58 18.5
20	6	. .	. .	2.5	19.5	. .	. .	. .	21 19.70	2.08	0.13	IV.	2	11.230	49 38.9	7.2	5.6	21 21.91	52 21.7
21	9	. .	45.0	. .	. .	. .	. .	. .	22 24 19.70	+ 2.04	+0.32	II.	4	47.797	−11 21.6	− 6.9	− 1.2	22 24 22.06	−27 13 59.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 65	Sept. 28,	21 0	66 24 68.4	70.5	85.0	74.6	59.8	46.4	67.45	30.274	62.0	55.5	63.5	62.5	67.0
		21 30	. .	. .	. .	. .	. .	. .	. .	30.284	62.8	54.5			
Zone 66	Sept. 30,	21 25	66 24 65.8	64.0	78.7	67.6	51.3	43.7	61.85	29.922	66.0	60.6	65.5	. .	64.0
		22 0	. .	. .	. .	. .	. .	. .	. .	29.918	65.7	60.3			
		22 38	. .	. .	. .	. .	. .	. .	. .	29.914	65.0	60.7			
		23 19	. .	. .	. .	. .	. .	. .	. .	29.918	64.6	62.0			
		23 51	. .	. .	. .	. .	. .	. .	. .	29.914	64.0	58.5			
		0 28	. .	. .	. .	. .	. .	. .	. .	29.914	63.3	57.0			

REMARKS.

(65) 12. Micrometer reading assumed as $16^r.017$, not $21^r.017$.

(66) 2. Micrometer reading assumed as $38^r.445$, not $43^r.445$.

ZONE 66. SEPTEMBER 30. P. $D_0 = -27° 2' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	9	46.0	3.3	20.5	38.0	. .	. .	. .	22 27 38.03	+ 2.01	+0.18	IV.	2	20.840	−39 36.5	− 6.5	− 4.4	22 27 40.22	−27 42 17.4
23	7.8	9.0	26.5	43.7	1.0	. .	. .	. .	30 1.10	1.98	0.19	IV.	3	24.067	36 12.2	6.3	4.0	30 3.27	38 52.5
24	3.4	26.7	44.0	1.5	18.7	. .	. .	. .	32 18.83	1.95	0.15	IV.	2	14.003	46 45.1	6.0	5.2	32 20.93	49 26.3
25	8	32.5	49.5	7.3	24.5	. .	. .	. .	35 24.52	1.92	0.20	IV.	3	23.530	36 46.0	5.7	4.1	35 26.64	39 25.8
26	7	. .	49.5	6.7	24.0	. .	. .	. .	37 24.14	1.89	0.17	IV.	2	17.395	43 12.7	5.5	4.8	37 26.20	45 53.0
27	7	. .	. .	21.0	38.5	55.7	. .	. .	38 38.38	1.88	0.36	V.	4	56.047	2 43.9	5.4	0.3	38 40.62	5 19.6
28	9	. .	. .	27.0	. .	. .	. .	. .	42 44.34	1.83	0.32	III.	4	47.623	11 32.4	5.0	1.3	42 46.49	14 8.7
29	9	. .	. .	. .	5.0	. .	. .	. .	45 5.04	1.80	0.16	IV.	2	16.600	44 2.5	4.8	4.9	45 7.00	46 42.2
30	8	. .	50.5	8.0	25.5	. .	. .	. .	46 25.40	1.79	0.17	IV.	2	18.907	41 37.7	4.7	4.6	46 27.36	44 17.0
31	7.8	. .	. .	. .	38.0	. .	. .	. .	47 38.04	1.77	0.27	IV.	3	35.403	24 21.1	4.6	2.7	47 40.08	26 58.4
32	9	. .	. .	40.0	57.5	. .	. .	. .	51 57.45	1.72	0.26	IV.	3	34.325	25 28.8	4.2	2.8	51 59.43	28 5.8
33	8	. .	. .	. .	. .	. .	. .	55.5	52 3.27	1.72	0.14	IV.	1	9.580	51 19.2	4.2	5.8	52 5.13	53 59.2
34	6.7	36.0	53.3	10.7	28.0	. .	. .	20.3	55 28.08	1.68	0.22	IV.	3	25.617	34 35.0	3.9	3.8	55 29.98	37 12.7
35	6	. .	. .	. .	. .	58.5	. .	33.3	22 56 41.01	1.67	0.13	V.	1	7.020	53 59.4	3.8	6.1	22 56 42.81	56 39.3
36	7.8	13.5	31.0	. .	6.0	. .	41.0	. .	23 3 5.92	1.59	0.19	IV.	2	19.540	40 58.2	3.3	4.6	23 3 7.70	43 36.1
37	8.9	. .	32.5	. .	7.5	. .	42.5	. .	3 7.52	1.59	0.19	VI.	2	20.885	39 33.2	3.3	4.4	3 9.30	42 10.9
38	9	. .	. .	. .	9.0	. .	. .	. .	5 8.97	1.57	0.33	IV.	4	48.820	10 17.1	3.2	1.1	5 10.87	12 51.4
39	8	. .	. .	. .	. .	44.0	. .	17.7	5 26.16	1.57	0.29	V.	4	40.683	18 47.7	3.2	2.0	5 28.02	21 22.9
40	7	34.0	51.3	8.7	26.0	. .	. .	. .	8 26.13	1.53	0.14	IV.	1	9.640	51 15.4	3.0	5.7	8 27.80	53 54.1
41	9	. .	54.0	11.0	28.5	. .	. .	. .	11 28.51	1.50	0.32	IV.	4	45.495	13 46.0	2.8	1.5	11 30.33	16 20.3
42	5.6	21.5	39.0	56.5	13.7	. .	. .	. .	13 13.75	1.48	0.19	IV.	2	19.923	45 47.7	2.7	5.1	13 15.42	48 25.5
43	9	29.0	. .	3.5	. .	. .	. .	. .	15 20.83	1.45	0.33	III.	4	48.824	10 17.0	2.5	1.1	15 22.61	12 50.6
44	8	54.0	11.0	28.7	. .	. .	. .	. .	19 45.93	1.40	0.25	III.	3	32.275	27 37.3	2.3	3.0	19 47.58	30 12.6
45	7.8	. .	. .	. .	57.0	. .	32.5	. .	19 57.45	1.40	0.32	V.	4	45.187	14 5.0	2.3	1.5	19 59.17	16 38.8
46	9	. .	. .	. .	. .	34.0	. .	. .	24 16.61	1.35	0.24	V.	3	29.765	30 14.7	2.2	3.3	24 18.20	32 50.2
47	9	5.0	22.5	39.7	. .	. .	. .	. .	26 57.17	1.32	0.18	III.	2	18.323	42 14.5	2.1	4.7	26 58.67	44 51.3
48	7	. .	40.3	58.0	15.0	. .	. .	. .	28 15.16	1.31	0.19	IV.	2	20.726	39 43.7	2.1	4.4	28 16.66	42 20.2
49	7	34.3	51.7	9.2	26.5	. .	. .	. .	32 26.50	1.26	0.20	IV.	2	19.913	40 34.6	2.1	4.5	32 27.96	43 11.2
50	9	50.0	7.5	25.0	. .	. .	. .	. .	36 42.14	1.21	0.32	III.	4	43.520	15 50.1	2.0	1.7	36 43.67	18 23.8
51	9	. .	. .	54.5	12.0	. .	. .	. .	38 11.96	1.20	0.22	IV.	3	23.855	36 25.4	2.0	4.1	38 13.38	39 1.5
52	7	. .	. .	17.0	35.0	52.5	9.5	27.0	46 34.78	1.11	0.15	IV.	1	10.805	50 2.4	2.1	5.6	46 36.04	52 40.1
53	5.6	. .	. .	. .	. .	. .	. .	14.0	49 21.95	1.07	0.27	VII.	3	34.805	24 58.0	2.1	2.7	49 23.29	27 32.8
54	7	. .	. .	. .	. .	3.0	. .	. .	51 45.65	1.05	0.30	V.	4	40.343	19 9.2	2.2	2.1	51 47.00	21 43.5
55	7	. .	. .	. .	. .	. .	. .	37.0	23 51 44.97	1.05	0.30	VII.	4	40.483	18 59.3	2.2	2.1	23 51 46.32	21 33.6
56	9	. .	48.5	6.0	. .	. .	. .	. .	0 4 23.33	0.91	0.20	III.	2	19.753	40 44.7	2.5	4.5	0 4 24.44	43 21.7
57	7	. .	. .	. .	58.0	15.0	. .	. .	4 57.81	0.91	0.20	IV.	2	21.473	38 57.0	2.5	4.3	4 58.92	41 33.8
58	7	. .	. .	. .	. .	52.5	. .	. .	5 35.17	0.90	0.36	V.	4	51.953	7 0.2	2.5	0.7	5 36.43	9 33.4
59	4.5	. .	. .	. .	. .	. .	41.0	58.3	6 6.41	0.89	0.37	VI.	4	54.227	4 37.7	2.5	0.5	6 7.67	7 10.7
60	8.9	34.0	51.0	9.5	26.0	. .	. .	. .	14 26.17	0.81	0.25	IV.	3	29.957	30 2.7	2.8	3.3	14 27.23	32 38.8
61	9	. .	. .	. .	. .	. .	22.0	39.3	14 47.13	0.81	0.16	VI.	2	12.560	48 15.2	2.8	5.4	14 48.10	50 53.4
62	8	. .	. .	29.0	45.0	. .	. .	. .	16 45.70	0.79	0.16	IV.	1	11.667	49 8.5	2.9	5.5	16 46.65	51 46.9
63	8.9	. .	. .	. .	. .	15.0	32.0	. .	16 57.42	0.79	0.19	V.	2	18.293	42 16.3	2.9	4.7	16 58.40	44 53.9
64	7.8	45.0	2.3	19.7	37.0	. .	. .	. .	21 37.12	0.74	0.17	IV.	1	13.015	47 44.1	3.0	5.3	21 38.03	50 22.4
65	8.9	18.0	36.0	53.5	. .	. .	. .	. .	28 10.59	0.67	0.22	III.	3	21.930	38 26.0	3.3	4.3	28 11.48	41 3.6
66	8	. .	. .	. .	45.0	2.0	. .	. .	0 28 44.82	+ 0.67	+0.25	IV.	3	27.545	−32 34.1	− 3.4	− 3.6	0 28 45.74	−27 35 11.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(66) 42. Micrometer reading assumed as $14^r.923$, not $19^r.923$.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 67. OCTOBER 6. P. $D_0 = -32° 3' 10''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	34.0	53.0	. .	. .	. .	22 41 52.21	+ 1.69	+1.19	IV.	3	26.337	−33 50.0	− 9.6	− 5.6	22 41 55.09	−32 37 15.2
2	8	. .	28.0	. .	5.0	. .	. .	. .	44 4.80	1.66	1.16	IV.	3	25.943	34 14.5	9.4	5.7	44 7.62	37 39.6
3	5.6	36.5	55.0	13.5	31.2	. .	. .	. .	47 31.41	1.61	1.24	IV.	3	37.123	22 33.1	9.1	3.7	47 34.26	25 55.9
4	5.6	5.0	. .	. .	59.5	18.3	. .	. .	47 59.73	1.61	1.27	IV.	4	41.320	18 8.2	9.1	3.0	48 2.61	21 30.3
5	8	43.0	0.5	18.5	37.0	. .	. .	. .	51 37.12	1.56	1.19	IV.	3	34.080	25 44.0	8.8	4.3	51 39.87	29 7.1
6	8.9	. .	. .	. .	. .	32.5	. .	. .	52 14.26	1.55	1.23	V.	3	39.160	20 25.3	8.8	3.3	52 17.04	23 47.4
7	8	40.0	58.3	16.5	. .	. .	. .	. .	55 34.93	1.50	0.95	III.	1	9.330	51 34.9	8.5	8.8	55 37.38	55 2.2
8	8	20.0	. .	. .	. .	33.5	. .	. .	22 58 14.99	1.46	1.08	V.	3	26.445	33 43.3	8.4	5.6	22 58 17.53	37 7.3
9	8	. .	12.5	. .	49.0	. .	. .	. .	23 20 49.00	1.16	1.11	IV.	4	49.640	9 25.7	7.1	1.5	23 20 51.27	12 44.3
10	8	. .	37.0	55.0	. .	. .	. .	. .	23 13.35	1.12	1.03	III.	4	43.933	15 23.9	7.0	2.5	23 15.50	18 43.4
11	6.7	. .	. .	. .	26.0	. .	. .	. .	25 25.97	1.09	1.12	IV.	4	55.070	3 45.6	6.9	0.6	25 28.18	7 3.1
12	5.6	. .	. .	49.0	7.0	25.5	. .	. .	23 29 7.17	+ 1.04	+0.81	IV.	3	21.718	−38 39.5	− 6.8	− 6.5	23 29 9.02	−32 42 2.8

ZONE 68. OCTOBER 7. C. $D_0 = -32° 3' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		r.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	57.1	15.8	34.0	52.0	10.6	. .	22 3 33.90	+ 2.21	+1.25	IV.	2	16.112	−44 33.0	−11.0	− 7.5	22 3 37.36	−32 48 1.5
2	9	. .	. .	. .	11.5	. .	. .	15.0	5 10.93	2.19	1.54	IV.	4	47.990	11 9.3	10.8	1.8	5 14.66	14 31.9
3	8.9	. .	. .	. .	. .	32.5	50.7	9.3	7 14.29	2.16	1.35	V.	3	27.236	32 53.6	10.6	5.5	7 17.80	36 19.7
4	7.8	. .	. .	38.0	56.5	14.7	32.5	. .	8 56.31	2.14	1.40	IV.	3	32.484	27 24.3	10.4	4.5	8 59.85	30 49.2
5	8	. .	. .	6.4	24.1	42.3	. .	. .	15 24.26	2.05	1.55	IV.	4	48.376	10 45.2	9.6	1.7	15 27.86	14 6.5
6	7.8	. .	18.3	36.8	55.2	13.5	. .	50.2	18 55.17	2.00	1.52	IV.	4	43.797	15 32.5	9.2	2.5	18 58.69	18 54.2
7	8	. .	. .	. .	. .	. .	. .	50.2	18 55.64	2.00	1.61	VII.	4	54.211	4 38.2	9.2	0.7	18 59.25	7 58.1
8	8.9	. .	39.1	57.2	15.3	33.4	51.8	. .	22 15.38	1.95	1.53	IV.	4	44.071	15 15.3	8.8	2.5	22 18.86	18 36.6
9	7	. .	55.3	13.7	31.5	50.6	8.6	. .	25 31.94	1.91	1.22	IV.	2	9.597	51 21.1	8.4	8.7	25 35.07	54 48.2
10	7.8	. .	27.5	46.5	. .	23.4	41.2	59.7	28 4.71	1.87	1.46	IV.	3	36.789	22 53.9	8.2	3.8	28 8.04	26 15.9
11	8.9	. .	31.2	50.3	8.2	. .	44.8	. .	28 8.21	1.87	1.47	IV.	3	37.979	21 39.3	8.1	3.6	28 11.55	25 1.0
12	7.8	. .	45.2	3.2	21.5	40.3	58.2	. .	32 21.68	1.81	1.30	IV.	2	17.705	42 53.1	7.7	7.2	32 24.79	46 18.0
13	9	. .	. .	. .	. .	. .	31.5	. .	32 55.07	1.81	1.48	VI.	3	38.359	21 15.5	7.7	3.5	32 58.36	24 36.7
14	8	. .	. .	. .	24.5	43.4	1.3	. .	34 24.85	1.78	1.48	IV.	3	38.149	21 28.7	7.5	3.5	34 28.11	24 49.7
15	8	. .	. .	3.5	21.5	. .	57.2	. .	38 21.33	1.73	1.36	IV.	3	24.408	35 51.0	7.1	6.0	38 24.42	39 14.1
16	8.9	. .	16.1	. .	52.5	10.7	29.1	. .	41 52.54	1.68	1.37	IV.	3	26.342	33 49.7	6.8	5.7	41 55.59	37 12.2
17	8.9	. .	. .	. .	6.3	24.5	42.3	. .	43 6.08	1.66	1.32	IV.	3	18.607	41 54.6	6.8	7.0	43 9.06	45 18.4
18	8.9	. .	. .	. .	. .	22.5	. .	58.6	44 3.98	1.65	1.38	V.	3	25.899	34 17.3	6.7	5.7	44 7.01	37 39.7
19	6.7	. .	54.2	12.7	31.0	49.1	7.1	25.4	47 30.80	1.60	1.48	IV.	3	37.112	22 33.8	6.5	3.7	47 33.88	25 54.0
20	6.7	. .	23.1	41.2	59.5	18.0	36.0	54.4	47 59.60	1.60	1.52	IV.	3	41.327	18 9.3	6.4	3.0	48 2.72	21 28.7
21	9	. .	0.3	19.0	. .	55.7	. .	31.1	51 36.96	1.55	1.46	IV.	3	34.032	25 47.0	6.2	4.3	51 39.97	29 7.5
22	9	. .	37.1	. .	13.1	31.1	50.5	8.2	52 13.43	1.54	1.51	IV.	3	39.141	20 26.4	6.2	3.4	52 16.48	23 46.0
23	8.9	. .	57.6	16.0	34.6	52.9	11.1	. .	55 34.55	1.50	1.24	IV.	2	9.364	51 35.8	6.0	8.8	55 37.29	55 0.6
24	9	. .	38.0	. .	14.5	33.0	51.0	. .	22 59 14.56	1.45	1.40	IV.	3	26.716	33 26.1	5.8	5.6	22 59 17.41	36 47.5
25	9	. .	. .	. .	1.2	. .	37.2	. .	23 8 0.01	+ 1.32	+1.55	IV.	3	42.836	−16 34.3	− 5.4	− 2.7	23 8 2.88	−32 19 52.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
	h.	s.	s.	s.	s.	s.	° ′ ″	r.
1846. Oct. 7,	21	− 4.757	+ 0.013	− 0.261	+ 0.273	+ 0.022		

REMARKS.

Oct. 7, 22h 3m. Hazy about horizon.
Oct. 7, 23h 0m. Clear; moon-light.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 67	Oct. 6,	. .	71 24 65.3	66.5	81.0	69.8	55.3	44.7	63.77						
		22 41	. .	. .	. .	. .	. .	. .	. .	30.300	63.3	59.6			
		23 20	. .	. .	. .	. .	. .	. .	. .	30.306	63.5	59.6			
		23 29	. .	. .	. .	. .	. .	. .	. .	30.306	63.5	60.0			
Zone 68	Oct. 7,	22 3	71 24 63.9	65.7	77.9	68.8	52.9	44.3	62.25	30.302	67.1	62.6	66.1	65.7	64.2
		22 22	. .	. .	. .	. .	. .	. .	. .	. .	. .	62.6			
		22 41	. .	. .	. .	. .	. .	. .	. .	30.302	. .	62.8			
		23 0	63.7	65.0	68.0	68.9	53.1	44.3	62.17	30.316	66.0	61.7	65.2	65.0	

Zone 69. October 8. P. $D_\circ = -37° \; 4' \; 10''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8.9	56.5	16.0	35.0	54.5	. .	. .	. .	22 5 54.53	+ 2.77	. .	IV.	4	46.005	−13 13.8	− 5.7	− 3.6	22 5 . .	−37 17 33.1
2	7	26.5	46.0	5.3	24.3	. .	. .	. .	9 24.57	2.71	. .	IV.	4	43.123	16 14.9	5.3	4.5	. . . .	20 34.7
3	8	22.3	41.7	1.0	20.3	. .	. .	. .	20 20.52	2.53	. .	IV.	2	20.750	39 42.2	4.2	11.4	. . . .	44 7.8
4	8.9	31.3	51.0	. .	29.3	. .	. .	. .	25 29.52	2.45	. .	IV.	3	37.433	22 13.7	3.8	6.2	. . . .	26 33.7
5	9	. .	45.0	4.5	. .	. .	. .	. .	30 23.98	2.37	. .	III.	2	15.817	44 51.3	3.3	13.0	. . . .	49 17.6
6	9.10	. .	. .	. .	. .	. .	. .	39.0	40.49	2.36	. .	VII.	1	11.025	49 48.9	3.	14.6	. . . .	54 (15.)
7	7	48.0	. .	26.5	45.7	. .	. .	. .	46 45.81	2.11	. .	IV.	4	51.970	6 59.4	1.9	1.8	. . . .	11 13.1
8	8.9	. .	. .	. .	43.3	. .	. .	. .	47 43.34	2.09	. .	IV.	3	35.440	24 18.8	1.9	6.8	. . . .	28 37.5
9	9	10.0	29.5	49.0	. .	. .	. .	. .	53 8.32	2.00	. .	III.	3	30.683	29 16.9	1.5	8.3	. . . .	33 36.7
10	6.7	. .	. .	50.0	9.7	. .	. .	. .	54 9.50	1.98	. .	IV.	4	49.770	9 17.5	1.4	2.5	. . . .	13 31.4
11	9	. .	. .	. .	. .	50.0	. .	. .	54 30.63	1.98	. .	V.	4	46.137	13 5.3	1.4	3.6	. . . .	17 20.3
12	9	. .	. .	. .	. .	. .	. .	11.0	55 12.74	1.97	. .	VII.	3	31.430	28 29.9	1.4	8.1	. . . .	32 49.4
13	9	. .	. .	. .	8.0	. .	. .	. .	59 8.04	1.90	. .	IV.	1	12.520	48 15.2	1.1	14.1	. . . .	52 40.4
14	9	. .	. .	. .	. .	. .	. .	21.0	22 59 22.92	1.90	. .	VII.	4	45.923	13 17.6	1.1	3.6	. . . .	17 32.3
15	7	30.0	49.5	9.0	28.3	. .	. .	. .	23 22 28.44	1.52	. .	IV.	2	17.865	42 43.0	0.1	12.4	. . . .	47 5.5
16	7	57.0	. .	36.0	. .	. .	. .	. .	28 55.36	1.42	. .	III.	3	26.655	33 29.6	0.0	9.6	. . . .	37 49.2
17	7	11.7	31.0	50.5	9.7	. .	. .	. .	35 9.88	1.31	. .	IV.	3	27.387	32 44.1	0.0	9.3	. . . .	37 3.4
18	6.7	43.0	2.5	21.5	41.3	. .	. .	. .	23 49 41.20	1.09	. .	IV.	3	31.773	28 8.7	0.1	8.0	. . . .	32 26.8
19	7	47.0	6.5	25.5	. .	. .	. .	. .	0 10 45.07	+ 0.76	. .	III.	4	42.973	−16 24.2	− 0.6	− 4.5	. . . .	−37 20 39.3

Zone 70. October 9. C. $D_\circ = -25° \; 47' \; 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	2.7	19.7	. .	55.1	11.7	. .	23 59 37.30	+ 1.06	+1.05	IV.	3	36.002	−23 43.4	− 3.9	− 2.9	23 59 39.41	−26 11 10.2
2	7	. .	46.5	3.7	21.0	37.8	55.2	. .	0 12 20.86	0.93	0.92	IV.	4	49.471	9 36.4	4.2	1.5	0 12 22.71	25 57 2.1
3	8.9	. .	. .	. .	. .	. .	42.2	59.1	13 7.74	0.92	1.12	VI.	3	29.534	30 29.4	4.2	3.6	13 9.78	26 17 57.2
4	8.9	. .	. .	. .	. .	54.5	11.7	. .	14 37.41	0.91	0.97	V.	4	43.918	15 24.6	4.3	2.0	14 39.29	2 50.9
5	6	. .	6.7	23.6	41.0	58.3	15.3	32.4	19 40.98	0.85	1.18	IV.	3	25.049	35 10.6	4.4	4.1	19 43.01	22 39.1
6	9	. .	. .	. .	. .	. .	52.0	. .	20 17.75	0.85	1.01	VI.	4	40.162	19 20.3	4.4	2.5	20 19.61	26 6 47.2
7	8.9	. .	. .	40.2	56.2	. .	. .	. .	23 56.75	0.81	0.89	IV.	4	51.514	7 28.2	4.6	1.2	23 58.45	25 54 54.0
8	7	. .	34.0	51.0	7.5	25.3	42.5	. .	25 8.07	0.80	1.05	IV.	3	35.995	23 43.8	4.6	2.9	25 9.92	26 11 11.3
9	8	. .	28.7	45.4	3.4	20.3	37.0	. .	28 2.97	0.77	1.08	IV.	3	33.729	26 6.0	4.7	3.2	28 4.82	13 33.9
10	8	. .	. .	. .	. .	28.0	. .	1.2	30 10.22	0.75	1.18	V.	3	24.596	35 39.1	4.8	4.2	30 12.15	23 8.1
11	8	. .	. .	44.2	1.5	19.0	36.0	. .	30 1.54	0.75	1.30	IV.	2	13.719	47 2.9	4.8	5.4	30 3.59	34 33.1
12	8	. .	. .	. .	. .	42.0	59.1	. .	31 24.76	0.73	1.20	V.	3	22.579	37 45.6	4.9	4.4	31 26.69	25 14.9
13	9	. .	. .	. .	. .	. .	. .	. .	31 . .	0.73	1.20	VII.	3	22.329	38 1.2	4.9	4.4	31 . .	25 30.5
14	7	. .	32.6	50.0	7.1	24.0	40.9	. .	34 6.94	0.71	0.95	IV.	4	45.571	13 41.1	5.0	1.9	34 8.60	1 8.0
15	8	. .	2.6	19.4	37.0	. .	. .	28.1	38 36.78	0.66	1.07	IV.	3	35.140	24 37.5	5.3	3.0	38 38.51	12 5.8
16	8.9	. .	. .	33.0	. .	. .	24.0	. .	38 49.92	0.66	1.16	IV.	3	26.216	33 57.5	5.3	4.0	38 51.74	21 26.8
17	9	. .	. .	. .	30.0	37.1	44.1	. .	39 9.92	0.65	1.07	IV.	3	34.355	25 26.9	5.3	3.1	40 11.64	26 12 55.3
18	8	. .	. .	9.5	26.7	. .	. .	. .	46 26.64	0.59	0.86	IV.	4	54.831	4 0.6	5.7	0.9	46 28.09	25 51 27.2
19	8	. .	. .	40.3	. .	. .	22.3	. .	48 57.72	0.56	1.18	IV.	2	24.728	35 32.7	5.9	4.2	48 59.46	26 23 2.8
20	7	. .	. .	. .	27.3	. .	. .	19.4	49 27.63	0.56	1.05	IV.	3	36.588	23 6.7	5.9	2.8	49 29.24	10 35.4
21	8	. .	. .	. .	. .	10.0	27.0	43.7	50 52.43	0.55	1.37	V.	2	7.244	53 48.4	6.0	6.1	50 54.35	41 20.5
22	8	. .	. .	. .	31.0	48.5	. .	. .	52 31.12	0.53	1.36	IV.	2	8.069	52 56.7	6.1	6.0	52 33.01	40 28.8
23	7.8	. .	. .	. .	. .	31.5	47.8	5.7	53 13.92	0.52	1.29	V.	2	14.812	45 54.4	6.1	5.3	53 15.73	33 25.8
24	9	. .	. .	. .	34.2	. .	9.1	. .	0 58 34.52	0.47	1.12	IV.	3	30.182	29 48.7	6.5	3.5	0 58 36.11	17 18.7
25	9	. .	55.0	12.7	30.0	. .	. .	. .	1 1 29.80	0.45	1.36	IV.	2	8.619	52 22.3	6.7	6.0	1 1 31.61	39 55.0
26	9	. .	. .	. .	. .	3.7	. .	38.5	1 1 46.72	+ 0.44	+1.15	V.	3	27.431	−32 41.4	− 6.7	− 3.9	1 1 48.31	−26 20 12.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 8,	21	− 4.427	+ 0.010	− 0.261	+ 0.273	+ 0.022		
Oct. 9,	21	− 4.288	− 0.004	− 0.261	+ 0.273	+ 0.022		

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 69	Oct. 8,	. .	76 24 61.0	60.0	75.7	63.5	48.6	39.0	57.97	. .	. .	. .	67.5	66.5	66.0
		. .	60.2	60.4	76.	63.5	49.0	37.7	57.80	. .	. .	. .	66.5	65.0	
		22 5	. .	. .	. .	. .	. .	. .	. .	30.364	68.0	62.7			
		22 30	. .	. .	. .	. .	. .	. .	. .	30.364	67.2	61.6			
		22 59	. .	. .	. .	. .	. .	. .	. .	30.364	67.0	61.7			
		23 49	. .	. .	. .	. .	. .	. .	. .	30.364	66.8	60.3			
Zone 70	Oct. 9,	23 59	. .	. .	. .	. .	. .	. .	. .	30.182	67.7	64.2			
		0 0	65 9 60.0	59.1	73.9	63.1	46.4	38.9	56.90	. .	. .	. .	66.5	66.8	67.7
		0 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.1			

REMARKS.

Oct. 9, $0^h \; 0^m$. Clear; moon bright.

(70) 10. Declination apparently 40″ too large; perhaps micrometer should have been $25^r.196$.

(70) 13. Precedes 12.3^s.

(70) 17. Transits over T.'s IV and V assumed at $10^s.0$ and $27^s.1$ instead of $30^s.0$ and $37^s.1$; and minutes as 40^m, not 39^m.

(70) 18. Transits assumed to have been 10^s later than recorded, to agree with Mural Z., 1847, December 18, and Arg. Z. 315.89.

ZONE 70. OCTOBER 9. C. $D_0 = -25° 47' 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
27	8.9	. .	. .	. .	. .	44.2	1.2	. .	1 9 26.91	+ 0.37	+1.23	V.	3	19.981	−40 28.4	− 7.3	− 4.7	1 9 28.51	−26 28 0.4
28	9	. .	. .	. .	. .	. .	31.0	. .	9 36.64	0.36	1.23	VI.	3	19.981	40 28.4	7.3	4.7	9 38.23	26 28 0.4
29	8	. .	0.7	18.0	35.0	52.0	. .	26.0	13 34.53	0.33	0.87	IV.	4	52.948	5 58.0	7.6	1.1	13 35.73	25 53 26.7
30	9	. .	. .	5.6	. .	. .	56.5	. .	17 22.50	0.29	1.00	IV.	3	40.764	18 44.4	8.0	2.4	17 23.79	26 6 14.8
31	9	. .	. .	. .	27.5	44.3	1.4	. .	20 27.27	0.27	1.01	IV.	3	40.301	19 13.7	8.2	2.4	20 28.55	6 44.3
32	9	. .	. .	. .	. .	15.0	. .	. .	21 57.74	0.26	1.27	V.	2	16.116	44 32.7	8.4	5.1	21 59.27	32 6.2
33	6.7	. .	. .	. .	35.2	52.2	9.7	27.0	22 35.26	0.25	1.19	IV.	3	24.071	36 12.0	8.4	4.3	22 36.70	23 44.7
34	9	. .	. .	59.2	. .	. .	49.6	. .	25 15.85	0.23	0.98	IV.	4	42.387	17 1.2	8.7	2.2	25 17.06	4 32.1
35	9	. .	. .	. .	. .	. .	44.0	1.2	26 9.64	0.22	1.21	VI.	3	21.629	38 45.1	8.8	4.5	26 11.07	26 18.4
36	9	. .	49.1	. .	. .	. .	58.2	. .	28 23.66	0.20	1.06	IV.	3	35.180	24 35.1	9.0	3.0	28 24.92	12 7.1
37	9	. .	3.0	20.1	. .	55.7	. .	29.0	30 37.64	0.18	1.14	IV.	3	27.689	32 25.0	9.2	3.9	30 38.96	19 58.1
38	9	. .	36.2	. .	12.0	. .	45.0	. .	40 11.09	0.11	1.21	IV.	2	21.241	39 11.5	10.2	4.6	40 12.41	26 46.3
39	9	. .	. .	36.3	53.2	. .	28.1	. .	45 53.43	0.07	1.28	IV.	2	14.241	46 30.4	10.9	5.4	45 54.78	34 6.7
40	8.9	. .	43.3	0.7	18.0	34.7	52.2	. .	48 17.79	0.05	1.00	IV.	4	40.698	18 47.1	11.2	2.4	48 18.84	6 20.7
41	8.9	. .	. .	. .	19.2	36.1	53.3	. .	49 19.07	0.04	0.95	IV.	4	45.842	13 24.0	11.4	1.8	49 20.06	0 57.2
42	8	. .	. .	. .	. .	37.7	55 0	. .	50 20.58	0.03	1.15	V.	3	26.401	33 46.0	11.5	4.0	50 21.76	21 21.5
43	9	. .	. .	. .	. .	. .	11.0	28.2	50 36.72	0.03	1.09	VI.	3	33.020	26 50.5	11.5	3.3	50 37.84	14 25.3
44	9	. .	. .	. .	. .	59.5	16.3	33.2	53 42.07	0.01	0.96	IV.	3	44.231	15 6.9	11.9	2.0	53 43.04	2 40.8
45	9	. .	. .	. .	. .	57.8	. .	. .	1 54 40.59	+ 0.00	1.15	V.	2	26.209	33 59.9	12.1	4.0	1 54 41.74	21 36.0
46	9	. .	. .	. .	. .	5.5	22.2	. .	2 1 48.05	− 0.05	1.21	V.	2	20.786	39 39.9	13.1	4.6	2 1 49.21	27 17.6
47	8.9	. .	33.0	50.3	7.5	24.2	. .	. .	4 7.33	0.07	1.03	IV.	3	37.430	22 13.9	13.4	2.8	4 8.29	9 50.1
48	9	. .	. .	. .	. .	29.3	. .	4.5	9 12.57	0.10	1.07	IV.	3	34.058	25 45.4	14.2	3.2	9 13.54	13 22.8
49	7	. .	39.6	56.4	13.8	31.4	48.3	. .	12 13.89	0.12	1.34	IV.	2	9.154	51 48.9	14.7	5.9	12 15.11	26 39 29.5
50	8.9	. .	49.0	5.7	23.3	40.8	57.2	. .	15 23.23	0.14	0.86	IV.	4	53.461	5 26.0	15.2	1.0	15 23.95	25 53 2.2
51	7	. .	59.7	17.5	34.2	51.3	8.7	. .	17 34.28	0.15	1.25	IV.	2	16.499	44 8.8	15.6	5.1	17 35.38	26 31 49.5
52	7	. .	53.2	10.4	27.3	44.5	1.4	. .	23 27.38	0.19	0.84	IV.	4	55.008	3 49.5	16.6	0.8	23 29.03	25 51 26.9
53	9	. .	. .	. .	. .	53.7	. .	. .	2 24 19.51	− 0.20	+0.89	V.	4	51.037	− 7 57.8	−16.8	− 1.3	2 24 20.20	−25 55 35.9

ZONE 71. OCTOBER 10. P. $D_0 = -35° 49' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	21.0	40.0	59.3	. .	. .	. .	23 1 59.21	+ 1.98	+1.52	IV.	3	36.260	−23 27.3	− 7.9	− 6.2	23 2 2.71	−36 12 41.4
2	9	. .	. .	5.0	. .	. .	. .	. .	7 24.13	1.89	1.88	III.	2	18.140	42 25.9	7.6	11.3	7 27.90	31 44.8
3	9	. .	. .	. .	45.0	. .	. .	. .	7 45.05	1.89	1.89	IV.	2	17.760	42 49.6	7.6	11.4	7 48.83	32 8.6
4	7	. .	. .	. .	. .	. .	28.5	. .	7 50.24	1.89	1.84	VI.	2	19.780	40 42.6	7.6	10.8	7 53.97	30 1.0
5	9	. .	. .	. .	. .	. .	. .	23.5	8 26.27	1.87	1.45	VII.	3	38.170	21 26.9	7.6	5.7	8 29.59	10 40.2
6	9	45.0	. .	23.0	. .	. .	. .	. .	19 42.25	1.69	1.72	III.	3	22.873	37 26.8	7.2	9.9	19 45.66	26 43.9
7	6.7	. .	. .	. .	. .	13.5	33.0	. .	19 50.65	1.69	1.41	V.	3	37.220	22 27.1	7.2	5.9	19 53.75	11 40.2
8	9	. .	. .	. .	. .	. .	. .	22.0	20 23.82	1.68	1.26	VII.	4	43.700	15 37.2	7.2	4.2	20 26.76	36 4 48.6
9	8	. .	14.0	33.5	52.5	. .	. .	. .	22 52.35	1.64	1.07	IV.	4	52.140	6 48.9	7.1	1.9	22 55.06	35 55 57.9
10	8.9	46.0	5.0	24.5	. .	. .	. .	. .	25 43.36	1.59	1.53	III.	3	29.003	31 2.4	7.0	8.2	25 46.48	36 20 17.6
11	7	. .	. .	33.0	52.0	. .	. .	. .	26 51.99	1.58	1.02	IV.	4	53.396	5 30.1	7.0	1.6	26 54.59	35 54 38.7
12	9	. .	0.5	19.0	38.5	. .	. .	. .	28 38.44	1.58	1.35	IV.	3	37.867	21 46.3	7.0	5.7	28 41.37	36 10 59.0
13	9	. .	. .	. .	40.0	. .	. .	. .	29 40.04	1.53	1.99	IV.	1	7.795	53 10.8	7.0	14.2	29 43.56	42 32.0
14	9	. .	. .	. .	49.0	. .	. .	. .	33 49.00	1.46	1.15	IV.	4	45.600	13 39.3	6.9	3.7	33 51.61	2 49.9
15	9	. .	. .	. .	. .	8.0	. .	. .	23 55 48.83	1.12	1.54	V.	3	23.335	36 58.3	7.0	9.8	23 55 51.49	36 26 15.1
16	7	. .	44.5	3.5	22.5	. .	. .	. .	0 1 22.55	1.03	0.86	IV.	4	52.530	6 24.4	7.1	1.8	0 1 24.44	35 55 33.3
17	6	. .	. .	45.0	4.0	23.0	. .	. .	4 3.99	0.98	0.90	IV.	4	49.864	9 11.6	7.2	2.5	4 5.88	35 58 21.3
18	8	39.0	58.0	17.5	. .	. .	. .	. .	0 6 36.53	+ 0.95	+1.74	III.	1	11.660	−49 8.8	− 7.3	−13.1	0 6 39.22	−36 38 29.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846. h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(70) 53. Transit over T. VI assumed as recorded over T. V.

(71) 2. Differs in R. A. 3ˢ.9 from Transit Z., September 21.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 70	Oct. 9, 0 39	. .	. .	. .	. .	. .	. .	. .	30.180	67.2	63.6			
	1 1	65 9 59.9	59.6	74.2	63.6	46.9	38.5	57.12	. .	. .	63.8	65.4	66.0	
	1 20	. .	. .	. .	. .	. .	. .	. .	30.170	67.0	63.8			
	1 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	64.2			
	2 1	59.6	59.6	74.7	63.1	46.2	38.4	56.93	. .	. .	63.7	65.7	66.0	67.8
	2 23	. .	. .	. .	. .	. .	. .	. .	30.164	66.8	63.0			
Zone 71	Oct. 10, 23 0	75 9 66.6	73.0	86.3	78.0	59.6	46.7	68.37	30.410	55.8	49.0	55.0	57.5	
	23 29	. .	. .	. .	. .	. .	. .	. .	30.414	55.5	48.5			
	0 1	. .	. .	. .	. .	. .	. .	. .	30.422	55.5	48.0			

ZONE 71. OCTOBER 10. C. $D_o = -35° 49' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	9	. .	30.5	49.0	. .	. .	. .	. .	0 8 8.34	+ 0.92	+0.89	III.	4	49.230	− 9 51.6	− 7.4	− 2.7	0 8 10.15	−35 59 1.7
20	7	. .	59.5	. .	38.0	. .	. .	. .	12 38.00	0.85	1.83	IV.	1	6.240	54 49.8	7.6	14.6	12 40.68	36 44 12.0
21	6.7	. .	. .	24.5	43.5	. .	. .	. .	13 43.59	0.84	1.77	IV.	2	12.355	48 28.5	7.7	12.9	13 46.20	37 49.1
22	7	17.0	36.0	55.0	. .	. .	. .	. .	15 14.15	0.82	1.15	III.	3	35.790	23 56.4	7.8	6.4	15 16.12	13 10.6
23	8.9	52.5	12.0	31.0	. .	. .	. .	. .	16 50.09	0.79	1.47	III.	2	21.460	38 57.8	7.8	10.3	16 52.35	28 15.9
24	9	4.0	23.0	42.0	. .	. .	. .	. .	21 1.29	0.72	1.56	III.	2	16.362	44 17.4	8.2	11.7	21 3.57	33 37.3
25	8	. .	. .	37.0	. .	. .	. .	. .	21 56.14	0.71	1.54	III.	2	16.745	43 53.2	8.3	11.6	21 58.39	33 13.1
26	9	. .	. .	. .	. .	. .	47.0	. .	22 8.66	0.71	1.67	VI.	1	10.900	49 56.1	8.3	13.3	22 11.04	39 17.7
27	9	18.5	37.5	56.0	. .	. .	. .	. .	25 16.11	0.66	1.14	III.	3	33.875	25 56.6	8.6	6.8	25 17.91	36 15 12.0
28	8.9	. .	. .	. .	13.0	. .	. .	. .	26 13.00	0.65	1.04	IV.	4	48.585	10 32.0	8.6	2.9	26 14.69	35 59 43.5
29	8	59.5	18.5	37.5	. .	. .	. .	. .	0 29 57.27	+ 0.59	+1.12	III.	3	34.270	−25 32.0	− 9.0	− 6.8	0 29 58.98	−36 14 47.8

ZONE 72. OCTOBER 16. C. $D_o = -39° 35' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	59.2	19.0	39.1	59.5	20.0	. .	21 29 39.13	+ 2.39	. .	IV.	3	23.615	−36 40.6	−10.2	−15.7	. . . .	−40 12 6.5
2	8.9	. .	. .	. .	37.5	. .	17.7	. .	32 37.60	2.34	. .	IV.	4	52.081	6 52.5	9.6	3.3	. . . .	39 42 5.4
3	8	. .	. .	11.3	31.0	51.2	. .	. .	31.16	2.24	. .	IV.	2	23.544	36 47.1	8.4	15.8	. . . .	40 12 11.3
4	8	. .	. .	42.3	2.2	22.1	42.2	. .	46 2.14	2.10	. .	IV.	4	52.106	6 51.0	7.0	3.3	. . . .	39 42 1.3
5	8	. .	. .	. .	. .	. .	30.2	50.0	46 50.03	2.08	. .	VI.	3	33.680	26 8.9	6.8	11.3	. . . .	40 1 27.0
6	7.8	. .	. .	18.0	. .	58.7	19.1	. .	53 38.45	1.97	. .	IV.	2	13.602	47 10.4	5.6	20.3	. . . .	22 36.3
7	8.9	. .	. .	. .	. .	. .	. .	43.0	53 42.43	1.97	. .	VII.	2	15.939	44 42.8	5.6	19.3	. . . .	20 7.7
8	4	0.0	20.2	40.0	0.3	20.4	40.7	0.8	57 0.52	1.90	. .	IV.	3	19.934	40 31.3	5.0	17.4	. . . .	15 53.7
9	8	. .	0.8	21.0	41.0	1.3	21.1	. .	21 59 41.05	1.86	. .	IV.	3	23.871	36 24.4	4.6	15.6	. . . .	11 44.6
10	8	. .	17.5	38.0	57.8	18.5	38.0	. .	22 1 58.06	+ 1.82	. .	IV.	2	19.137	−41 23.4	− 4.2	−17.8	. . . .	−40 16 45.4

ZONE 73. OCTOBER 16. C. $D_o = -32° 3' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	19.0	. .	50.7	12.2	. .	23 11 35.15	+ 0.36	+1.95	IV.	4	51.771	− 7 11.9	− 1.9	− 1.3	23 11 37.46	−32 10 25.1
2	9	. .	. .	. .	. .	47.0	. .	24.0	19 28.99	0.24	2.26	IV.	3	35.249	24 30.8	1.6	4.2	19 31.49	27 46.6
3	9	. .	. .	. .	. .	. .	25.5	43.7	20 49.12	0.22	1.93	VI.	4	49.518	9 32.8	1.6	1.7	20 51.27	12 46.1
4	8	. .	36.4	. .	13.5	. .	. .	7.5	23 13.08	0.19	2.04	IV.	4	43.866	15 28.1	1.5	2.7	23 15.31	18 42.3
5	9	. .	4.2	. .	. .	. .	. .	35.0	23 40.54	0.18	1.87	IV.	4	52.408	6 32.1	1.5	1.2	23 42.59	9 44.8
6	7.8	. .	. .	. .	. .	. .	3.0	21.5	25 26.82	0.15	1.79	VI.	4	54.953	3 52.3	1.5	0.7	25 28.76	7 4.5
7	7	. .	31.2	49.2	7.4	26.2	44.2	. .	29 7.64	0.10	2.50	IV.	3	21.622	38 45.5	1.4	6.6	29 10.24	42 3.5
8	9	. .	. .	. .	. .	. .	. .	7.2	29 12.42	0.10	2.27	VII.	3	32.272	27 37.2	1.4	4.7	29 14.79	30 53.3
9	9	. .	. .	. .	. .	. .	7.0	. .	30 30.47	0.08	2.48	VI.	3	26.869	33 16.3	1.3	5.7	30 33.03	36 33.3
10	6.7	. .	. .	26.0	44.2	2.2	20.5	39.0	32 44.04	0.04	2.76	IV.	2	9.131	50 47.6	1.3	8.4	32 46.84	54 7.3
11	7.8	. .	. .	. .	. .	31.0	49.0	7.0	23 33 12.33	+ 0.03	+2.75	IV.	2	9.002	−51 58.2	− 1.3	− 8.9	23 33 15.11	−32 55 18.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 16,	22	− 5.709	− 0.010	− 0.530	+ 0.507	+ 0.022		

REMARKS.

Oct. 16. Night unfavorable, not perfectly clear; stars, at times, lost sight of entirely, lamp flaring.

(72) 3. Probably 38^m.

(73) 10. Micrometer reading assumed as $10^r.131$, not $9^r.131$.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 71	Oct. 10, 0 29	. .	. .	. .	. .	. .	. .	. .	30.412	53.5	45.2			
Zone 72	Oct. 16, 21 0	78 54 64.3	67.4	78.6	69.9	54.4	45.2	63.30	. .	. .	. .	63.5	64.0	
	21 29	. .	. .	. .	. .	. .	. .	. .	30.134	63.3	62.0			
	21 46	. .	. .	. .	. .	. .	. .	. .	. .	. .	63.0			
	22 1	. .	. .	. .	. .	. .	. .	. .	30.144	63.7	64.1			
Zone 73	Oct. 16, 23 0	71 24 63.2	65.1	76.2	67.6	53.3	44.2	61.60	. .	. .	. .	64.2	62.5	57.0
	23 11	. .	. .	. .	. .	. .	. .	. .	30.154	64.8	62.2			
	23 33	. .	. .	. .	. .	. .	. .	. .	30.144	64.5	61.4			

ZONE 74. OCTOBER 17. C. $D_0 = -39° 34' 50''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	. .	. .	. .	23.0	. .	21 9 42.86	+2.85	+0.39	VI.	3	36.560	−23 8.3	−23.0	−9.0	21 9 46.10	−39 58 30.3
2	7.8	. .	26.0	46.0	6.0	. .	. .	. .	14 6.23	2.78	0.13	IV.	1	11.450	49 22.2	22.3	20.2	14 9.14	40 24 54.7
3	8	12.0	32.0	52.0	. .	. .	. .	. .	16 12.08	2.74	0.54	III.	4	43.250	16 7.0	22.0	6.1	16 15.36	39 51 25.1
4	8	. .	. .	55.0	. .	. .	55.0	. .	25 14.95	2.59	0.40	III.	3	24.360	35 53.7	20.5	14.4	25 17.94	40 11 18.6
5	7	39.0	59.0	19.0	39.0	. .	. .	. .	29 39.24	2.51	0.44	IV.	3	23.610	36 40.9	19.7	14.7	29 42.19	40 12 5.3
6	7.8	. .	. .	. .	. .	37.5	. .	17.0	30 17.20	2.50	0.66	VII.	4	41.890	17 30.7	19.7	6.7	30 20.36	39 52 47.1
7	7	31.0	51.0	11.0	31.0	. .	. .	. .	38 31.22	2.35	0.53	IV.	3	23.460	36 50.4	18.3	14.8	38 34.10	40 12 13.5
8	8	. .	. .	. .	32.0	. .	12.0	. .	39 32.02	2.34	0.84	VI.	4	48.010	11 7.2	18.2	4.1	39 35.20	39 46 19.5
9	7.8	2.0	22.5	42.3	. .	. .	. .	. .	46 2.32	2.22	0.95	III.	4	52.103	6 51.1	17.2	2.5	46 5.49	39 42 0.8
10	7.8	. .	. .	. .	50.0	9.5	. .	. .	46 49.71	2.21	0.74	V.	3	34.237	25 34.3	17.0	10.0	46 52.66	40 0 51.3
11	8	. .	. .	25.0	. .	. .	. .	. .	49 45.16	2.15	0.63	III.	2	21.690	38 43.1	16.6	15.6	49 47.94	14 5.3
12	8	38.0	58.0	18.0	. .	. .	. .	. .	53 38.38	2.09	0.56	III.	2	13.565	47 12.6	16.0	19.2	53 41.03	22 37.8
13	3.4	0.0	20.0	40.3	0.5	. .	. .	. .	57 0.45	2.02	0.67	IV.	2	19.970	40 31.0	15.6	16.3	57 3.14	15 52.9
14	8.9	. .	. .	21.0	. .	. .	. .	. .	21 59 41.15	1.97	0.74	III.	3	23.850	36 25.5	15.2	14.6	21 59 43.86	11 45.3
15	8	. .	18.0	38.0	. .	. .	. .	. .	22 1 58.25	1.93	0.70	III.	2	19.147	41 22.6	14.9	16.7	22 2 0.88	16 44.2
16	7.8	43.0	3.0	23.0	. .	. .	. .	. .	9 43.38	1.79	0.76	III.	2	17.963	42 36.7	13.9	17.3	9 45.93	40 17 57.9
17	8.9	. .	. .	. .	. .	28.0	. .	. .	14 7.97	1.71	1.25	V.	4	54.325	4 32.1	13.3	1.5	14 10.93	39 39 36.9
18	6.7	. .	. .	. .	. .	2.0	22.5	. .	15 42.16	1.68	1.12	V.	4	41.520	17 55.3	13.1	6.9	15 44.96	53 5.3
19	6.7	22.0	42.0	1.5	. .	. .	. .	. .	19 21.91	1.61	1.16	III.	4	43.385	15 58.5	12.7	6.1	19 24.68	51 7.3
20	3.4	. .	. .	. .	48.0	8.0	. .	48.0	19 48.06	1.61	1.15	IV.	4	41.267	18 11.5	12.7	7.0	19 50.82	53 21.2
21	6	12.5	32.5	52.5	12.5	. .	. .	. .	30 12.60	1.41	1.21	IV.	4	38.858	20 42.5	11.6	8.0	30 15.22	39 55 52.1
22	7	36.5	56.5	16.5	. .	. .	. .	. .	38 36.82	1.25	1.10	III.	2	21.053	39 23.1	10.8	15.7	38 39.17	40 14 39.6
23	3.4	26.5	. .	6.5	26.5	. .	. .	. .	42 26.62	1.18	1.32	IV.	3	37.543	22 6.7	10.5	8.6	42 29.12	39 57 15.8
24	7	. .	. .	. .	34.5	. .	. .	. .	43 34.48	1.16	1.49	IV.	4	49.340	9 44.7	10.4	3.6	43 37.13	39 44 48.7
25	7	. .	. .	. .	. .	. .	31.5	. .	43 41.29	1.16	1.25	VI.	3	29.505	30 31.0	10.3	12.1	43 43.70	40 5 43.4
26	7	. .	. .	. .	. .	. .	36.0	. .	44 55.70	1.13	1.17	VI.	3	22.580	37 45.3	10.3	15.1	44 58.00	40 13 0.7
27	8	43.0	3.0	23.0	. .	. .	. .	. .	49 43.12	1.04	1.43	III.	4	39.930	19 35.3	9.9	7.6	49 45.59	39 54 42.8
28	8	. .	. .	28.0	. .	. .	. .	. .	52 48.00	0.98	1.65	III.	4	54.970	3 51.9	9.7	1.3	52 50.63	38 52.9
29	7	. .	. .	10.0	31.0	. .	. .	. .	57 30.61	0.89	1.29	IV.	2	22.017	38 22.7	9.5	15.4	57 32.79	13 37.6
30	4.5	. .	. .	. .	28.0	49.0	9.5	. .	22 58 28.84	0.87	1.66	IV.	4	51.870	7 5.6	9.4	2.6	22 58 31.37	42 7.6
31	7	. .	. .	17.0	. .	. .	. .	. .	23 6 37.11	0.72	1.54	III.	3	35.255	24 30.1	9.0	9.6	23 6 39.37	59 38.7
32	6	10.0	30.0	50.0	10.3	. .	. .	. .	11 10.21	0.64	1.59	IV.	3	36.207	23 30.6	8.8	9.2	11 12.44	58 38.6
33	7	45.0	5.0	25.0	. .	. .	. .	. .	23 27 45.08	+0.32	+1.89	III.	4	47.263	−11 55.1	−8.2	−4.5	23 27 47.29	−39 46 57.8

ZONE 75. OCTOBER 19. C. $D_0 = -30° 47' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	. .	37.5	55.6	12.7	31.0	. .	23 0 55.28	−0.08	+1.33	IV.	4	50.358	−8 40.8	−9.9	−1.4	23 0 56.53	−30 56 42.1
2	8	. .	34.0	52.0	9.8	27.5	45.7	. .	5 9.83	0.14	1.41	IV.	4	54.689	4 9.5	9.7	0.6	5 11.10	30 52 9.8
3	7.8	. .	12.3	30.8	48.8	7.0	24.4	. .	10 48.66	0.22	0.76	IV.	3	26.032	34 8.9	9.4	5.4	10 49.20	31 22 13.7
4	9	. .	38.3	56.2	14.7	32.7	50.4	. .	13 14.46	0.26	0.71	IV.	3	24.365	35 53.7	9.2	5.6	13 14.91	23 58.5
5	9	. .	24.0	42.0	. .	. .	. .	. .	15 0.04	0.29	0.69	III.	3	23.162	37 8.8	9.2	5.8	15 0.44	25 13.8
6	9	. .	. .	. .	9.0	. .	47.0	. .	15 10.04	0.29	1.02	IV.	3	37.525	22 7.9	9.2	3.4	15 10.77	10 10.5
7	9	. .	. .	. .	. .	24.5	42.0	. .	20 6.11	0.36	0.35	V.	2	9.371	51 35.3	9.0	8.2	20 6.10	39 42.5
8	7.8	. .	28.0	46.1	4.0	. .	40.2	. .	28 4.19	0.48	0.56	IV.	3	20.110	40 20.4	8.9	6.4	28 4.27	28 25.7
9	9	. .	. .	. .	. .	. .	. .	50.0?	35 56.00	0.60	0.89	V.	3	35.529	24 13.3	8.8	3.8	35 56.29	12 15.9
10	9	. .	. .	. .	. .	18.0	. .	. .	37 59.93	0.63	0.69	V.	3	27.298	32 49.7	8.8	5.2	37 59.99	20 53.7
11	9	. .	. .	. .	. .	46.0	. .	18.5	39 25.75	0.65	0.79	V.	3	31.669	28 15.4	8.8	4.4	39 25.89	16 18.6
12	7.8	. .	35.0	52.4	10.3	29.2	47.0	. .	23 46 10.79	−0.74	+0.88	IV.	3	36.356	−23 21.3	−8.9	−3.6	23 46 10.93	−31 11 23.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 19,	22	− 6.303	− 0.018	− 0.530	+ 0.507	+ 0.022		

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 74	Oct. 17,	21 10	78 54 67.6	69.2	82.0	71.2	58.2	47.8	66.00	29.916	66.0	65.5	. .	. .	66.5
		21 30	. .	. .	. .	. .	. .	. .	. .	29.912	66.2	65.0			
		22 9	. .	. .	. .	. .	. .	. .	. .	29.904	66.3	65.0			
		22 38	. .	. .	. .	. .	. .	. .	. .	29.912	67.0	65.2			
		23 11	. .	. .	. .	. .	. .	. .	. .	29.918	66.8	64.8			
		23 27	. .	. .	. .	. .	. .	. .	. .	29.912	66.8	64.7			
Zone 75	Oct. 19,	23 0	70 9 50.0	58.7	70.0	60.1	42.1	31.9	52.13	30.244	48.3	38.0	50.4	50.4	57.2
		23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	37.6			
		23 39	. .	. .	. .	. .	. .	. .	. .	30.240	47.8	36.0			

REMARKS.

Oct. 17, 23[h] 30[m]. Interrupted by clouds; very clear.

Oct. 19. Night unfavorable; stars unsteady.

(74) 17. Differs 2[s].36 from Transit Z., 1846, October 16.

ZONE 75. OCTOBER 19. C. $D_0 = -30° 47' 50'$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	9	. .	. .	48.3	6.?	. .	. .	5.7	23 50 6.19	− 0.80	+0.76	IV.	3	31.448	−28 29.3	− 8.9	− 4.5	23 50 6.15	−31 16 32.7
14	8.9	. .	38.2	54.5	. .	30.0	. .	. .	53 12.34	0.85	1.24	IV.	4	52.991	5 55.3	8.9	1.0	53 12.73	30 53 55.2
15	9	. .	. .	. .	. .	40.0	57.1	. .	54 21.45	0.86	0.45	V.	1	17.430	43 7.6	8.9	6.8	54 21.04	31 31 13.3
16	7	. .	. .	. .	. .	48.1	6.2	. .	56 30.24	0.89	1.15	V.	4	48.951	10 8.6	8.9	1.6	56 30.50	30 58 9.1
17	8	. .	. .	. .	. .	. .	49.0	6.2	57 12.65	0.90	0.98	VI.	4	41.911	17 30.2	9.0	2.7	57 12.73	31 5 31.9
18	8	. .	. .	. .	. .	. .	51.0	8.1	23 58 14.57	0.92	0.83	VI.	3	35.965	23 45.6	9.0	3.7	23 58 14.48	31 11 48.3
19	9	. .	46.0	. .	22.2	. .	58.0	. .	0 5 22.17	1.02	1.20	IV.	4	53.372	5 31.6	9.0	0.9	0 5 22.35	30 53 31.5
20	9	. .	14.3	. .	49.3	. .	. .	. .	7 49.80	1.06	1.07	IV.	4	47.046	12 8.6	9.0	1.9	7 49.81	31 0 9.5
21	8.9	. .	. .	. .	6.0	24.0	. .	0.5	9 6.15	1.07	0.71	IV.	3	31.927	27 59.0	9.1	4.4	9 5.79	16 2.5
22	9	. .	. .	38.0	. .	. .	32.2	. .	12 56.10	1.13	0.55	IV.	3	25.011	35 13.0	9.1	5.5	12 55.52	23 17.6
23	8	. .	57.2	15.7	33.5	52.0	. .	. .	17 33.62	1.19	0.36	IV.	2	17.671	42 55.3	9.2	6.8	17 32.79	31 1.3
24	8	. .	51.0	8.7	26.8	45.0	. .	21.0	18 26.49	1.20	0.28	IV.	2	14.111	46 38.4	9.2	7.4	18 25.57	34 45.0
25	9	. .	. .	. .	20.7	. .	55.7	. .	24 20.24	1.28	0.71	IV.	3	33.610	26 13.5	9.5	4.1	24 19.67	14 17.1
26	8	. .	58.0	17.2	35.2	53.2	11.2	. .	26 34.98	1.31	0.87	IV.	4	38.750	20 49.3	9.6	3.3	26 34.54	8 52.2
27	9	. .	29.0	47.0	4.2	23.0	40.5	. .	0 29 4.73	− 1.35	+0.35	IV.	3	18.041	−42 30.0	− 9.8	− 6.7	0 29 3.73	−31 30 36.5

ZONE 76. OCTOBER 26. C. $D_0 = -29° 32' 50'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6.7	. .	. .	. .	25.0	42.8	0.7	18.6	22 51 25.02	− 1.47	−0.67	IV.	2	17.802	−42 47.0	−10.8	− 6.8	22 51 22.88	−30 15 54.6
2	6.7	. .	. .	51.8	8.3	27.2	44.6	2.4	22 53 9.14	1.50	0.86	IV.	4	53.535	5 21.3	10.7	1.5	22 53 6.78	29 38 23.5
3	7	. .	40.6	58.0	15.2	33.2	51.0	. .	23 0 15.83	1.60	0.88	IV.	4	53.920	4 57.0	10.2	1.4	23 0 13.35	37 58.6
4	8.9	. .	. .	44.5	2.2	19.8	37.5	. .	2 2.14	1.63	0.84	IV.	4	46.759	12 26.4	10.1	2.5	0 59.67	29 45 29.0
5	7	. .	. .	. .	. .	59.8	17.3	35.4	2 41.84	1.64	0.67	V.	2	13.742	47 1.4	10.0	7.4	2 39.53	30 20 8.8
6	9.10	. .	. .	. .	. .	. .	. .	30.0?	17 36.48	1.86	0.70	VII.	2	11.539	49 18.9	9.1	7.7	17 33.92	22 25.7
7	9	. .	. .	. .	47.4	5.5	23.5	. .	19 47.64	1.89	0.72	IV.	2	13.232	47 33.5	9.0	7.5	19 45.03	30 20 40.0
8	9	. .	. .	18.2	. .	54.5	11.2	. .	23 36.22	1.95	0.90	IV.	4	46.045	13 11.3	8.8	2.6	23 33.37	29 46 12.7
9	9.10	. .	. .	24.8?	. .	. .	. .	. .	27 42.53	2.01	0.93	III.	4	50.919?	8 5.4	8.6	1.9	27 39.59	29 41 5.9
10	9	. .	55.7	. .	. .	48.2	5.7	. .	31 30.59	2.06	0.79	IV.	3	22.039	38 19.4	8.5	6.1	31 27.74	30 11 24.0
11	8	. .	. .	. .	. .	23.8	41.2	. .	32 5.91	2.07	0.92	V.	4	45.869	13 22.1	8.4	2.6	32 2.92	29 46 23.1
12	9	. .	. .	. .	. .	. .	0.2	22.0	32 . .	2.07	0.93	VI.	4	47.521	11 38.2	8.4	2.4	32 . .	44 39.0
13	7.8	. .	38.2	55.7	13.4	. .	49.0	. .	35 13.54	2.12	0.90	IV.	3	40.058	19 28.8	8.3	3.5	35 10.52	29 52 30.6
14	8	. .	52.1	9.5	27.2	45.5	. .	. .	37 27.45	2.15	0.79	IV.	2	19.411	41 6.3	8.3	6.5	37 24.51	30 14 11.1
15	8	. .	. .	42.4	0.3	. .	36.0	. .	46 0.32	2.27	0.81	IV.	2	19.688	40 48.8	8.1	6.5	45 57.24	13 53.4
16	8	. .	. .	31.5	49.3	7.7	25.2	. .	48 49.51	2.31	0.79	IV.	2	13.218	47 34.4	8.1	7.4	48 46.41	20 39.9
17	6	. .	12.2	30.1	47.5	5.7	23.4	. .	51 47.78	2.35	0.80	IV.	2	14.597	46 8.1	8.1	7.2	51 44.63	19 13.4
18	9.10	. .	. .	. .	. .	. .	41.0?	. .	52 5.44	2.36	0.86	VI.	3	25.000?	35 13.6	8.0	5.7	52 2.22	8 17.3
19	8	. .	. .	24.6	42.2	. .	17.5	. .	56 42.19	2.42	0.89	IV.	3	26.931	33 12.5	8.0	5.4	56 38.88	6 15.9
20	8.9	. .	. .	27.3	45.7	3.0	20.5	38.5	56 45.21	2.42	0.85	IV.	3	20.460	39 58.5	8.0	6.4	56 41.94	30 13 2.9
21	8	. .	. .	. .	. .	49.5	7.3	25.2	23 58 31.89	2.45	0.93	V.	3	33.642	26 11.6	8.0	4.4	23 58 28.51	29 59 14.0
22	9.10	. .	. .	43.8	1.5	. .	40.0	. .	0 6 1.49	2.56	0.81	IV.	2	9.449	51 30.5	8.0	8.0	0 5 58.12	30 24 36.5
23	9.10	. .	. .	. .	35.3	. .	. .	. .	7 35.32	2.58	0.99	IV.	4	41.955	17 28.1	8.0	3.2	7 31.75	29 50 29.3
24	6.7	8.5	26.2	44.0	1.3	19.4	37.0	55.0	14 1.63	2.67	1.01	IV.	4	43.669	15 40.6	8.0	2.9	13 57.95	48 41.5
25	9	. .	15.4	33.2	50.7	8.2	26.0	44.0	16 50.72	2.71	1.02	IV.	4	43.601	15 44.9	8.0	2.9	16 46.99	29 48 45.8
26	9	. .	12.3	. .	47.3	5.8	. .	. .	19 47.72	2.75	0.85	IV.	2	9.311	51 39.1	8.0	8.1	19 44.12	30 24 45.2
27	7	. .	. .	. .	49.7	6.8	24.3	42.0	20 49.07	2.76	1.01	IV.	4	40.308	19 11.8	8.0	3.4	20 45.30	29 52 13.2
28	6.7	. .	43.3	1.0	19.0	36.9	54.8	. .	26 18.99	2.86	0.86	IV.	2	10.836	50 3.4	8.0	7.8	26 15.27	30 23 9.2
29	9	. .	. .	. .	. .	23.0	41.5	0.2	27 6.12	2.86	1.08	V.	4	50.785	8 13.5	8.0	1.9	27 2.18	29 41 13.4
30	9	. .	. .	. .	. .	53.4	11.8	. .	0 28 11.46	− 2.87	−1.08	V.	4	51.232	− 7 45.7	− 8.0	− 1.8	0 29 7.51	−29 40 45.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 26,	22	. .	− 0.012	− 0.168	+ 0.103	+ 0.351		

REMARKS.

(76) 30. Minute assumed as 29 instead of 28, and Transits over T.'s III and IV as recorded over T.'s V and VI.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 75	Oct. 19, 23 58	. .	. .	. .	. .	. .	. .	. .	30.235	47.1	35.1			
	0 18	. .	. .	. .	. .	. .	. .	. .	. .	. .	35.4			
	0 29	70 9 49.6	59.4	69.9	60.7	42.9	31.1	52.27	30.236	46.5	34.8	48.5	47.8	
Zone 76	Oct. 26, 22 50	68 54 64.2	68.5	80.6	71.6	57.5	45.4	64.63	30.282	54.5	50.3	53.5	52.5	51.3
	23 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	50.0			
	23 27	. .	. .	. .	. .	. .	. .	. .	30.270	54.0	49.8			
	23 50	64.4	68.6	80.2	72.1	56.9	45.2	64.57	. .	. .	49.4	53.0	52.0	
	0 14	. .	. .	. .	. .	. .	. .	. .	30.264	53.7	49.3			
	0 28	. .	. .	. .	. .	. .	. .	. .	30.250	53.7	51.0			
	0 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	51.4			

ZONE 76. OCTOBER 26. C. $D_\circ = -29° 32' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
31	7.8	. .	38.2	56.2	14.0	32.0	49.8	. .	0 33 14.04	− 2.93	−0.92	IV.	2	18.874	−41 39.7	− 8.1	− 6.6	0 33 10.19	−30 14 44.4
32	8	. .	5.0	23.0	40.8	. .	16.2	. .	40 40.72	3.03	0.97	IV.	3	23.487	36 48.7	8.3	5.9	40 36.72	9 52.9
33	6	. .	50.6	8.2	26.0	44.1	1.7	19.5	51 26.12	3.18	1.00	IV.	3	23.231	37 4.8	9.0	5.9	51 21.94	10 9.7
34	7	. .	36.1	53.7	11.5	29.4	47.0	. .	0 56 11.54	3.24	0.96	IV.	2	13.962	46 47.6	9.3	7.4	0 56 7.34	30 19 54.3
35	8	. .	46.7	4.6	22.4	40.3	58.0	. .	1 13 22.42	3.45	1.17	IV.	4	45.771	13 28.5	10.9	2.6	1 13 17.80	29 46 32.0
36	9	. .	. .	. .	. .	. .	. .	19.5	13 25.98	3.45	0.98	VII.	1	10.659	50 11.0	10.9	7.9	13 21.55	30 23 19.8
37	9	. .	. .	35.5	53.0	. .	28.3	. .	19 53.02	3.53	1.05	IV.	2	18.811	41 43.7	11.7	6.6	19 48.44	30 14 52.0
38	9	. .	. .	. .	52.0	11.2	. .	44.7	20 52.32	3.54	1.22	IV.	4	51.589	7 23.4	11.8	1.8	20 47.56	29 40 27.0
39	8.9	. .	42.2	0.4	17.4	35.6	53.1	. .	23 17.76	3.57	1.24	IV.	4	53.479	5 24.8	12.2	1.5	23 12.95	38 28.5
40	9	. .	. .	. .	14.0	. .	. .	. .	26 12.02	3.61	1.17	IV.	4	40.749	18 43.9	12.7	3.4	26 7.24	29 51 50.0
41	9	. .	44.0	1.0	19.3	. .	. .	. .	29 19.24	3.64	1.09	IV.	3	23.752	36 31.9	13.1	5.9	29 14.51	30 9 40.9
42	9	. .	. .	56.3	14.4	32.0	49.7	. .	30 14.22	3.65	1.10	IV.	3	24.989	36 17.1	13.2	5.8	30 9.47	30 9 26.1
43	8	. .	49.9	7.3	25.0	43.1	0.8	. .	32 25.24	3.68	1.21	IV.	4	45.176	14 6.0	13.5	2.7	32 20.35	29 47 12.2
44	8	. .	35.9	53.5	11.3	29.0	46.6	. .	43 11.28	3.80	1.24	IV.	4	45.176	14 6.0	14.4	2.7	43 6.24	47 13.1
45	8	. .	30.3	48.5	5.8	24.0	42.0	. .	49 6.22	3.87	1.24	IV.	4	41.520	17 55.6	15.0	3.2	49 1.11	29 51 3.8
46	9	. .	. .	20.9?	. .	. .	. .	. .	54 38.70	3.92	1.13	III.	2	19.822	40 40.3	15.7	6.4	54 33.65	30 13 52.4
47	6.7	. .	. .	32.2	49.2	7.3	25.2	43.0	55 49.91	3.94	1.09	IV.	2	10.645	50 15.5	15.8	7.9	55 44.88	23 29.2
48	6.7	. .	. .	32.5	50.3	8.2	26.0	43.7	1 57 50.38	3.96	1.21	IV.	3	31.970	27 56.4	16.1	4.7	1 57 45.21	30 1 7.2
49	8	. .	. .	28.3	47.0	4.2	22.2	. .	2 0 46.59	3.99	1.34	IV.	4	55.246	3 34.6	16.5	1.3	2 0 41.26	29 36 42.4
50	8	. .	30.0	47.3	5.4	23.1	40.8	. .	3 5.35	4.01	1.31	IV.	4	48.134	9 57.5	16.8	2.3	3 0.03	29 43 6.6
51	8.9	. .	52.2	10.0	27.3	45.2	3.2	. .	15 27.58	4.13	1.25	IV.	3	31.246	28 42.0	18.9	4.7	15 22.20	30 1 55.6
52	9	. .	. .	. .	37.7	. .	. .	32.0	17 38.26	4.15	1.34	IV.	4	48.741	10 22.1	19.4	2.2	16 32.77	29 43 33.7
53	9	. .	13.5	. .	50.8	. .	24.0	42.2	2 19 49.34	− 4.18	−1.33	IV.	4	43.424	−15 56.1	−19.9	− 3.0	2 19 43.83	−29 49 9.0

ZONE 77. OCTOCER 28. C. $D_\circ = -32° 3' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	1.3	19.1	38.0	55.1	. .	22 59 19.24	− 1.25	−0.39	IV.	3	26.771	−33 22.6	− 6.0	− 6.2	22 59 17.60	−32 36 44.8
2	9.10	. .	. .	48.2	6.0	24.2	. .	0.7	23 8 6.11	1.39	0.23	IV.	4	42.889	16 29.4	5.6	3.2	23 8 4.49	19 48.2
3	9.10	. .	. .	. .	6.5	24.5	. .	. .	10 6.66	1.42	0.61	IV.	2	11.188	49 41.5	5.5	9.0	10 4.63	53 6.0
4	9	. .	. .	. .	. .	47.2	. .	. .	11 38.99	1.44	0.15	V.	4	51.804	7 9.5	5.4	1.6	11 37.40	10 26.5
5	9	. .	. .	. .	45.0	. .	21.8	39.0	13 44.93	1.48	0.20	IV.	4	46.738	12 27.8	5.3	2.5	13 43.25	15 45.6
6	9	. .	35.7	52.0	. .	28.1	. .	. .	16 10.96	1.51	0.15	IV.	4	53.396	5 30.1	5.2	1.3	16 9.30	8 46.6
7	9.10	. .	. .	. .	. .	29.0	46.7	. .	18 10.40	1.54	0.50	V.	2	21.886	38 30.8	5.1	7.0	18 8.36	41 52.9
8	9.10	. .	. .	. .	. .	. .	8.9	27.5	19 32.60	1.57	0.35	VI.	3	35.384	24 22.3	5.0	4.6	19 30.68	27 41.9
9	9.10	. .	. .	. .	. .	. .	29.0	46.0	20 52.02	1.58	0.20	VI.	4	49.627	9 25.9	4.9	2.0	20 50.24	12 42.8
10	8.9	. .	. .	59.0	17.4	35.2	53.2	. .	23 17.16	1.63	0.27	IV.	4	43.961	15 22.2	4.8	3.0	23 15.26	18 40.0
11	9	. .	. .	. .	. .	2.8	21.4	39.7	23 44.90	1.63	0.18	V.	4	52.519	6 24.8	4.8	1.5	23 43.09	9 41.1
12	7.8	. .	. .	. .	30.3	48.7	6.5	. .	25 30.32	1.66	0.16	IV.	4	55.114	3 42.8	4.8	1.0	25 28.50	6 58.6
13	7	. .	34.7	53.2	11.2	29.8	47.7	. .	29 11.32	1.72	0.53	IV.	3	22.710	37 37.3	4.6	6.9	29 9.07	40 58.8
14	9	. .	. .	. .	. .	. .	. .	11.0	29 16.26	1.73	0.41	VII.	3	33.492	26 20.6	4.6	4.9	29 14.12	29 40.1
15	9	. .	. .	. .	. .	52.2	10.7	28.7	30 33.91	1.74	0.49	V.	3	26.952	33 11.3	4.5	6.1	30 31.68	36 31.9
16	6.7	. .	10.8	29.2	47.3	6.4	24.2	42.4	32 47.55	1.78	0.69	IV.	2	10.211	50 42.7	4.4	9.3	32 45.08	54 6.4
17	8	. .	39.2	. .	16.2	34.4	52.5	10.6	33 15.92	1.79	0.69	IV.	2	10.121	50 48.3	4.4	9.3	33 13.44	54 12.0
18	9.10	. .	. .	29.5	47.0	5.3	24.0	. .	35 47.32	1.82	0.56	IV.	3	21.651	38 43.7	4.4	7.1	35 44.94	42 5.2
19	9.10	. .	. .	57.0	. .	. .	1.2	28.0	40 33.44	1.89	0.26	IV.	4	51.209	7 17.3	4.2	1.7	40 35.59	11 3.2
20	9	. .	9.7	27.3	45.7	4.0	22.4	. .	41 45.85	1.92	0.29	IV.	4	48.271	10 51.8	4.2	2.2	41 43.64	14 8.2
21	9.10	. .	. .	. .	16.2	. .	. .	. .	46 16.25	1.99	0.60	IV.	3	25.882	34 18.3	4.1	6.3	46 13.66	37 38.7
22	7	. .	. .	15.0	33.2	51.3	10.0	28.1	23 47 33.23	− 2.01	−0.61	IV.	3	20.662	−39 45.7	− 4.0	− 7.3	23 47 30.61	−32 43 7.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 28,	22	− 10.649	− 0.012	− 0.168	+ 0.103	+ 0.351		

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 76	Oct. 26,	0 50	68 54 64.0	68.9	80.1	72.1	56.9	44.9	64.48	. .	. .	51.0	52.8	52.0	
		0 56	. .	. .	. .	. .	. .	. .	. .	. .	. .	50.8			
		1 13	. .	. .	. .	. .	. .	. .	. .	30.242	53.2	50.7			
		1 30	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.7			
		1 43	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.2			
		1 49	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.6			
		2 0	. .	. .	. .	. .	. .	. .	. .	30.230	53.2	49.4			
		2 10	63.9	69.0	80.2	72.3	57.1	43.5	64.33	. .	. .	49.7	53.2	52.0	
		2 19	. .	. .	. .	. .	. .	. .	. .	30.218	53.1	47.5			
Zone 77	Oct. 28,	22 59	. .	. .	. .	. .	. .	. .	. .	30.072	53.0	42.9			

REMARKS.

Oct. 26. Clear; stars steady.

(76) 42. Micrometer reading assumed as 23r.989, not 24r.989.

(76) 50. Micrometer reading assumed as 49r.134 instead of 48r.134.

(76) 52. Minutes assumed as 16 instead of 17.

(77) 4. Transit over T. V assumed as 57s.2 instead of 47s.2.

(77) 19. Transits discordant; T. II assumed as recorded over T. III, and T. VI rejected.

ZONE 77. OCTOBER 28. C. $D_0 = -32° \ 3' \ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	7	. .	. .	15.0	33.2	51.3	10.0	28.2	23 47 33.24	− 2.01	−0.64	IV.	3	18.529	−41 59.6	− 4.0	− 7.7	23 47 30.59	−32 45 21.3
24	9	. .	29.3	49.3	8.0	26.2	. .	. .	51 7.32	2.07	0.36	IV.	4	43.808	15 31.8	4.0	3.0	51 4.89	18 48.8
25	7.8	. .	17.3	35.5	53.7	12.0	40.0	. .	51 53.71	2.08	0.50	IV.	3	31.772	28 8.8	4.0	5.2	51 51.13	31 28.0
26	9.10	. .	37.7	. .	. .	32.0	50.4	. .	55 14.01	2.13	0.30	IV.	4	50.792	8 13.3	4.0	1.8	55 11.58	11 29.1
27	8	. .	39.5	57.5	16.3	34.6	53.0	. .	57 16.18	2.16	0.73	IV.	2	14.288	46 27.4	4.0	8.5	57 13.29	49 49.9
28	9	. .	7.0	. .	. .	2.0	20.6	. .	23 59 43.75	2.20	0.77	IV.	2	11.054	49 49.8	4.0	9.1	23 59 40.78	53 12.9
29	7	. .	26.6	44.7	2.7	21.2	39.2	. .	0 3 2.92	2.25	0.28	IV.	4	55.338	3 28.8	4.0	1.0	0 2 0.39	6 43.8
30	9	. .	38.5	. .	15.2	33.5	. .	. .	5 15.17	2.29	0.69	IV.	2	19.831	40 39.8	4.1	7.4	5 12.19	44 1.3
31	6.7	. .	59.2	17.3	36.2	54.2	12.3	30.3	8 35.83	2.35	0.41	IV.	4	45.789	13 27.3	4.2	2.7	8 33.07	16 44.2
32	9	. .	40.8	58.8	17.0	35.2	53.7	. .	0 15 17.11	− 2.45	−0.60	IV.	3	31.049	−28 54.2	− 4.4	− 5.4	0 15 14.06	−32 32 14.0

ZONE 78. OCTOBER 28. C. $D_0 = -32° \ 3' \ 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	22.0	40.3	58.3	17.1	35.4	. .	1 49 58.62	− 3.76	−0.65	IV.	2	12.034	−48 48.4	−18.5	− 9.0	1 49 54.21	−32 52 25.9
2	9	. .	. .	21.2	40.8	. .	17.0	. .	51 40.26	3.78	0.60	IV.	3	20.721	39 42.0	18.8	7.3	51 35.88	43 18.1
3	8.9	. .	. .	. .	6.2	24.5	. .	. .	53 6.24	3.79	0.52	IV.	3	34.581	25 12.6	19.0	4.7	53 1.93	28 46.3
4	9	. .	. .	. .	. .	. .	29.8	47.7	1 53 53.11	3.80	0.54	VI.	3	29.819	30 11.2	19.1	5.6	1 53 48.77	33 45.9
5	7.8	. .	49.0	7.7	25.8	. .	. .	21.0	2 2 25.89	3.90	0.52	IV.	3	35.851	23 52.8	20.4	4.5	2 2 21.47	27 27.7
6	7.8	. .	. .	23.7	42.0	. .	18.5	36.6	2 41.96	3.91	0.54	IV.	3	32.189	27 42.8	20.4	5.1	2 37.51	31 18.3
7	8	. .	. .	. .	. .	44.5	2.3	20.9	4 26.03	3.94	0.63	V.	2	18.006	42 34.1	20.7	7.8	4 21.46	46 12.6
8	9	. .	. .	56.0	13.7	32.8	50.3	. .	19 14.09	4.10	0.55	IV.	3	34.796	24 59.0	23.0	4.7	19 9.44	28 36.7
9	9	. .	. .	. .	. .	43.0	1.5	19.2	20 24.84	4.11	0.46	V.	4	49.832	9 13.3	23.2	1.9	20 20.27	12 48.4
10	9	. .	35.8	54.2	12.3	30.8	49.3	. .	25 12.49	4.16	0.63	IV.	2	21.446	38 58.7	24.1	7.2	25 7.70	42 40.0
11	9	. .	20.7	37.8	. .	. .	32.8	. .	26 56.54	4.18	0.52	IV.	3	40.319	19 12.6	24.4	3.6	26 51.84	22 50.6
12	8	. .	14.8	. .	50.8	8.7	27.3	. .	27 50.88	4.19	0.45	IV.	4	51.621	7 21.4	24.5	1.6	27 46.24	10 57.5
13	9	. .	41.0	59.2	17.2	35.5	53.7	. .	30 17.33	4.21	0.57	IV.	3	33.152	26 42.3	25.0	5.0	30 12.55	30 22.3
14	9.10	. .	. .	. .	26.0?	. .	. .	. .	32 26.05	4.23	0.64	IV.	3	21.287	39 6.7	25.4	7.2	32 21.18	42 49.3
15	7.8	. .	38.0	56.0	14.0	32.0	50.2	. .	34 14.07	4.25	0.45	IV.	4	55.649	3 9.3	25.8	0.9	34 9.37	6 46.0
16	9	. .	. .	. .	49.0	8.2	26.0	. .	41 49.40	4.32	0.72	IV.	2	9.770	51 10.2	27.2	9.4	41 44.36	54 56.8
17	9	. .	50.3	8.0	26.7	45.1	3.3	. .	46 26.71	4.37	0.48	IV.	4	51.669	7 18.3	28.1	1.5	46 21.86	10 57.9
18	9	. .	27.5	. .	. .	22.0	. .	. .	2 54 3.88	4.43	0.51	IV.	4	48.551	10 34.1	29.6	2.1	2 53 58.94	14 15.8
19	8	. .	32.7	51.2	9.5	28.2	46.2	. .	3 1 9.56	4.50	0.76	IV.	2	8.966	52 0.4	31.0	9.6	3 1 4.30	55 51.0
20	9	. .	. .	. .	. .	. .	32.0	50.0	1 55.51	4.51	0.51	VI.	4	49.650	9 24.4	31.2	1.9	1 50.49	13 7.5
21	9.10	. .	. .	. .	. .	14.6	. .	49.7	3 55.64	4.53	0.59	V.	3	36.159	23 33.6	31.6	4.4	3 50.52	27 19.6
22	9	. .	. .	. .	. .	. .	42.7	0.7	5 6.01	4.54	0.67	VI.	2	24.769	35 29.8	31.8	6.5	5 0.80	39 18.1
23	9	. .	. .	. .	. .	35.1	43.4	12.0	6 17.08	4.55	0.54	V.	4	46.634	12 34.1	32.0	2.5	6 11.99	16 18.6
24	9.10	. .	. .	. .	49.5	. .	25.2	. .	17 49.13	4.63	0.66	IV.	3	28.000	32 5.5	34.4	5.9	17 43.84	35 55.8
25	9.10	. .	5.7	. .	41.2	. .	18.7	. .	20 41.88	4.66	0.66	IV.	3	27.899	32 11.8	35.0	5.0	20 36.56	36 2.7
26	9	. .	44.0	2.5	. .	. .	57.2	. .	23 20.68	4.67	0.54	IV.	4	51.342	7 39.0	35.6	1.6	23 15.47	11 26.2
27	9.10	. .	. .	27.2	46.0	3.7	. .	41.0	24 45.75	4.68	0.73	IV.	2	18.781	41 45.6	35.9	7.7	24 40.34	45 39.2
28	9	. .	. .	. .	. .	37.2	55.1	13.7	26 18.70	4.69	0.75	V.	1	15.482	45 9.7	36.2	8.3	26 13.26	49 4.2
29	9	. .	. .	. .	15.0	. .	. .	. .	3 28 15.02	4.71	0.57	IV.	4	46.292	12 56.0	36.6	2.5	28 9.74	16 45.1
30	7.8	. .	. .	19.0	. .	56.2	. .	33.0	28 37.83	4.71	0.61	IV.	3	40.650	18 51.6	36.7	3.6	28 32.51	22 41.9
31	8	. .	26.8	44.8	3.0	21.2	. .	. .	35 3.08	4.75	0.61	IV.	3	42.072	17 22.4	38.2	3.3	34 57.72	21 13.9
32	6.7	. .	45.5	4.2	22.2	40.7	58.2	. .	36 22.72	4.76	0.63	IV.	3	38.282	21 20.4	38.5	4.0	36 17.33	25 12.9
33	9	. .	. .	. .	. .	. .	3.2	. .	36 26.69	4.76	0.69	VI.	3	28.469	31 36.2	38.5	5.8	36 21.24	35 30.5
34	9	. .	13.1	. .	49.5	8.0	. .	. .	40 49.63	4.78	0.72	IV.	3	23.485	36 48.8	39.6	6.8	40 44.13	40 45.2
35	8.9	. .	5.5	22.5	41.0	59.5	. .	. .	3 42 41.24	− 4.79	−0.57	IV.	4	48.574	−10 32.6	−40.1	− 2.1	3 42 35.88	−32 14 24.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 28,	22	− 10.649	− 0.012	− 0.168	+ 0.103	+ 0.351		

REMARKS.

Oct. 28. Night clear. $0^h \ 16^m$, suspended sweep for other observations. Reading of Barometer, &c., at $1^h \ 40^m$.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 77	Oct. 28,	23 0	71 24 58.5	64.6	75.1	65.9	50.9	40.9	59.32	. .	. .	. .	50.0	52.3	56.5
		23 30	. .	. .	. .	. .	. .	. .	. .	30.064	51.7	42.1			
		0 0	58.0	65.4	75.1	66.8	50.8	40.5	59.45	30.058	. .	42.5	46.5	48.7	
		0 15	. .	. .	. .	. .	. .	. .	. .	. .	. .	41.5			
Zone 78	Oct. 28,	1 40	71 24 62.1	72.0	80.4	73.7	56.4	45.0	64.93	30.077	47.5	39.5	45.2	47.7	55.8
		2 2	. .	. .	. .	. .	. .	. .	. .	. .	. .	38.4			
		2 20	. .	. .	. .	. .	. .	. .	. .	30.078	46.8	38.3			
		2 40	61.5	72.2	80.0	73.0	57.1	44.0	64.63	. .	. .	37.8	45.8	46.8	
		3 1	. .	. .	. .	. .	. .	. .	. .	30.088	46.0	37.5			

ZONE 78. OCTOBER 28. C. $D_0 = -32° 3' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	8	. .	51.2	9.8	27.8	46.0	4.4	. .	3 44 27.84	− 4.80	−0.75	IV.	2	19.933	−40 33.4	−40.6	− 7.4	3 44 22.29	−32 44 31.4
37	9	. .	. .	21.0	39.1	57.2	. .	. .	3 50 39?.09	4.84	0.55	IV.	4	54.720	4 7.6	42.2	1.1	3 50 33?.70	8 0.9
38	9	. .	40.5	. .	17.3	35.0	53.3	. .	4 1 17.03	− 4.89	−0.56	IV.	4	54.208	− 4 39.7	−45.2	− 1.2	4 1 11.58	−32 8 36.1

ZONE 79. NOVEMBER 16. P. $D_0 = -27° 57' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	13.	30.3	. .	. .	. .	1 42 30.81	− 0.93	−0.54	IV.	3	26.633	−33 31.3	− 6.3	− 4.7	1 42 29.34	−28 31 22.3
2	8	30.0	47.7	5.	22.3	. .	. .	. .	45 23.65	0.96	0.53	IV.	3	27.977	32 6.9	6.7	4.5	45 22.16	29 58.1
3	7.8	51.0	8.7	26.3	43.7	. .	. .	. .	48 43.74	1.01	0.48	IV.	3	30.833	29 7.7	7.1	4.1	48 42.25	26 58.9
4	9.10	. .	. .	14.0	32.0	. .	. .	. .	50 31.81	1.03	0.52	IV.	3	29.130	30 54.6	7.3	4.4	50 30.26	28 46.3
5	8	49.0	6.5	23.7	. .	. .	. .	. .	52 41.57	1.05	0.74	III.	2	18.283	42 17.0	7.6	5.9	52 39.78	40 10.5
6	8	. .	. .	. .	. .	. .	20.0	. .	52 44.97	1.05	0.30	VI.	4	42.300	17 6.1	7.6	2.5	52 43.62	14 56.2
7	8	. .	. .	. .	. .	. .	. .	. .	1 52 . .	1.05	0.25	VII.	4	45.040	14 13.8	8.	2.2	1 53 . .	12 (2)
8	8	35.0	52.3	10.0	27.0	. .	. .	. .	2 0 27.44	1.15	0.61	IV.	3	26.090	34 5.4	8.7	4.8	2 0 25.68	31 58.9
9	7	. .	. .	. .	. .	41.0	. .	16.0	1 23.41	1.17	0.36	V.	4	40.210	19 17.6	8.9	2.8	1 21.88	17 9.3
10	8	. .	9.0	27.0	. .	. .	. .	. .	3 44.37	1.19	0.61	III.	3	26.520	33 38.3	9.2	4.7	3 42.57	31 32.2
11	7	35.0	52.5	10.3	27.5	. .	. .	. .	5 27.62	1.21	0.31	IV.	4	44.073	15 15.2	9.4	2.3	5 26.10	13 6.9
12	7	45.3	2.7	20.5	37.7	. .	. .	. .	7 37.94	1.24	0.70	IV.	2	21.953	38 26.7	9.8	5.4	7 36.00	36 21.9
13	7	. .	. .	7.0	24.7	. .	. .	. .	15 24.66	1.33	0.69	IV.	3	25.220	35 0.0	11.0	4.9	15 22.64	32 55.9
14	8	. .	. .	35.0	53.0	. .	. .	. .	20 52.79	1.40	0.45	IV.	4	39.390	20 9.4	11.9	2.9	20 50.94	18 4.2
15	7	5.5	23.0	40.0	. .	. .	. .	. .	24 57.87	1.44	0.29	III.	4	46.820	12 22.7	12.6	1.9	24 56.15	10 17.2
16	7	. .	. .	21.5	39.0	. .	. .	. .	25 39.06	1.46	0.62	IV.	3	30.585	29 23.4	12.7	4.2	25 36.98	27 20.3
17	8	. .	. .	32.0	. .	6.5	. .	. .	28 49.21	1.49	0.88	IV.	2	16.812	43 49.0	13.3	6.1	28 46.84	41 48.4
18	6	41.0	58.5	16.0	33.5	. .	. .	. .	32 33.59	1.53	0.66	IV.	3	29.850	30 9.3	14.0	4.3	32 31.40	28 7.6
19	8	. .	. .	. .	. .	45.5	. .	. .	33 27.84	1.54	0.92	V.	2	15.850	44 49.3	14.1	6.2	33 25.38	42 49.6
20	8	. .	. .	43.0	. .	. .	. .	. .	35 0.54	1.56	0.37	III.	4	47.520	11 38.9	14.4	1.8	34 58.61	9 35.1
21	8	. .	. .	. .	. .	45.0	. .	. .	35 27.36	1.56	0.81	V.	3	22.755	37 34.4	14.5	5.3	35 24.99	35 34.2
22	7	. .	40.0	58.0	15.0	. .	. .	. .	37 15.26	1.58	0.75	IV.	3	25.852	34 20.2	14.8	4.8	37 12.93	32 19.8
23	4.5	34.0	51.5	9.0	26.5	. .	. .	. .	43 26.62	1.65	0.81	IV.	3	24.260	36 0.2	16.0	5.1	43 24.16	34 1.3
24	6	13.0	30.3	47.7	5.5	. .	. .	. .	46 5.49	1.67	0.84	IV.	3	23.784	36 29.9	16.5	5.1	46 2.98	34 31.5
25	9	. .	49.0	. .	24.0	. .	. .	. .	48 24.10	1.70	0.77	IV.	3	27.790	32 18.6	17.0	4.5	48 21.63	30 20.1
26	8.9	. .	40.0	57.0	. .	. .	. .	. .	51 14.82	1.73	0.54	III.	4	41.170	18 17.6	17.6	2.7	51 12.55	16 17.9
27	9	. .	. .	. .	. .	. .	2.0	. .	51 26.97	1.73	0.56	VI.	4	39.115	20 25.9	17.6	3.0	51 24.68	18 26.5
28	8	. .	. .	29.0	. .	. .	. .	. .	53 46.58	1.75	0.97	III.	2	17.943	42 38.0	18.1	5.9	53 43.86	40 42.0
29	8	. .	. .	. .	. .	19.0	. .	. .	54 19.02	1.76	0.51	V.	4	43.363	15 59.7	18.1	2.4	54 16.75	14 0.2
30	4	. .	. .	. .	12.0	29.0	46.0	. .	55 11.42	1.77	0.96	IV.	2	18.550	42 0.3	18.3	5.8	55 8.69	40 4.4
31	9	59.0	17.0	35.0	. .	. .	. .	. .	2 58 52.14	1.80	0.84	III.	3	26.107	34 4.1	19.1	4.8	2 58 49.50	32 8.0
32	4	36.0	53.7	11.3	28.5	. .	. .	. .	3 1 28.70	1.83	0.71	IV.	3	33.393	26 27.3	19.6	3.8	3 1 26.16	24 30.7
33	6	8.5	26.0	43.5	1.0	. .	. .	. .	7 1.01	1.88	0.45	IV.	4	48.824	10 16.8	20.8	1.7	6 58.68	8 19.3
34	5	31.0	48.5	6.0	23.5	. .	. .	. .	17 23.59	1.97	0.84	IV.	3	30.180	29 48.8	23.1	4.2	17 20.78	27 56.1
35	7	33.0	50.5	8.0	25.7	. .	. .	. .	24 25.66	2.03	0.83	IV.	3	31.553	28 22.7	24.7	4.0	24 22.80	26 31.4
36	8	. .	. .	30.0	. .	. .	. .	. .	30 47.58	2.08	1.04	III.	2	21.530	38 53.4	26.2	5.4	30 44.46	37 5.0
37	4	43.0	0.7	18.3	. .	. .	. .	. .	32 35.78	2.09	0.85	III.	3	31.903	28 0.3	26.6	4.0	32 32.84	26 10.9
38	8.9	. .	. .	. .	. .	10.0	. .	. .	32 52.38	2.10	0.94	V.	3	27.615	32 29.8	26.7	4.6	32 49.34	30 41.1
39	6.7	. .	4.0	21.3	39.0	. .	. .	. .	34 39.01	2.11	0.89	IV.	3	30.883	29 4.6	27.1	4.1	34 36.01	27 15.8
40	8	. .	. .	. .	1.0	. .	. .	. .	37 1.05	2.13	1.06	IV.	2	21.523	38 53.8	27.7	5.4	36 57.86	37 6.9
41	7	18.0	35.5	53.0	. .	. .	. .	. .	39 10.58	2.14	0.79	III.	3	37.383	22 16.7	28.2	3.2	39 7.65	20 28.1
42	8	. .	. .	. .	. .	. .	. .	52.5	3 38 59.89	− 2.14	−0.69	VII.	4	42.983	−16 22.5	−28.2	− 2.4	3 38 57.06	−28 14 33.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846,	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Nov. 16	0	− 7.609	− 0.032	− 0.168	+ 0.103	+ 0.351		

REMARKS.

Nov. 16. After 3^h 30^m stars very unsteady.

(79) 29. Transit over T. IV assumed as recorded over T. V.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 78	Oct. 28,	3 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	38.4			
		3 40	. .	. .	. .	. .	. .	. .	. .	30.086	45.5	38.4			
		3 50	71 24 60.9	72.0	80.1	72.5	56.9	43.9	64.38	30.090	45.0	37.0	43.8	46.0	
Zone 79	Nov. 16,	1 40	67 39 61.5	66.8	82.4	69.3	54.0	42.3	62.72	30.190	51.5	45.5	50.0		
		2 15	. .	. .	. .	. .	. .	. .	. .	. .	. .	44.7			
		3 1	. .	. .	. .	. .	. .	. .	. .	30.190	50.0	43.0			
		3 40	60.8	67.5	82.3	70.0	54.5	41.3	62.73	30.196	49.7	42.6	48.0	. .	55.0

ZONE 80. NOVEMBER 20. P. $D_{\circ} = -35° 48' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	. .	. .	58.0	0 45 0.51	− 2.53	−2.41	VII.	2	15.880	−44 46.6	− 2.2	−10.8	0 44 55.57	−36 33 49.6
2	6	31.0	51.0	10.0	29.0	. .	. .	. .	0 59 28.96	2.81	2.19	IV.	2	21.663	38 45.0	3.0	9.2	0 59 23.96	27 47.2
3	7	56.0	14.5	33.5	. .	. .	. .	. .	1 5 52.72	2.92	0.93	III.	4	48.020	11 7.4	3.5	1.9	1 5 48.87	0 2.8
4	8	. .	. .	. .	. .	. .	41.0	. .	6 2.70	2.92	2.41	VI.	2	17.147	43 27.8	3.5	10.4	5 57.37	32 31.7
5	8	. .	25.5	44.0	3.5	. .	. .	. .	28 3.42	3.32	1.26	IV.	4	41.580	17 51.8	5.5	3.6	27 58.84	6 50.9
6	8	31.0	50.0	10.0	. .	. .	. .	. .	1 43 28.52	− 3.59	−1.74	III.	3	31.960	−27 56.8	− 7.3	− 6.3	1 43 23.19	−36 17 0.4

ZONE 81. NOVEMBER 20. P. $D_{\circ} = -30° 48' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	. .	35.0	. .	2 3 56.74	− 4.65	−0.77	VI.	2	18.513	−42 2.3	− 4.6	− 6.8	2 3 51.32	−31 30 13.7
2	3.4	. .	47.0	5.5	23.3	. .	. .	. .	6 23.33	4.68	0.71	IV.	2	22.850	37 30.4	5.0	6.1	6 17.94	25 41.5
3	7	4.0	22.0	40.0	. .	. .	. .	. .	10 58.04	4.74	0.69	III.	3	23.520	36 46.4	5.7	6.0	10 52.61	24 58.1
4	8	. .	. .	28.5	. .	. .	. .	. .	11 46.54	4.75	0.72	III.	2	19.670	40 49.9	5.8	6.6	11 41.07	29 2.3
5	8	. .	. .	. .	. .	. .	. .	19.0	11 25.00	4.75	0.52	VII.	3	37.920	21 42.6	5.8	3.5	11 19.73	9 51.9
6	9	. .	15.0	. .	. .	. .	. .	. .	14 51.20	4.80	0.80	II.	1	11.470	49 20.6	6.3	8.0	14 45.60	37 34.9
7	7	39.5	58.0	16.0	34.0	. .	. .	. .	21 33.84	. .	0.46	IV.	4	40.750	18 43.8	7.5	3.1	21 (38)	6 54.4
8	8	. .	21.0	39.0	. .	. .	. .	. .	23 56.99	4.93	0.39	III.	4	46.240	12 59.3	7.9	2.2	23 51.67	1 9.4
9	7	32.5	50.0	8.0	26.0	. .	. .	. .	32 26.13	5.02	0.53	IV.	3	33.120	26 44.3	9.4	4.3	32 20.58	14 58.0
10	6	. .	7.0	25.0	43.5	. .	. .	. .	33 43.20	5.04	0.53	IV.	3	31.470	28 27.9	9.7	4.6	33 37.63	16 42.2
11	7	38.0	56.0	14.0	. .	. .	. .	. .	35 31.93	5.06	0.37	III.	4	44.665	14 38.1	10.0	2.4	35 26.50	2 50.5
12	7	. .	10.5	29.0	. .	. .	. .	. .	36 46.89	5.08	0.78	III.	1	6.840	54 12.0	10.2	9.4	36 41.03	42 31.6
13	7	43.5	1.5	19.0	. .	. .	. .	. .	39 37.28	5.11	0.39	III.	4	40.950	18 31.3	10.8	3.0	39 31.78	6 45.1
14	7	. .	35.0	52.5	10.3	. .	. .	. .	43 10.66	5.15	0.58	IV.	2	22.350	38 2.0	11.4	6.2	43 4.93	26 19.6
15	7	12.0	30.0	48.0	. .	. .	. .	. .	45 5.95	5.18	0.34	III.	4	44.220	15 6.1	11.8	2.5	45 0.43	3 20.4
16	6	. .	. .	23.0	40.5	59.0	. .	. .	45 40.84	5.18	0.57	IV.	2	22.450	37 55.8	11.9	6.1	45 35.09	26 13.8
17	6	30.5	48.5	6.5	24.0	. .	. .	. .	48 24.45	5.21	0.60	IV.	2	18.717	41 49.7	12.4	6.8	48 18.64	31 30 8.9
18	7	51.0	9.0	27.5	45.3	. .	. .	. .	2 59 45.14	5.34	0.22	IV.	4	50.070	8 58.7	14.7	1.6	2 59 39.58	30 57 15.0
19	7	. .	11.0	29.0	47.0	. .	. .	. .	3 1 46.97	5.36	0.18	IV.	4	53.745	5 8.0	15.1	1.0	3 1 41.43	30 53 24.1
20	6	12.5	30.5	48.5	6.0	. .	. .	. .	10 6.42	5.45	0.46	IV.	3	25.610	34 35.5	16.9	5.6	10 0.51	31 22 58.0
21	7	. .	. .	4.5	. .	. .	. .	. .	18 22.55	5.54	0.60	III.	1	9.500	51 24.2	18.6	8.3	18 16.41	39 51.1
22	7	. .	31.0	. .	6.0	. .	. .	. .	20 6.51	5.55	0.28	IV.	4	38.650	20 55.7	19.0	3.4	20 0.68	9 18.1
23	7	0.5	18.5	36.0	54.0	. .	. .	. .	3 27 54.22	− 5.63	−0.24	IV.	4	39.950	−19 34.0	−20.6	− 3 2	3 27 48.35	−31 7 57.8

ZONE 82. NOVEMBER 21. C. $D_{\circ} = -33° 18' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	6.0	24.5	43.0	1.5	20.0	. .	0 0 43.02	− 0.03	−4.00	IV.	4	45.505	−13 45.3	− 0.1	− 6.0	0 0 38.99	−33 32 1.4
2	8	. .	. .	28.0	46.3	. .	23.0	. .	3 46.30	0.10	3.30	IV.	4	39.748	19 46.7	0.1	7.1	3 42.90	38 3.9
3	8.9	. .	. .	50.8	9.3	27.9	46.3	. .	7 9.32	0.16	1.62	IV.	3	25.732	34 27.7	0.0	10.1	7 7.54	52 47.8
4	8.9	. .	25.0	43.5	. .	. .	39.0	57.8	9 2.09	0.20	3.59	IV.	4	42.072	17 20.8	0.0	6.7	8 58.30	35 37.5
5	7.8	. .	. .	. .	12.3	31.0	49.5	8.0	9 12.49	0.21	−4.08	IV.	4	46.221	13 0.4	0.0	5.8	9 8.20	33 31 16.2
6	9	. .	. .	7.2	. .	42.8	. .	. .	11 24.96	0.24	+0.28	IV.	2	9.812	51 7.5	0.0	13.4	11 25.00	34 9 30.9
7	9	. .	. .	. .	47.5	5.8	23.8	. .	0 12 47.22	− 0.26	−3.56	IV.	4	41.796	−17 38.1	− 0.0	− 6.7	0 12 43.40	−33 35 54.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Nov. 21,	0	− 11.589	− 0.032	− 0.168	+ 0.103	+ 0.351		

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 80	Nov. 20,	0 45	75 9 68.0	73.2	87.0	76.0	60.0	47.0	68.53	29.988	52.5	40.5	52.0		
		1 28	. .	. .	. .	. .	. .	. .	. .	29.988	51.5	40.6			
		1 43	. .	. .	. .	. .	. .	. .	. .	29.984	51.0	40.0			
Zone 81	Nov. 20,	1 55	70 9 65.8	74.2	84.3	74.0	61.3	45.7	67.55	. .	. .	. .	54.0		
		2 3	. .	. .	. .	. .	. .	. .	. .	29.984	51.0	40.0			
		3 1	. .	. .	. .	. .	. .	. .	. .	29.996	50.0	38.5			
		3 27	. .	. .	. .	. .	. .	. .	. .	29.996	50.0	38.6			
Zone 82	Nov. 21,	0 0	72 39 58.8	69.2	78.0	71.2	53.9	41.2	62.05	29.954	49.0	38.0	51.0	50.5	53.3
		0 12	. .	. .	. .	. .	. .	. .	. .	. .	. .	37.9			

REMARKS.

Nov. 20. Night unfavorable. Stars appear and disappear. Reading of Barometer, &c., at 1^h 20^m. 1^h 45^m, moved to another belt.

Nov. 21. Stars very unsteady and poorly defined; appear and disappear.

(81) 6. T. II perhaps 13^s.

ZONE 83. DECEMBER 3. P. $D_0 = -34° 33' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	. .	45.0	. .	0 2 7.46	−11.86	−2.45	VI.	3	36.610	−23 5.3	− 0.0	− 6.5	0 1 53.15	−34 56 41.8
2	8	. .	. .	. .	. .	28.0	. .	. .	4 9.09	11.90	2.74	V.	2	16.663	43 58.4	0.0	11.1	4 54.45	35 17 39.5
3	8	. .	. .	. .	. .	12.0	. .	. .	7 53.09	11.97	2.75	V.	2	14.553	46 10.8	0.0	11.6	7 38.37	19 52.4
4	8.9	. .	. .	. .	. .	18.5	. .	. .	10 59.69	12.03	2.40	V.	3	33.003	26 51.6	0.0	7.3	10 45.26	35 0 28.9
5	9	. .	. .	. .	. .	. .	. .	53.0	11 56.78	12.05	2.13	VII.	2	48.207	10 57.0	0.0	3.8	11 42.60	34 44 30.8
6	8	. .	. .	56.5	16.0	. .	. .	. .	14 5.98	12.09	2.36	IV.	3	33.423	26 25.4	0.0	7.2	13 51.53	35 0 2.6
7	8	9.0	27.0	46.0	4.0	. .	. .	. .	20 4.57	12.20	2.00	IV.	4	49.850	9 12.4	0.1	3.5	19 50.37	34 42 46.0
8	9	. .	. .	6.0	. .	. .	. .	21.5	21 25.00	12.23	2.08	III.	4	44.910	14 21.4	0.1	4.6	21 10.69	47 56.1
9	9	. .	5.0	. .	. .	. .	. .	. .	25 42.57	12.31	2.22	II.	3	33.470	26 21.7	0.2	7.2	25 28.04	59 59.1
10	9	. .	28.0	. .	. .	. .	. .	. .	29 5.56	12.37	1.91	II.	4	49.205	9 53.0	0.3	3.6	29 51.28	43 26.9
11	6	52.5	11.5	30.0	49.0	. .	. .	. .	32 48.87	12.44	1.92	IV.	4	45.960	13 16.6	0.4	4.5	32 34.51	46 51.5
12	8.9	. .	29.0	. .	6.0	. .	. .	. .	42 6.26	12.62	1.68	IV.	4	53.680	5 12.1	0.7	2.6	41 51.96	38 45.4
13	8	20.0	39.0	58.0	17.0	. .	. .	. .	44 16.65	12.66	1.91	IV.	4	39.030	20 31.8	0.8	6.0	44 2.08	54 8.6
14	8.9	46.0	5.0	. .	43.0	. .	. .	. .	47 42.57	12.73	1.72	IV.	4	46.500	12 42.9	1.0	4.2	47 28.12	46 18.1
15	8.9	. .	. .	. .	. .	. .	48.0	. .	50 10.60	12.78	1.62	VI.	4	51.630	7 20.2	1.1	3.1	49 56.20	34 40 54.4
16	7	. .	55.0	14.0	. .	. .	. .	. .	0 52 32.86	12.82	2.25	III.	1	7.830	53 8.4	1.3	13.2	0 52 17.79	35 26 52.9
17	8	27.5	46.5	5.0	. .	. .	. .	. .	1 9 23.88	13.13	1.63	III.	3	36.910	22 46.1	2.5	6.4	1 9 9.12	34 56 25.0
18	8	. .	. .	19.0	. .	. .	. .	. .	10 37.86	13.15	2.21	III.	1	7.535	53 27.1	2.5	13.3	10 22.50	35 27 12.9
19	7	. .	. .	. .	21.0	. .	. .	. .	11 21.05	13.17	1.59	IV.	3	37.635	22 0.9	2.6	6.3	11 6.29	34 55 39.8
20	8	. .	. .	19.0	38.0	. .	. .	. .	12 37.94	13.19	1.92	IV.	2	17.450	43 9.2	2.7	11.0	12 22.83	35 16 52.9
21	7	. .	12.0	31.0	. .	. .	. .	. .	15 49.83	13.25	2.06	III.	1	7.700	53 16.6	3.0	13.3	15 34.52	35 27 2.9
22	6.7	5.5	24.0	43.0	2.0	. .	. .	. .	18 1.80	13.29	1.50	IV.	3	37.810	21 49.8	3.2	6.2	17 47.01	34 55 29.2
23	8	52.0	. .	30.0	. .	. .	. .	. .	33 48.66	13.57	1.62	III.	2	19.920	40 34.0	4.9	10.4	33 33.47	35 14 19.3
24	7	. .	. .	52.5	11.0	. .	. .	. .	38 11.19	13.65	1.50	IV.	3	24.430	35 49.6	5.4	9.3	37 56.04	9 34.3
25	8	. .	35.0	. .	. .	. .	53.0	. .	43 14.01	13.73	1.48	VI.	2	21.810	38 35.5	6.0	9.9	42 58.80	35 12 21.4
26	7.8	17.0	35.5	54.0	. .	. .	. .	. .	46 13.05	13.78	1.16	III.	3	37.260	22 24.3	6.4	6.3	45 58.11	34 56 7.0
27	8	. .	6.0	25.0	44.0	. .	. .	. .	1 50 43.76	−13.86	−0.89	IV.	4	52.145	− 6 48.5	− 7.0	− 3.0	1 50 29.01	−34 40 28.5

ZONE 84. DECEMBER 4. C. $D_0 = -33° 18' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	29.5	48.0	7.1	25.6	44.1	. .	23 50 6.85	−13.42	−0.24	IV.	3	17.598	−42 57.9	− 0.1	− 9.0	23 49 53.19	−34 1 27.0
2	9	. .	. .	32.3	51.0	. .	26.0	. .	23 58 50.90	13.58	0.58	IV.	4	39.900	19 37.2	0.0	4.5	23 58 36.74	33 38 1.7
3	8	. .	. .	34.0	53.8	11.0	30.5	49.0	0 0 53.17	13.62	0.67	IV.	4	45.647	13 36.3	0.0	3.3	0 0 38.88	31 59.6
4	9	. .	19.5	. .	58.0	. .	. .	. .	3 57.26	13.68	0.58	IV.	4	39.838	19 41.0	0.0	4.5	3 43.00	33 38 5.5
5	9	. .	. .	. .	. .	42.0	1.8	21.7	4 24.66	13.69	0.20	V.	2	15.255	45 26.7	0.0	9.6	4 10.77	34 3 56.3
6	9	. .	. .	. .	. .	. .	55.0	13.7	5 17.87	13.70	0.15	VI.	2	12.012	48 49.5	0.0	10.3	5 4.02	34 7 19.8
7	9	. .	. .	. .	. .	. .	. .	52.0	5 56.22	13.71	0.30	VII.	3	21.061	39 20.5	0.0	8.3	5 42.21	33 57 48.8
8	8.9	. .	. .	. .	. .	48.1	57.1	. .	7 29.78	13.74	0.37	V.	3	25.891	34 17.8	0.0	7.3	7 15.67	52 45.1
9	8	. .	. .	. .	. .	31.5	41.0	. .	9 13.55	13.79	0.61	V.	4	42.191	17 13.2	0.0	4.0	8 59.15	35 37.2
10	7	. .	. .	. .	. .	41.5	59.1	. .	10 22.60	13.80	0.68	V.	4	46.369	12 50.9	0.0	3.2	9 8.12	33 31 14.1
11	9	. .	. .	. .	. .	53.1	. .	31.0	11 34.82	13.81	0.12	V.	2	9.922	51 0.5	0.0	10.7	11 20.89	34 9 31.2
12	8	. .	. .	. .	. .	. .	35.0	53.5	12 58.06	13.84	0.61	VI.	4	41.916	17 30.0	0.0	4.1	12 43.61	33 35 54.1
13	9	. .	. .	. .	. .	38.5	57.0	. .	14 19.93	13.87	0.33	V.	3	23.178	37 8.1	0.0	7.9	14 5.73	55 36.0
14	5	48.0	6.7	25.0	43.8	2.6	20.8	39.1	20 43.71	13.99	0.41	IV.	3	28.411	31 39.9	0.1	6.8	20 29.31	50 6.8
15	9	. .	. .	4.5	22.0	40.5	59.0	. .	0 22 22.29	−13.02	−0.79	IV.	4	52.952	− 5 57.7	− 0.1	− 1.9	0 22 8.48	−33 24 19.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Dec. 4,	0	− 22.074	− 0.024	− 0.425	+ 0.089	+ 0.192		

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1846.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 83	Dec. 3,	0 2	73 54 66.4	75.0	86.3	76.2	63.4	46.2	68.92	29.986	53.5	48.0	52.0		
		1 9	. .	. .	. .	. .	. .	. .	. .	29.986	53.0	46.2			
		1 50	. .	. .	. .	. .	. .	. .	. .	29.994	52.0	44.0			
Zone 84	Dec. 4,	23 45	72 39 62.9	74.0	83.3	73.1	60.8	43.9	66.33	30.308	47.5	38.8	48.0	47.5	50.1
		0 14	. .	. .	. .	. .	. .	. .	. .	30.322	46.5	37.4			
		0 22	. .	. .	. .	. .	. .	. .	. .	30.326	46.0	36.5			
		0 30	62.6	74.0	82.8	73.0	60.4	42.9	65.95	. .	. .	. .	42.8	44.2	

REMARKS.

Dec. 3. Readings at 1^h 0^m and 2^h 0^m.

Dec. 4. Readings of Barometer, &c., at 23^h 45^m; foggy about horizon; stars unsteady. 0^h 30^m, interrupted by fog. Readings of Barometer, &c., at 0^h 30^m.

(84) 2. Transit over T. III discordant and rejected; discordant 1^m in R. A. and 2′ in Declination from Transit, October 15th.

(84) 9. Minutes assumed as 9 instead of 10. See Zone 84.

(84) 10. Minutes assumed as 9 instead of 10. See Zone 84.

ZONE 85. DECEMBER 23. C. $D_0 = -33° 18' 20''$.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9.10	. .	. .	48.1	. .	. .	. .	58.5	0 4 4.81	−25.14	−0.56	VI.	3	39.981	−19 33.6	− 3.9	− 3.6	0 3 39.11	−33 38 1.2
2	9	36.3	54.3	12.8	. .	50.0	9.0	27.0	7 31.56	25.20	0.88	IV.	3	25.871	34 79.0	3.8	6.6	7 5.48	52 49.4
3	8	. .	. .	6.0	24.2	. .	1.2	20.0	9 24.58	25.24	0.52	IV.	4	42.236	17 10.7	3.8	3.1	8 58.82	35 37.6
4	7.8	. .	58.0	. .	34.3	53.2	. .	30.0	9 34.65	25.24	0.43	IV.	4	46.394	12 49.6	3.7	2.3	9 8.98	31 15.6
5	9	. .	. .	. .	11.5	28.5	47.0	5.4	13 10.39	25.31	0.53	IV.	4	41.906	17 31.2	3.7	3.2	12 44.55	33 35 58.1
6	9	. .	35.7	54.0	. .	32.0	50.5	9.0	16 13.10	25.37	1.06	IV.	2	18.787	41 45.2	3.7	8.1	15 46.67	34 0 17.0
7	6.7	. .	18.2	36.8	55.8	13.8	32.7	50.7	20 55.41	25.46	0.86	IV.	3	28.428	31 38.8	3.6	6.0	20 29.09	33 50 8.4
8	8.9	. .	. .	15.5	33.3	. .	10.7	29.3	22 33.75	25.48	0.30	IV.	4	52.941	5 58.4	3.7	0.9	22 7.97	24 23.0
9	9.10	. .	. .	4.8	. .	. .	. .	20.0	36 23.88	25.75	0.79	IV.	3	32.395	27 29.9	3.8	5.2	35 57.34	45 58.9
10	9.10	. .	. .	22.0	40.2	58.9	17.2	. .	39 40.30	25.81	1.06	IV.	3	21.018	39 23.4	3.9	7.6	39 13.43	57 54.9
11	9.10	. .	. .	. .	. .	. .	49.7	. .	48 12.85	25.97	0.38	VI.	4	52.188	6 45.3	4.2	1.1	47 46.50	33 25 10.6
12	8	. .	4.7	23.3	41.9	0.8	19.1	. .	54 41.96	26.09	1.35	IV.	2	9.377	51 35.0	4.4	10.1	54 14.52	34 10 9.5
13	9.10	. .	. .	12.8	. .	. .	8.0	. .	0 56 31.19	26.13	0.55	IV.	4	44.700	14 35.8	4.4	2.6	0 56 4.51	33 33 2.8
14	8	. .	25.3	44.3	2.7	. .	39.7	58.2	1 1 2.66	26.21	0.65	IV.	4	41.011	18 27.4	4.6	3.4	1 0 35.80	36 55.4
15	9.10	. .	. .	. .	. .	11.0	30.0	. .	6 53.78	26.32	0.66	V.	4	40.941	18 31.6	4.9	3.4	6 26.80	36 59.4
16	9	. .	. .	. .	47.3	. .	. .	42.0	9 46.93	26.37	0.54	IV.	4	47.096	12 5.4	5.1	2.1	9 20.02	30 32.6
17	8	. .	. .	25.2	43.3	3.1	21.6	. .	11 44.04	26.41	1.08	IV.	3	23.108	37 12.4	5.2	7.2	11 16.55	55 44.8
18	9	. .	. .	. .	. .	. .	. .	5?.	12 9.32	26.42	1.15	VII.	3	20.205	40 14.2	5.3	7.8	11 41.75	33 58 47.3
19	7.8	. .	32.5	51.3	9.8	28.0	47.0	. .	15 9.73	26.48	1.20	IV.	2	17.923	42 39.4	5.4	8.3	14 42.05	34 1 13.1
20	9.10	. .	. .	. .	. .	. .	39.2	. .	23 2.07	26.62	1.32	VI.	2	13.451	47 19.6	6.0	9.3	22 34.13	5 54.9
21	8.9	. .	. .	41.8	. .	. .	37.3	. .	30 0.24	26.74	1.40	IV.	2	10.475	50 26.2	6.6	9.9	28 32.10	9 2.7
22	8	58.0	16.8	36.0	54.5	13.2	31.3	50.2	34 54.31	26.84	1.44	IV.	2	9.075	51 53.7	7.1	10.2	34 26.03	34 10 31.0
23	8.9	. .	. .	19.3	. .	55.5	14.0	32.5	38 37.22	26.90	0.68	IV.	4	42.949	16 25.7	7.4	3.0	38 9.64	33 34 56.1
24	9	. .	. .	42.3	. .	. .	39.0	. .	41 1.95	26.95	0.51	IV.	4	50.806	8 12.4	7.6	1.4	40 34.49	26 41.4
25	9	. .	54.0	. .	31.5	. .	. .	. .	46 31.34	27.05	1.22	IV.	3	20.109	40 20.4	8.2	7.8	46 3.07	33 58 56.4
26	8	. .	. .	. .	. .	11.0	. .	48.3	46 52.47	27.06	1.30	V.	2	16.338	44 18.9	8.2	8.6	46 24.11	34 2 55.7
27	8.9	. .	51.0	9.3	. .	46.2	4.9	. .	50 27.81	27.11	0.86	IV.	3	36.021	23 42.2	8.6	4.4	49 59.84	33 42 15.2
28	7	. .	. .	59.1	17.5	36.0	54.3	13.2	52 17.51	27.15	0.99	IV.	3	30.668	29 18.1	8.8	5.5	51 49.37	47 52.4
29	9	. .	. .	. .	36.0	55.0	13.2	. .	1 58 36.26	27.26	1.02	IV.	3	30.293	29 41.8	9.5	5.6	1 58 7.98	33 48 16.9
30	7.8	. .	52.8	11.0	29.5	48.4	6.7	. .	2 7 29.68	−27.40	−1.33	IV.	2	16.898	−43 43.6	−10.4	− 8.5	2 7 0.95	−34 2 22.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1846.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

Dec. 23. Stars unsteady; at 2^h very much so. Readings of Barometer, &c., at $0^h\ 0^m$, $0^h\ 30^m$, $0^h\ 45^m$.

(85) 21. Differs 1^m in a from Transit Z., 1846, October 24th.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1846. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 85	Dec. 23, 0 0	72 39 59.7	72.0	62.2	68.4	62.1	63.2	64.60	30.526	38.3	30.1	32.4	35.9	40.0
	0 16	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.9			
	0 22	. .	. .	. .	. .	. .	. .	. .	30.520	37.2	29.5			
	0 48	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.0			
	1 1	59.5	72.1	63.9	67.5	63.8	61.4	64.70	30.520	36.0	28.7	37.7	33.5	
	1 15	. .	. .	. .	. .	. .	. .	. .	. .	. .	28.3			
	1 29	. .	. .	. .	. .	. .	. .	. .	30.525	35.0	27.8			
	1 46	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.1			
	2 0	58.0	72.3	63.2	67.6	63.4	61.2	64.28	. .	. .	. .	30.5	32.4	
	2 7	. .	. .	. .	. .	. .	. .	. .	30.528	33.2	26.9			

ZONE 86. JANUARY 6. C. $D_0 = -30° 10' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	52.	8.2	35.	52.9	2 3 0.18	−33.24	−0.75	IV.	3	28.149	−31 56.26	−19.01	−4.28	2 3 26.21	−30 42 19.55
2	9	. .	55.7	13.8	32.	49.	7.3	. .	12 31.58	33.38	0.65	IV.	4	47.660	11 29.69	20.16	1.37	11 57.55	21 51.22
3	9	. .	. .	10.3	. .	47.	. .	24.1	13 29.20	33.39	0.86	IV.	2	19.492	41 0.36	20.31	5.58	13 54.95	51 26.25
4	9	. .	25.	. .	0.2	. .	. .	. .	17 0.48	33.45	0.65	IV.	4	51.141	7 51.52	20.78	0.88	16 26.38	18 13.18
5	8	. .	. .	. .	15.7	33.9	51.7	9.3	17 15.80	33.45	0.83	IV.	3	27.092	33 2.52	20.82	4.45	16 41.52	43 27.79
6	9	. .	. .	. .	49.1	7.	24.7	. .	18 49.04	33.48	0.84	IV.	3	27.408	32 42.81	21.03	4.39	18 14.72	43 8.23
7	9	. .	. .	35.3	52.8	. .	28.8	. .	21 53.04	33.53	0.71	IV.	4	46.468	12 44.56	21.48	1.54	21 18.80	30 23 7.58
8	8.9	. .	49.8	8.	26.3	44.1	. .	. .	24 26.02	33.56	1.01	IV.	2	10.184	50 44.58	21.88	7.02	23 51.45	31 1 13.48
9	8	. .	17.8	35.7	53.	11.5	29.5	47.2	27 53.52	33.62	0.84	IV.	3	34.379	25 25.46	22.38	3.34	27 19.06	30 35 51.18
10	9	. .	. .	. .	37.	55.2	12.8	. .	28 37.12	33.63	0.84	IV.	3	33.701	26 7.81	22.49	3.45	28 2.65	36 33.75
11	6.7	. .	. .	57.8	15.7	33.8	51.9	9.6	30 15.86	33.66	0.89	IV.	3	28.479	31 35.61	22.74	4.23	29 41.31	42 2.58
12	6.7	. .	49.3	7.6	24.9	43.5	1.4	. .	32 25.35	33.69	0.97	IV.	3	20.388	40 3.32	23.09	5.45	31 50.68	50 31.86
13	9	. .	5.	23.	40.7	58.5	16.3	. .	34 40.71	33.72	0.95	IV.	3	23.669	36 37.30	23.44	4.96	34 6.04	47 5.70
14	7.8	. .	. .	. .	48.	6.	24.	. .	35 48.12	33.73	0.93	IV.	3	28.291	31 47.41	23.63	4.26	35 13.46	30 42 15.30
15	8	. .	59.8	17.7	35.2	53.8	11.5	. .	45 35.60	33.89	1.14	IV.	2	8.194	52 49.51	25.20	7.34	45 0.57	31 3 22.05
16	9	. .	50.3	. .	26.2	44.2	. .	. .	47 26.20	33.92	0.89	IV.	4	42.852	16 31.17	25.49	2.08	46 51.39	30 26 58.74
17	8.9	. .	. .	32.2	50.	8.	25.9	. .	48 50.11	33.94	0.89	IV.	4	42.553	16 50.11	25.71	2.12	48 15.28	27 17.94
18	7	. .	51.4	9.3	27.3	45.	3.5	. .	51 27.32	33.98	0.91	IV.	4	42.220	17 10.99	26.15	2.17	50 52.43	27 39.31
19	9	. .	28.	46.2	4.3	22.4	40.4	. .	54 4.27	34.02	1.06	IV.	3	24.582	35 40.01	26.57	4.81	53 29.19	46 11.39
20	8	. .	. .	. .	14.7	33.1	50.8	. .	2 55 14.91	34.03	1.15	IV.	2	13.954	46 47.74	26.78	6.47	2 54 39.73	57 20.99
21	8	. .	. .	40.3	57.3	15.8	34.	. .	3 0 57.93	34.10	1.00	IV.	3	36.151	23 34.25	27.74	3.08	3 0 22.83	34 5.07
22	8	. .	. .	. .	. .	34.3	52.7	. .	2 16.59	34.13	1.16	V.	2	17.681	42 53.84	27.97	5.88	1 41.30	53 27.69
23	9.10	. .	. .	54.2	. .	31.	. .	. .	6 12.58	34.19	1.16	IV.	2	20.384	40 4.45	28.68	5.45	5 37.23	51 38.58
24	8.9	. .	. .	. .	. .	15.	32.3	51.	6 56.95	34.20	1.10	V.	3	27.406	32 43.06	28.80	4.39	6 21.65	43 16.25
25	9.10	. .	. .	. .	. .	. .	36.3	. .	8 0.49	34.21	1.14	VI.	3	23.728	36 33.60	28.99	4.96	7 25.14	47 7.55
26	9	. .	. .	59.3	. .	35.5	53.	. .	14 17.32	34.30	1.17	IV.	3	24.479	35 46.54	30.16	4.84	13 41.85	46 21.54
27	9	. .	. .	25.	42.5	. .	18.	. .	15 42.57	34.32	1.07	IV.	4	38.521	21 3.00	30.43	2.72	15 7.18	31 36.15
28	8.9	. .	. .	17.6	. .	53.1	. .	. .	19 35.35	34.38	1.02	IV.	4	47. .	12 . .	. .	. .	18 59.95	22 . .
29	9	. .	27.	45.3	2.8	21.	38.9	. .	25 3.01	34.45	1.27	IV.	2	20.079	40 23.46	32.28	5.51	24 27.29	51 1.25
30	8.9	. .	. .	20.	37.	55.	12.6	. .	31 37.24	34.54	1.06	IV.	4	50.079	8 58.06	33.62	1.02	31 1.64	19 32.70
31	9	. .	. .	. .	. .	. .	. .	43.0	31 49.30	34.54	1.23	VII.	3	29.838	30 10.04	33.66	4.02	31 13.53	40 47.72
32	9	. .	2.	. .	37.3	. .	. .	. .	36 37.59	34.61	1.28	IV.	3	26.331	33 50.39	34.69	4.56	36 1.70	44 29.64
33	9	. .	38.7	56.	14.7	32.	50.	. .	40 14.29	34.65	1.23	IV.	3	36.841	22 50.77	35.46	2.97	39 38.41	33 29.20
34	8	. .	. .	14.7	32.7	. .	9.	26.5	41 32.88	34.66	1.20	IV.	3	39.992	19 33.18	35.76	2.51	40 57.02	30 11.45
35	7.8	. .	. .	. .	. .	7.	25.	. .	41 49.25	34.66	1.16	V.	4	47.848	11 17.59	35.81	1.34	41 13.43	21 54.74
36	7.8	. .	. .	. .	. .	. .	4.	22.	42 28.29	34.67	1.27	VI.	3	33.151	26 42.51	35.96	3.53	41 52.35	37 22.00
37	9	. .	. .	. .	. .	. .	4.	22.	42 28.33	34.67	1.24	VI.	3	36.619	23 4.95	35.96	3.01	41 52.42	33 43.92
38	9	. .	21.7	39.7	57.	15.7	. .	. .	45 57.47	34.72	1.24	IV.	3	38.451	21 10.02	36.73	2.73	45 21.51	31 49.48
39	9	. .	. .	48.2	. .	. .	42.1	. .	51 6.25	34.78	1.24	IV.	4	43.038	15 16.62	37.91	1.92	50 30.23	25 56.45
40	7	. .	. .	. .	17.3	. .	53.8	11.5	55 17.65	34.83	1.45	IV.	2	16.461	44 10.65	38.90	6.06	54 41.37	54 55.61
41	9	. .	55.	12.	30.	48.	6.	. .	59 30.21	34.88	1.37	IV.	3	32.559	27 19.57	39.88	3.62	58 53.96	38 3.07
42	9	. .	. .	19.2	. .	. .	13.2	. .	3 59 37.29	34.88	1.35	IV.	3	35.028	24 44.56	39.91	3.25	3 59 1.06	35 27.72
43	9	. .	. .	32.3	. .	. .	. .	44.2	4 6 50.32	34.96	1.49	IV.	2	21.679	38 42.99	41.60	5.26	4 6 13.87	49 29.85
44	9	. .	. .	12.5	30.7	48.5	6.	. .	7 30.49	34.97	1.43	IV.	3	28.787	31 16.04	41.76	4.19	6 54.09	42 1.99
45	8	. .	. .	. .	. .	0.4	18.2	. .	8 42.52	34.99	1.36	V.	4	40.510	18 57.99	42.04	2.43	8 6.17	29 42.47
46	8	. .	. .	. .	45.	3.	21.	. .	9 45.15	35.00	1.34	IV.	4	43.071	16 17.50	42.28	2.04	9 8.81	27 1.82
47	9	. .	19.2	36.5	54.6	12.8	. .	. .	20 54.73	35.12	1.51	IV.	3	30.351	29 38.17	44.93	3.95	20 18.10	40 27.05
48	9	. .	. .	. .	. .	6.	. .	. .	21 48.15	35.13	1.35	V.	4	49.401	9 40.44	45.15	1.12	21 11.67	20 26.71
49	9	. .	. .	. .	. .	43.	. .	. .	4 22 25.16	−35.13	−1.37	V.	4	51.791	− 7 10.33	−45.30	−0.77	4 21 48.66	−30 17 56.40

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 86	Jan. 6,	2	69 32 31.7	41.3	32.0	42.8	26.3	37.9	35.33	29.870	49.5	46.3	49.9	48.9	48.0
		2 30	. .	. .	. .	. .	. .	. .	. .	29.864	49.5	44.0			
		3 0	32.2	40.9	31.3	43.2	26.4	37.8	35.30	29.856	49.0	43.2	47.5	47.5	
		3 31	. .	. .	. .	. .	. .	. .	. .	29.852	48.5	42.7			
		3 59	. .	. .	. .	. .	. .	. .	. .	29.844	. .	41.5			
		4 0	31.8	41.4	31.6	43.2	26.5	37.6	35.35	. .	. .	. .	47.9	47.3	
		4 30	. .	. .	. .	. .	. .	. .	. .	29.838	48.0	41.2			
		5	31.4	41.5	31.8	42.6	26.7	37.1	35.17	. .	. .	. .	46.8	47.0	48.0
		5 6	. .	. .	. .	. .	. .	. .	. .	29.830	47.5	40.0			

REMARKS.

Jan. 6. Clear; stars tolerably steady.

(86) 1. Transits over T.'s IV and V assumed as 2^s and $18^s.2$ instead of 52^s and $8^s.2$; and minutes as 4, not 3.

(86) 3. Minutes assumed as 14 instead of 13.

(86) 39. Micrometer reading assumed as $44^r.038$ instead of $43^r.038$.

ZONE 86. JANUARY 6. C. $D_\circ = -30° 10' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	° ′ ″	h. m. s.
50	8	. .	30.7	48.7	6.3	24.7	42.2	. .	4 25 6.53	−35.16	−1.57	IV.	3	24.697	−35 32.73	−45.96	−4.79	4 24 29.80	−30 46 23.48
51	9	. .	26.5	. .	. .	19.2	. .	. .	27 1.80	35.18	1.42	IV.	4	44.356	14 57.09	46.44	1.86	26 25.20	25 45.39
52	9	. .	. .	35.	52.7	11.	28.5	. .	28 52.83	35.20	1.63	IV.	2	18.161	42 23.91	46.90	5.81	28 16.00	53 16.62
53	4	. .	. .	1.5	19.5	37.3	55.3	13.6	30 19.52	35.21	1.64	IV.	2	19.061	41 27.35	47.26	5.66	29 42.67	52 20.27
54	8	. .	. .	. .	. .	. .	27.	45.	31 51.25	35.23	1.59	VI.	3	26.857	33 17.27	47.64	4.47	31 14.43	44 9.38
55	9	. .	. .	51.	8.5	26.5	. .	. .	34 8.67	35.25	1.62	IV.	3	25.775	34 25.03	48.24	4.63	33 31.80	30 45 17.90
56	7	. .	22.5	40.	58.	. .	34.1	. .	58.15	35.30	1.74	IV.	2	9.049	51 55.76	48.40	7.21	37 21.11	31 2 51.37
57	7	. .	59.5	16.8	34.5	52.7	10.3	. .	42 34.79	35.33	1.45	IV.	4	52.211	6 44.42	50.42	0.70	41 58.01	30 17 35.54
58	9	. .	19.7	37.	55.3	13.3	31.	. .	44 55.28	35.35	1.56	IV.	3	39.204	20 22.73	51.04	2.63	44 18.37	31 16.40
59	9	. .	51.7	9.8	27.3	45.6	. .	. .	47 27.57	35.37	1.75	IV.	2	16.881	43 44.04	51.72	6.00	46 50.45	54 41.76
60	8.9	. .	. .	38.2	. .	14.2	32.1	. .	49 56.27	35.39	1.60	IV.	3	38.701	20 54.15	52.37	2.70	49 19.28	31 49.22
61	9	. .	41.	59.	16.7	34.4	52.	. .	4 56 16.64	35.44	1.61	IV.	4	42.988	16 22.70	54.11	2.06	4 55 39.59	27 18.87
62	8	. .	44.	2.	19.8	37.5	55.7	. .	5 6 19.82	−35.52	−1.64	IV.	4	45.540	−13 42.76	−56.94	−1.68	5 5 42.66	−30 24 41.38

ZONE 87. JANUARY 22. C. $D_\circ = -30° 48' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
1	5	. .	46.2	4.	22.	40.	58.3	16.7	3 55 22.24	−39.88	−0.65	IV.	4	52.369	− 6 34.58	−17.97	−1.06	3 54 41.71	−30 54 53.61
2	9	. .	. .	18.	36.	53.7	11.7	. .	57 35.80	39.90	0.64	IV.	2	9.736	51 12.57	18.43	8.19	56 55.26	31 39 39.19
3	9	. .	15.	. .	51.2	9.7	. .	. .	3 59 51.32	39.94	0.64	IV.	2	14.379	46 21.32	18.93	7.38	59 10.74	34 47.63
4	7.8	. .	. .	. .	21.7	39.3	58.3	. .	4 0 21.74	39.94	0.64	IV.	3	21.289	39 6.77	19.04	6.19	3 59 41.16	27 32.00
5	9	. .	. .	. .	. .	7.	24.7	. .	1 48.82	39.94	0.64	V.	3	28.053	32 2.34	19.37	5.04	4 1 8.24	20 26.75
6	8.9	. .	26.2	44.7	2.8	21.3	39.	. .	8 2.80	40.03	0.62	IV.	2	9.378	51 35.23	20.78	8.25	7 22.15	40 4.26
7	9.10	. .	57.5	16.2	. .	. .	. .	. .	13 33.92	40.10	0.61	III.	3	20.445	39 59.42	22.09	6.34	12 53.21	28 27.85
8	8	. .	. .	. .	. .	13.	31.1	. .	13 54.91	40.10	0.61	V.	2	7.813	53 13.16	22.17	8.55	13 14.20	41 43.88
9	9	. .	. .	41.	59.2	. .	. .	. .	15 59.14	40.13	0.60	IV.	3	15.109	45 34.51	22.67	7.25	15 18.41	34 4.43
10	9	. .	20.7	. .	56.7	15.	32.2	. .	18 56.66	40.17	0.59	IV.	3	36.327	23 23.26	23.38	3.67	18 15.90	11 50.31
11	9	. .	. .	. .	8.	25.9	44.3	. .	22 8.06	40.20	0.58	IV.	3	26.655	33 29.94	24.18	5.28	21 27.28	21 59.40
12	9	. .	. .	. .	56.	14.	31.7	. .	27 55.88	40.26	0.57	IV.	3	22.236	38 7.29	25.66	6.03	27 15.05	31 26 38.98
13	5	. .	47.3	6.	24.	42.	59.7	. .	30 23.83	40.29	0.56	IV.	4	54.952	3 52.37	26.30	0.61	29 42.98	30 52 19.28
14	7.8	. .	. .	24.	42.5	0.7	18.7	. .	4 31 42.51	−40.30	−0.56	IV.	4	46.311	−12 54.48	−26.65	−2.02	4 31 1.65	−31 1 23.15

ZONE 88. JANUARY 27. P. $D_\circ = -29° 33' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
1	7	. .	14.5	32.5	50.	. .	. .	. .	4 9 50.19	−39.62	−1.41	IV.	1	7.195	−53 51.02	− 8.34	−7.46	4 9 9.16	−30 27 6.82
2	8	46.	. .	21.	. .	56.	. .	. .	17 38.76	39.71	1.48	IV.	3	26.970	33 10.11	10.11	4.45	16 57.57	30 6 24.67
3	8	. .	. .	. .	5.	. .	. .	. .	20 5.00	39.74	1.55	IV.	4	46.480	12 43.81	10.68	1.58	19 23.71	29 45 56.07
4	7	. .	. .	. .	36.	. .	. .	. .	21 36.03	39.75	1.43	IV.	2	8.660	52 20.18	11.01	7.21	20 54.85	30 25 38.40
5	8	. .	. .	. .	. .	30.	. .	. .	22 12.09	39.75	1.44	V.	2	11.030	49 51.28	11.15	6.87	21 30.90	23 9.30
6	7	. .	. .	. .	20.5	38.5	57.	. .	23 20.90	39.77	1.50	IV.	3	27.863	32 14.01	11.43	4.32	22 39.63	5 29.76
7	7	. .	. .	. .	15.	33.	. .	. .	26 15.12	39.80	1.50	IV.	3	27.425	32 41.75	12.09	4.39	25 33.82	5 58.23
8	3	25.3	43.5	1.3	19.	37.	54.5	12.3	28 18.99	39.82	1.51	IV.	3	29.016	31 1.74	12.57	4.15	27 37.66	30 4 18.46
9	8	. .	. .	. .	. .	18.	. .	. .	30 0.27	39.84	1.58	V.	4	52.010	6 56.66	12.98	0.76	29 18.85	29 40 10.40
10	8	. .	25.	42.	1.	. .	. .	. .	32 0.49	39.86	1.48	IV.	2	18.595	41 56.60	13.46	5.71	31 19.15	30 15 15.77
11	7	. .	. .	. .	. .	45.	2.	. .	32 26.79	39.87	1.48	V.	2	21.550	38 51.15	13.56	5.27	31 45.44	30 12 9.98
12	8	. .	. .	34.	. .	10.	. .	. .	36 52.00	39.91	1.54	III.	3	37.620	22 1.78	14.63	2.87	36 10.55	29 55 19.28
13	7	58.	15.	33.	. .	. .	. .	. .	41 50.88	39.96	1.52	III.	3	30.220	29 46.07	15.84	3.97	41 9.40	30 3 5.88
14	6	. .	. .	. .	. .	4.5	. .	. .	4 41 46.77	−39.96	−1.58	V.	4	51.520	− 7 27.57	−15.82	−0.83	4 41 5.23	−29 40 44.22

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 87	Jan. 22,	3 50	70 9 52.3	73.5	63.6	63.0	63.7	56.8	62.15	30.218	26.0	21.5	26.8	26.9	30.7
		4 13	. .	. .	. .	. .	. .	. .	. .	. .	. .	21.2			
		4 30	. .	. .	. .	. .	. .	. .	. .	30.206	25.0	20.0			
Zone 88	Jan. 27,	4 0	68 54 53.0	71.3	62.7	61.0	63.7	56.0	61.28						
		4 9	. .	. .	. .	. .	. .	. .	. .	30.338	38.0	28.0			
		4 41	. .	. .	. .	. .	. .	. .	. .	30.352	36.2	27.8			
		5 22	. .	. .	. .	. .	. .	. .	. .	30.378	36.0	27.6			
		6 25	. .	. .	. .	. .	. .	. .	. .	30.412	35.0	26.8			
		8 0	. .	. .	. .	. .	. .	. .	. .	30.460	34.0	26.0			

REMARKS.

Jan. 22, $4^h 13^m$, clouds forming. Too cold for good transits.

Jan. 27. Moon very bright; magnitudes of the smaller stars doubtful.

(86) 56. Minute assumed as 37.

(88) 6. Transit over T. IV assumed as $20^s.5$, not $26^s.5$.

ZONE 88. JANUARY 27. P. $D_0 = -29° 33' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	5	. .	. .	. .	40.	58.	16.	. .	4 42 40.19	−39.97	−1.49	V.	1	16.466	−44 9.21	−16.03	−6.05	4 41 58.73	−30 17 31.29
16	8	39.	. .	15.	32.	. .	. .	. .	45 32.37	40.00	1.53	IV.	3	31.380	28 33.61	16.75	3.79	44 50.84	30 1 54.15
17	8	. .	. .	. .	8.	. .	. .	. .	47 7.99	40.02	1.60	IV.	4	51.160	7 50.27	17.14	0.87	46 26.37	29 41 8.28
18	8	46.	. .	22.	. .	. .	. .	. .	49 39.44	40.04	1.58	III.	4	44.400	14 54.39	17.77	1.86	48 57.82	48 14.02
19	8	. .	23.	. .	56.	. .	. .	. .	50 57.27	40.05	1.60	IV.	4	50.140	8 54.23	18.09	1.05	50 15.62	42 13.37
20	7	54.	. .	29.5	47.	5.	. .	. .	54 47.16	40.09	1.58	V.	4	44.460	14 50.32	19.07	1.86	54 5.49	29 48 11.25
21	7	. .	. .	5.	. .	40.	. .	. .	56 22.45	40.10	1.47	V.	1	7.240	53 48.32	19.46	7.46	55 40.88	30 27 15.24
22	8	. .	. .	. .	. .	4.	. .	. .	57 46.20	40.12	1.55	V.	3	32.265	27 38.14	19.82	3.66	57 4.53	1 1.62
23	8	. .	. .	. .	26.	. .	. .	. .	4 59 50.48	40.13	1.55	IV.	3	31.817	28 5.94	20.36	3.73	4 58 8.80	30 1 30.03
24	8	. .	. .	27.	. .	. .	. .	. .	5 5 44.78	40.19	1.58	III.	3	36.980	22 41.80	21.87	2.96	5 5 3.01	29 56 6.63
25	7	. .	. .	. .	. .	22.	40.	. .	6 4.41	40.19	1.61	V.	4	45.790	13 26.65	21.97	1.65	5 22.61	46 50.27
26	8	. .	. .	. .	. .	. .	. .	20.	6 26.78	40.20	1.61	VII.	4	47.780	11 20.97	22.07	1.35	5 44.97	44 44.39
27	8	. .	. .	. .	. .	. .	. .	45.	7 51.75	40.21	1.61	VII.	4	45.150	14 6.03	22.43	1.75	7 9.93	47 30.21
28	6	21.	39.	56.	. .	. .	. .	. .	10 14.18	40.23	1.59	III.	4	37.190	22 26.55	23.05	2.93	9 32.36	55 52.53
29	8	. .	. .	. .	. .	. .	59.	17.	10 23.71	40.23	1.63	VII.	4	51.330	7 38.60	23.10	0.83	9 41.85	29 41 2.53
30	7	. .	. .	. .	58.	. .	. .	. .	12 58.05	40.25	1.55	IV.	2	23.940	36 21.05	23.77	4.90	12 16.25	30 9 49.72
31	7	40.	. .	16.	. .	. .	. .	. .	15 33.55	40.27	1.57	III.	3	29.330	30 41.91	24.45	4.10	14 51.71	4 10.46
32	6	. .	. .	. .	6.	24.	42.	. .	16 6.20	40.28	1.54	VI.	2	20.580	39 51.77	24.60	5.43	15 24.38	30 13 21.80
33	7	52.	10.	28.	45.	. .	. .	. .	22 45.34	40.33	1.64	IV.	4	50.473	8 33.41	26.37	0.96	22 3.37	29 42 0.74
34	5	. .	. .	46.	. .	21.3	. .	. .	24 3.63	40.34	1.55	IV.	2	19.690	40 47.82	26.72	5.55	23 21.74	30 14 20.09
35	8	34.5	52.	10.	. .	. .	. .	. .	26 27.63	40.35	1.63	III.	4	46.540	12 40.11	27.38	1.53	25 45.65	29 46 9.02
36	8	52.	. .	28.5	. .	. .	. .	. .	28 45.79	40.37	1.59	III.	3	30.705	29 15.52	27.99	3.90	28 3.83	30 2 47.41
37	5.6	54.	12.	30.	. .	5.3	. .	. .	28 47.51	40.37	1.61	V.	3	36.007	23 43.28	28.00	3.10	28 5.53	29 57 14.38
38	8	16.5	34.5	52.	. .	. .	. .	. .	34 9.80	40.41	1.64	III.	4	44.955	14 19.33	29.48	1.77	33 27.75	47 50.58
39	6	. .	12.	30.	47.5	. .	. .	40.7	35 47.56	40.42	1.64	IV.	4	44.772	14 30.75	29.90	1.80	35 5.50	48 2.45
40	7	42.7	. .	18.	35.5	. .	. .	. .	39 35.75	40.45	1.62	IV.	3	34.874	24 54.16	30.98	3.27	38 53.68	58 28.41
41	8.9	. .	55.5	. .	. .	. .	. .	24.0	45 30.86	40.48	1.64	VII.	3	39.525	19 58.90	32.62	2.56	44 48.74	29 53 32.08
42	8	. .	20.	. .	56.	. .	. .	. .	48 55.8	40.51	1.63	IV.	3	32.017	27 53.45	33.58	3.70	48 13.6	30 1 30.73
43	8	59.	17.	. .	. .	. .	. .	. .	50 52.39	40.52	1.63	III.	3	33.850	25 58.15	34.13	3.42	50 10.24	29 59 35.70
44	6	58.	. .	. .	. .	51.	9.	. .	50 51.15	40.52	1.64	V.	3	36.595	23 6.45	34.12	3.01	50 8.99	29 56 43.58
45	8	. .	. .	. .	. .	. .	30.	. .	51 54.46	40.53	1.61	VI.	3	28.167	31 55.19	34.42	4.29	51 12.32	30 5 33.90
46	8	39.	. .	15.	. .	. .	. .	. .	55 32.79	40.54	1.61	III.	3	28.245	31 49.98	35.30	4.27	54 50.64	30 5 29.55
47	8	. .	. .	. .	38.	. .	. .	. .	56 38.02	40.55	1.65	IV.	4	40.340	19 8.98	35.76	2.44	55 55.82	29 52 47.18
48	8	. .	. .	. .	. .	. .	. .	37.	5 57 43.68	40.56	1.64	VII.	3	33.695	26 8.13	36.08	3.45	5 57 1.48	59 47.66
49	4.5	8.3	26.	43.5	1.	18.5	36.5	54.	6 1 1.16	40.58	1.68	IV.	4	48.135	10 59.96	37.00	1.28	6 0 18.90	44 38.24
50	7	10.5	46.	3.	21.	39.	. .	. .	5 3.44	40.60	1.68	IV.	4	45.435	13 49.35	38.15	1.69	4 21.16	29 47 29.19
51	7	. .	46.	4.	. .	. .	. .	. .	7 21.78	40.61	1.57	III.	1	7.910	53 5.69	38.81	7.39	6 39.60	30 26 51.89
52	7	. .	. .	53.5	11.	29.	. .	. .	8 11.18	40.61	1.64	IV.	3	30.780	29 11.00	39.05	3.88	7 28.93	30 2 53.93
53	7	0.	17.	35.	53.	. .	. .	. .	10 52.85	40.63	1.70	IV.	4	48.390	10 44.09	39.82	1.25	10 10.52	29 44 25.16
54	8.9	. .	. .	35.	. .	. .	. .	. .	11 52.75	40.63	1.69	III.	4	43.760	15 34.28	40.11	1.93	11 10.43	49 16.32
55	8	. .	. .	37.	53.	. .	. .	. .	12 53.88	40.64	1.69	IV.	4	45.295	13 58.20	40.41	1.71	12 11.55	47 40.32
56	8	17.	34.	52.	. .	. .	. .	. .	15 9.85	40.65	1.67	III.	3	36.195	23 31.23	41.06	3.07	14 27.53	57 15.36
57	2.3	22.5	40.	58.	. .	33.5	51.	9.	15 15.66	40.65	1.66	V.	3	33.620	26 13.08	41.08	3.46	14 33.35	59 57.62
58	8	. .	. .	57.	. .	. .	. .	. .	17 14.75	40.65	1.70	III.	4	45.690	13 33.29	41.66	1.65	16 32.40	47 16.60
59	8	32.	50.	. .	. .	. .	. .	. .	18 25.33	40.66	1.70	II.	4	45.890	13 20.62	42.00	1.62	17 42.97	47 4.24
60	8	. .	. .	. .	22.	. .	. .	. .	18 22.03	40.66	1.68	IV.	3	36.977	22 42.30	41.99	2.95	17 39.69	56 27.24
61	7	. .	0.	18.	. .	. .	. .	. .	20 35.63	40.67	1.73	III.	4	55.387	3 25.42	42.63	0.22	19 53.23	37 8.27
62	8	. .	14.	32.	. .	. .	. .	. .	22 49.66	40.68	1.67	III.	3	35.430	24 19.28	43.28	3.19	22 7.31	58 5.75
63	8	. .	. .	. .	. .	51.	. .	. .	6 25 33.22	−40.69	−1.69	V.	3	37.900	−21 44.47	−44.05	−2.81	6 24 50.84	−29 55 31.33

CORRECTIONS.

Date,		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(88) 23. Transit over T. VI assumed as recorded over T. IV; and minutes as 58, not 59.

(88) 44. T. II assumed to have been recorded as T. I. If T.'s IV and V were recorded as T.'s V and VI, T=33ˢ.43.

(88) 46. Transit over T. I rejected.

(88) 50. T.'s III–VI are assumed to have been recorded as T.'s II–V.

ZONE 88. JANUARY 27. P. $D_\circ = -29° 33' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
64	7	16.	33.	51.	. .	. .	. .	. .	6 28 8.77	−40.70	−1.74	III.	4	53.720	− 5 9.75	−44.81	−0.45	6 27 26.33	−29 38 55.01
65	8	. .	. .	43.	1.	. .	. .	. .	29 0.93	40.70	1.64	IV.	2	20.925	39 30.24	45.06	5.39	28 18.59	30 13 20.69
66	6	. .	. .	. .	33.	50.	8.5	. .	29 50.51	40.70	1.68	IV.	3	35.060	24 42.62	45.21	3.24	29 8.13	29 58 31.07
67	9	. .	. .	. .	25.	. .	. .	. .	32 25.03	40.71	1.70	IV.	3	38.090	21 32.55	46.05	2.78	31 42.62	29 55 21.38
68	5.6	47.	5.	23.	40.5	. .	. .	. .	6 34 40.59	40.72	1.65	IV.	2	19.925	45 46.63	46.70	6.24	6 33 58.22	30 19 39.57
69	8	. .	. .	. .	. .	36.	. .	. .	7 16 18.16	40.79	1.71	V.	3	21.987	38 22.91	58.75	5.23	7 15 35.66	12 26.89
70	7	39.	56.5	14.	32.	. .	. .	. .	18 32.07	40.79	1.72	IV.	3	24.625	35 37.32	59.39	4.83	17 49.56	30 9 41.54
71	6	. .	. .	. .	. .	. .	20.	. .	18 44.52	40.79	1.76	VI.	4	37.980	21 36.19	59.45	2.79	18 1.97	29 55 38.43
72	8	. .	. .	. .	. .	17.	. .	. .	20 59.21	40.79	1.75	V.	3	35.090	24 40.86	60.11	3.23	20 16.67	29 58 44.20
73	7	12.5	30.	48.	. .	. .	. .	. .	24 5.81	40.79	1.69	III.	2	14.650	46 4.07	61.00	6.35	23 23.33	30 20 11.42
74	8	55.	. .	. .	. .	. .	. .	. .	25 48.39	40.79	1.71	I.	2	20.985	39 25.85	61.49	5.38	25 5.89	13 32.72
75	8	. .	. .	. .	48.	. .	. .	. .	25 48.05	40.79	1.72	IV.	2	22.250	38 7.29	61.49	5.21	25 5.54	12 13.99
76	8	. .	. .	. .	. .	27.	. .	3.	26 9.42	40.79	1.74	V.	3	28.855	31 11.90	61.59	4.18	25 26.89	5 17.67
77	8	. .	59.5	17.	35.	. .	. .	. .	28 34.96	40.79	1.75	IV.	3	30.480	29 30.01	62.28	3.93	27 52.42	30 3 36.22
78	8	. .	. .	15.	32.	. .	. .	. .	30 32.36	40.79	1.81	IV.	4	49.460	9 36.93	62.84	1.06	29 49.76	29 43 40.83
79	7	. .	. .	52.	10.5	. .	. .	. .	32 10.17	40.79	1.68	IV.	1	7.765	53 15.04	63.31	7.44	31 27.70	30 27 25.79
70	8	. .	. .	19.	. .	. .	. .	. .	33 36.79	40.79	1.74	III.	3	26.920	33 12.93	63.72	4.48	32 54 26	30 7 21.13
81	7	. .	16.	. .	. .	. .	. .	. .	34 51.53	40.78	1.80	II.	4	43.920	15 24.18	64.06	1.89	34 8.95	29 49 30.13
82	7	. .	1.	55.	. .	. .	. .	. .	35 12.73	40.78	1.82	III.	4	49.110	9 58.89	64.28	1.11	34 30.13	44 4.28
83	9	. .	. .	. .	. .	33.	. .	. .	35 15.26	40.78	1.82	V.	4	50.905	8 5.88	64.18	0.84	34 32.66	42 10.90
84	9	. .	. .	. .	. .	. .	. .	31.	35 37.83	40.78	1.83	VII.	4	53.220	5 40.03	64.29	0.49	34 55.22	39 44.81
85	7	. .	. .	. .	. .	11.	. .	. .	36 53.23	40.78	1.80	V.	4	43.330	16 1.19	64.66	1.97	36 10.65	50 7.82
86	8	. .	. .	. .	. .	. .	. .	59.	36 5.75	40.78	1.80	VII.	4	45.165	14 5.15	64.43	1.70	35 23.17	48 11.28
87	8	. .	. .	50.	7.	. .	. .	1.	39 7.50	40.78	1.79	IV.	4	40.980	18 28.64	65.30	2.33	38 24.93	29 52 36.27
88	7	29.	47.	5.	. .	. .	. .	. .	42 22.59	40.77	1.74	III.	3	23.690	36 35.67	66.21	4.98	41 40.08	30 10 46.86
89	7	. .	48.5	6.	. .	. .	. .	. .	43 24.01	40.77	1.71	III.	2	12.000	48 50.39	66.51	6.79	42 41.52	23 3.69
90	7	. .	. .	52.5	10.	. .	. .	4.	44 10.31	40.77	1.75	IV.	3	23.490	35 48.60	66.72	5.02	43 27.79	30 11 0.34
91	7	. .	53.	10.5	28.5	. .	. .	. .	46 28.45	40.77	1.79	IV.	3	37.515	22 8.68	67.36	2.85	45 45.89	29 56 18.89
92	7	18.	36.	54.	12.	. .	. .	. .	50 11.64	40.76	1.80	IV.	3	36.480	23 13.60	68.42	3.02	49 29.08	57 25.04
93	6	. .	. .	48.5	6.	24.5	. .	. .	51 6.33	40.76	1.81	IV.	4	40.520	18 57.62	68.67	2.39	50 23.76	53 8.68
94	5.6	. .	. .	6.	24.	41.3	. .	. .	52 23.78	40.76	1.80	IV.	4	37.803	21 47.86	69.03	2.80	51 41.22	29 55 59.69
95	8	39.	57.	15.	. .	. .	. .	. .	54 32.51	40.75	1.79	IV.	3	33.765	26 3.73	69.63	3.44	53 49.97	30 0 16.80
96	8	. .	. .	23.	. .	. .	15.3	. .	54 40.30	40.75	1.80	VI.	3	35.910	23 49.30	69.67	3.10	53 57.75	29 58 2.07
97	8	. .	. .	. .	19.5	. .	. .	13.	54 19.57	40.75	1.76	IV.	2	22.235	38 8.23	69.57	5.21	53 37.06	30 12 23.01
98	8	. .	. .	. .	18.	. .	. .	12.	56 18.33	40.74	1.76	VII.	2	23.860	36 25.44	70.12	4.96	55 35.83	10 40.52
99	9	. .	. .	. .	8.5	. .	. .	. .	7 58 8.54	40.74	1.74	IV.	1	16.140	44 29.49	70.64	6.16	57 26.06	30 18 46.29
100	8	26.	44.	1.5	. .	. .	. .	. .	8 0 19.33	−40.74	−1.81	III.	3	37.903	−21 43.90	−71.25	−2.79	7 59 36.78	−29 55 57.94

ZONE 89. FEBRUARY 1. C. $D_\circ = -30° 48' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	46.5	4.6	22.	. .	58.6	. .	3 30 22.45	−40.08	−0.62	IV.	3	33.591	−26 14.77	− 4.79	−3.92	3 29 41.75	−31 14 23.48
2	7.8	. .	13.3	31.9	49.4	8.1	25.8	. .	37 49.71	40.18	0.74	IV.	2	18.882	41 38.46	6.27	6.32	37 8.79	29 51.05
3	9.10	. .	43.2	6.	. .	. .	. .	. .	40 24.14	40.22	0.68	III.	3	25.560	34 38.40	6.79	5.23	39 43.24	22 50.42
4	9	. .	. .	. .	. .	40.7	59.	. .	40 22.81	40.22	0.69	V.	3	24.243	36 1.46	6.78	5.46	39 41.90	24 13.70
5	9	. .	. .	. .	. .	44.	1.8	19.8	41 25.84	40.23	0.65	V.	3	28.957	31 5.56	7.01	4.68	40 44.96	19 17.25
6	8	. .	39.5	. .	15.7	33.8	51.4	. .	45 15.62	40.28	0.59	IV.	3	39.048	20 32.39	7.81	3.06	44 34.75	8 43.26
7	9	. .	. .	. .	. .	20.5	. .	56.2	46 2.31	40.29	0.66	V.	3	28.671	31 23.51	7.98	4.73	45 21.36	31 19 36.22
8	7.8	. .	. .	4.7	22.	40.9	. .	. .	3 55 22.52	−40.41	−0.48	IV.	4	52.208	− 6 44.62	− 8.99	−0.96	3 54 41.63	−30 54 54.57

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 89	Feb. 1,	3 30	70 9 52.9	70.1	61.2	58.9	62.9	56.5	60.42	30.036	43.5	37.9	43.5	46.9	41.7
		3 55	. .	. .	. .	. .	. .	. .	. .	. .	. .	36.9			
		4 10	. .	. .	. .	. .	. .	. .	. .	30.040	42.8	35.8			
		4 30	52.4	70.7	61.3	58.9	63.2	55.9	60.40	. .	. .	34.6	43.7	39.7	
		4 49	. .	. .	. .	. .	. .	. .	. .	. .	. .	34.1			
		5 11	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.9			
		5 30	51.1	70.8	60.6	58.9	63.4	54.9	59.95	30.060	41.0	32.8	39.7	38.0	41.7

REMARKS.

(88) 66. Transits over T.'s III, IV, and V assumed as recorded over T.'s IV, V, and VI.
(88) 68. Micrometer reading assumed as $14^r.925$, not $19^r.925$.
(88) 82. Transit over T. II rejected.

Feb. 1. Moon up at $4^h 20^m$.
(89) 3. Transit over T. II assumed to have been at $48^s.2$.

ZONE 89. FEBRUARY 1. C. $D_\circ = -30^\circ\ 48'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	9.10	. .	. .	26.3	44.	. .	20.	. .	3 56 44.12	−40.43	−0.47	IV.	4	53.620	− 5 16.02	−10.27	−0.73	3 56 3.22	−30 53 27.02
10	9	. .	. .	. .	. .	. .	. .	30.7	3 57 36.47	40.43	0.84	VII.	2	9.568	51 22.55	10.47	7.86	56 55.20	31 39 40.88
11	7.8	. .	46.7	4.5	22.8	40.8	58.8	. .	4 0 22.73	40.47	0.74	IV.	3	21.136	39 16.25	11.08	5.95	3 59 41.52	27 33.28
12	9	. .	. .	. .	. .	49.	7.2	. .	1 31.08	40.49	0.68	V.	3	28.842	31 12.72	11.34	4.69	4 0 49.91	19 28.75
13	9.10	. .	27.	45.5	3.5	. .	39.8	. .	8 3.49	40.57	0.86	IV.	2	9.252	51 43.08	12.83	7.93	7 22.06	31 40 3.84
14	9	. .	. .	. .	27.	. .	3.	. .	10 27.05	40.60	0.50	IV.	4	51.248	7 44.80	13.39	1.12	9 45.95	30 55 59.31
15	9.10	. .	21.	39.	. .	15.	. .	. .	17 57.00	40.69	0.63	IV.	3	36.201	23 31.11	15.16	3.51	17 15.68	31 11 49.78
16	9	. .	. .	. .	26.2	. .	. .	. .	21 26.24	40.72	0.66	IV.	3	34.167	25 38.70	15.94	3.84	20 44.86	13 58.48
17	9	. .	. .	. .	. .	25.	40.3	. .	22 5.62	40.73	0.71	V.	3	27.519	32 35.91	16.04	4.91	21 24.18	20 56.86
18	9	. .	. .	. .	. .	. .	. .	3.2	22 9.13	40.73	0.72	VII.	3	26.582	33 34.46	16.06	5.05	21 27.68	31 21 55.57
19	8	. .	22.4	39.2	. .	16.2	34.	. .	28 57.99	40.82	0.49	IV.	4	53.926	4 56.70	17.81	0.68	28 16.68	30 53 15.19
20	4	. .	. .	6.7	24.5	42.4	0.7	. .	30 24.61	40.83	0.49	IV.	4	54.784	4 2.91	18.16	0.55	29 43.29	30 52 21.62
21	7.8	. .	. .	25.8	43.2	1.	18.8	. .	31 43.33	40.84	0.57	IV.	4	46.171	13 3.12	18.48	1.91	31 1.90	31 1 23.51
22	9.10	. .	44.	. .	. .	. .	. .	. .	35 20.19	40.88	0.86	II.	2	11.192	49 41.01	19.37	7.60	34 38.45	38 7.98
23	7	. .	27.	45.	3.2	21.	39.5	. .	38 3.16	40.91	0.58	IV.	4	44.834	14 26.85	20.04	2.12	37 21.67	2 49.01
24	9	. .	33.5	51.7	9.7	27.7	46.	. .	44 9.72	40.97	0.90	IV.	2	8.100	52 55.34	21.57	8.12	43 27.85	41 25.03
25	8	. .	. .	. .	. .	. .	28.	46.5	44 52.27	40.98	0.68	VI.	4	34.261	25 29.66	21.75	3.81	44 10.61	31 13 55.22
26	8	. .	57.	. .	32.8	. .	8.2	. .	47 32.71	41.01	0.52	IV.	4	52.591	6 20.55	22.41	0.88	46 51.18	30 54 43.84
27	8.9	. .	5.5	23.	41.1	59.7	17.8	. .	49 41.40	41.03	0.88	IV.	2	9.422	51 32.46	22.96	7.90	48 59.49	31 40 3.32
28	9	. .	35.	53.2	. .	29.7	47.	. .	53 11.24	41.07	0.66	IV.	3	36.592	23 6.51	23.86	3.44	52 29.51	11 33.81
29	8	. .	44.5	2.	20.3	. .	. .	. .	56 20.35	41.09	0.87	IV.	2	12.406	48 25.17	24.66	7.40	55 38.39	36 57.23
30	7.8	. .	. .	48.7	7.	25.1	43.	. .	4 57 6.92	41.10	0.84	IV.	2	15.266	45 25.65	24.86	6.94	4 56 24.98	33 57.45
31	9.10	. .	. .	. .	17.	. .	. .	. .	5 2 17.05	41.15	0.82	IV.	2	18.489	42 3.31	26.19	6.38	5 1 35.08	30 35.88
32	8.9	. .	33.7	51.3	. .	27.8	46.	. .	5 9.70	41.18	0.83	IV.	2	16.849	43 46.05	26.93	6.67	4 27.69	32 19.65
33	9.10	. .	4.5	. .	. .	. .	. .	34.5	6 40.49	41.20	0.81	IV.	2	19.786	40 41.72	27.32	6.17	5 58.48	28 15.21
34	9	. .	37.4	. .	13.2	31.3	. .	. .	11 13.31	41.24	0.66	IV.	4	40.853	18 36.55	28.49	2.75	10 31.41	7 7.79
35	8	. .	. .	. .	. .	20.	. .	55.	12 1.41	41.24	0.79	V.	3	21.992	38 22.59	28.70	5.82	11 19.38	26 57.11
36	9.10	. .	. .	10.	. .	46.3	. .	22.2	17 28.08	41.29	0.87	IV.	2	13.467	47 18.49	30.12	7.23	16 45.92	35 55.84
37	9	. .	. .	. .	7.	. .	43.6	. .	20 7.26	41.31	0.89	IV.	2	12.154	48 40.86	30.80	7.46	19 25.06	37 19.12
38	8	. .	. .	53.	11.	29.	47.2	. .	22 11.00	41.33	0.93	IV.	2	7.811	53 13.34	31.33	8.19	21 28.74	41 52.86
39	8.9	. .	49.	6.8	25.	43.	1.4	. .	24 25.06	41.35	0.63	IV.	4	43.268	16 5.27	31.90	2.36	23 43.08	31 4 39.53
40	9	. .	0.8	. .	35.7	54.	. .	. .	26 36.18	41.36	0.59	IV.	4	48.329	10 47.93	32.46	1.55	25 54.23	30 59 21.94
41	9	. .	. .	5.2	22.7	42.	. .	. .	28 23.28	41.40	0.53	IV.	4	54.941	3 53.06	32.91	0.50	27 41.35	30 52 26.47
42	8	. .	56.2	14.7	32.7	50.7	8.6	. .	32 32.60	41.41	0.68	IV.	3	38.978	20 36.78	33.97	3.04	31 50.51	31 9 13.79
43	8.9	. .	. .	51.1	9.	27.1	45.	. .	35 9.06	41.43	0.76	IV.	3	28.972	31 4.49	34.64	4.66	34 26.87	19 43.79
44	9	. .	20.	. .	. .	13.	32.	. .	5 35 55.66	−41.44	−0.80	IV.	3	23.981	−36 17.66	−34.84	−5.48	5 35 13.42	−31 24 57.98

ZONE 90. FEBRUARY 5. P. $D_\circ = -28^\circ\ 56'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	14.	32.	49.5	. .	. .	7 29 31.82	−41.03	−0.82	IV.	4	50.570	− 8 27.27	− 0.12	−1.10	7 28 49.97	−29 4 58.49
2	9	. .	10.	. .	46.	. .	. .	. .	33 45.76	41.03	0.98	IV.	1	9.650	51 16.84	1.31	6.93	33 3.75	47 55.08
3	8	. .	. .	. .	51.	. .	. .	. .	34 51.03	41.03	0.99	IV.	1	8.110	52 53.52	1.61	7.16	34 9.01	49 32.29
4	7	. .	. .	. .	. .	30.	. .	. .	35 12.22	41.03	0.97	V.	2	13.230	47 33.31	1.71	6.42	34 30.22	44 11.44
5	9	. .	. .	. .	. .	. .	. .	30.5	35 37.37	41.03	0.95	VII.	2	17.320	43 16.05	1.83	5.83	34 55.39	39 53.71
6	7	. .	. .	. .	. .	. .	28.	46.	36 52.68	41.03	0.99	VI.	1	7.476	53 33.43	2.19	7.26	36 10.66	50 12.88
7	9	. .	. .	. .	. .	. .	. .	46.	37 53.07	41.03	0.85	VII.	4	43.265	16 4.33	2.47	2.13	37 11.19	12 38.93
8	8	. .	59.	. .	34.	. .	. .	. .	41 34.22	41.03	0.93	IV.	3	21.985	38 22.91	3.45	5.14	40 52.26	35 1.50
9	8	. .	. .	. .	. .	. .	. .	4.	7 42 11.03	−41.03	−0.87	VII.	3	36.790	−22 53.91	− 3.66	−3.04	7 41 29.13	−29 19 30.61

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 90	Feb. 5, 7 30	68 17 29.0	48.0	38.7	41.0	35.4	31.7	[a]37.30	29.880	34.0	27.0	36.0	35.0	41.0
	8 0	. .	. .	. .	. .	. .	. .	. .	29.888	33.3	26.7			
	8 14	. .	. .	. .	. .	. .	. .	. .	29.888	33.0	26.8			
	9 1	. .	. .	. .	. .	. .	. .	. .	29.878	33.0	26.0			
	9 44	. .	. .	. .	. .	. .	. .	. .	29.878	32.0	25.5			
	10 46	27.4	48.7	39.7	39.7	36.6	30.5	[b]37.10	29.884	32.0	26.0	33.3		
	11 42	. .	. .	. .	. .	. .	. .	. .	29.884	31.8	25.0			

REMARKS.

([a]) Corr. for runs, 0″.48.

([b]) Corr. for runs, 0″.48.

ZONE 90. FEBRUARY 5. P. $D_\circ = -28° 56' 30''.00$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
10	8	33.	8.	26.	. .	. .	. .	. .	7 46 25.85	−41.02	−0.86	III.	4	39.187	−20 21.28	− 4.91	−2.70	7 45 43.97	−29 16 58.89
11	8	17.	35.	52.5	. .	. .	. .	. .	48 10.16	41.02	0.90	III.	3	30.470	29 30.38	5.33	3.93	47 28.24	26 9.64
12	7.8	53.	. .	28.	43.5	. .	. .	. .	54 44.98	41.02	0.83	IV.	4	49.383	9 41.82	7.10	1.26	54 3.13	6 20.18
13	8	. .	. .	. .	51.	. .	. .	. .	55 50.99	41.02	0.84	IV.	4	46.983	12 12.14	7.42	1.60	55 9.13	29 8 51.16
14	8	. .	45.	1.	. .	. .	. .	. .	58 19.48	41.01	0.81	III.	4	55.530	3 16.38	8.10	0.39	57 37.66	28 59 54.87
15	7	. .	. .	1.	18.	. .	. .	. .	59 18.36	41.01	0.93	IV.	3	24.340	35 55.32	8.36	4.80	58 36.42	29 32 38.48
16	8	. .	. .	. .	. .	58.	. .	. .	7 59 40.27	41.01	0.93	V.	3	25.567	34 38.39	8.46	4.64	58 58.33	31 21.49
17	8	. .	. .	. .	. .	37.	. .	. .	8 0 19.26	41.01	0.94	V.	3	23.050	37 16.27	8.64	5.00	7 59 37.31	33 59.91
18	7	52.	. .	27.5	45.	. .	. .	. .	3 45.06	41.01	0.91	IV.	3	30.595	29 22.73	9.56	3.92	8 3 3.14	26 6.21
19	8	. .	. .	43.	. .	. .	. .	. .	5 0.69	41.00	0.95	III.	2	21.310	39 6.21	9.90	5.26	4 18.74	35 51.37
20	8	. .	. .	. .	23.	. .	. .	. .	5 23.04	41.00	0.97	IV.	2	15.055	45 38.71	10.00	6.17	4 41.07	42 24.88
21	8	. .	. .	16.	. .	. .	. .	. .	6 33.70	41.00	0.98	III.	1	11.625	49 12.62	10.32	6.66	5 51.72	45 59.60
22	6	. .	. .	6.	24.	[4]	. .	. .	7 23.87	41.00	0.91	IV.	3	28.970	31 4.62	10.55	4.13	6 41.96	27 49.30
23	8	. .	40.5	. .	15.	. .	. .	. .	12 15.41	40.99	0.87	IV.	4	42.340	17 3.54	11.85	2.24	11 33.55	13 47.63
24	6.7	. .	. .	. .	. .	52.	9.5	. .	13 34.21	40.98	0.94	V.	3	24.643	35 36.32	12.20	4.75	11 52.29	32 23.27
25	7	. .	17.	35.	52.	. .	. .	. .	14 52.31	40.98	0.83	IV.	4	51.484	7 30.02	12.54	0.96	14 10.50	4 13.52
26	7	. .	31.5	48.5	7.	. .	. .	. .	17 6.65	40.98	0.87	IV.	4	43.250	16 6.39	13.13	2.11	16 24.80	12 51.63
27	7.8	. .	. .	18.	36.	. .	. .	. .	18 35.86	40.97	0.91	IV.	3	33.970	25 50.93	13.53	3.44	17 53.98	22 37.90
28	8.9	. .	. .	. .	. .	. .	. .	37.	18 44.01	40.97	0.91	VII.	3	34.418	25 22.95	13.57	3.39	18 2.13	22 9.91
29	8	. .	. .	. .	21.	39.	. .	. .	20 21.17	40.97	0.92	IV.	3	30.900	29 3.47	13.99	3.87	19 39.28	25 51.33
30	7.8	. .	50.	7.5	25.	. .	. .	. .	23 25.19	40.96	0.92	IV.	3	29.543	30 28.80	14.79	4.05	22 43.31	27 17.64
31	8.9	. .	. .	. .	32.	. .	. .	. .	25 32.04	40.95	0.94	IV.	3	24.987	35 14.53	15.34	4.73	24 50.15	32 4.60
32	9	. .	. .	. .	31.	. .	. .	. .	27 36.05	40.95	0.92	IV.	3	28.970	31 4.62	15.85	4.15	26 54.18	27 54.62
33	8	. .	. .	. .	. .	. .	23.	. .	27 47.68	40.95	0.92	VI.	3	29.960	30 2.57	15.93	4.01	27 5.81	26 52.51
34	7	. .	24.	41.	59.	. .	. .	. .	29 58.96	40.94	0.82	IV.	4	55.117	3 42.15	16.49	0.44	29 17.20	0 29.08
35	8	. .	. .	. .	. .	14.	. .	. .	30 56.27	40.94	0.95	V.	3	25.737	34 27.59	16.74	4.63	30 14.38	31 18.96
36	8	. .	17.	35.	. .	. .	. .	. .	32 52.51	40.92	0.93	III.	3	29.225	30 48.50	17.22	4.10	32 10.66	27 39.82
37	3.4	. .	35.5	53.	11.	28.5	. .	. .	34 10.82	40.92	0.83	IV.	4	53.920	4 57.08	17.56	0.59	33 29.07	29 1 45.23
38	7.8	. .	. .	. .	31.	. .	. .	. .	37 30.94	40.91	0.83	IV.	4	56.325	2 26.55	18.42	0.27	36 49.20	28 59 15.24
39	8	. .	. .	. .	. .	49.	. .	. .	38 31.23	40.91	0.99	V.	2	15.575	45 6.07	18.68	6.10	37 49.33	29 42 0.85
40	7.8	8.	26.	44.	. .	. .	. .	. .	41 1.26	40.90	0.88	III.	4	43.470	15 52.72	19.31	2.08	40 19.48	12 44.11
41	7	10.	28.	46.	. .	20.	. .	. .	41 3.03	40.90	0.87	V.	4	45.240	14 1.32	19.32	1.82	40 21.26	10 52.46
42	9	. .	56.	. .	. .	. .	. .	. .	43 31.44	40.89	0.98	II.	2	17.655	42 55.29	19.94	5.78	42 49.57	39 51.01
43	8	. .	24.	42.	. .	. .	. .	. .	46 59.49	40.87	0.90	III.	3	37.630	22 1.16	20.81	2.92	46 17.72	18 54.89
44	9	. .	52.	. .	. .	. .	. .	. .	8 51 27.31	40.85	0.90	II.	4	40.220	19 16.43	21.92	2.54	8 50 45.56	16 10.89
45	7	55.5	13.5	32.	49.5	. .	. .	. .	9 1 49.14	40.80	0.95	IV.	3	28.090	31 59.90	24.45	4.27	9 1 7.39	28 58.62
46	6.7	0.5	17.7	35.5	53.3	. .	. .	. .	3 53.20	40.79	0.89	IV.	4	43.635	15 42.18	24.94	2.04	3 11.52	12 39.16
47	3.4	. .	. .	. .	. .	. .	52.3	10.	4 16.85	40.79	1.01	VI.	2	12.	48	25.03	6.63	3 35.05	45
48	7.8	10.	. .	45.5	. .	. .	. .	. .	9 3.10	40.76	0.96	III.	3	25.060	35 9.70	26.17	4.73	8 21.38	32 10.60
49	9.8	. .	. .	. .	22.	. .	. .	. .	9 22.04	40.76	1.01	IV.	2	13.020	47 46.43	26.25	6.49	8 40.27	44 49.17
50	9	56.	. .	32.	. .	. .	. .	. .	13 49.23	40.73	0.89	III.	4	44.907	14 22.34	27.29	1.85	13 7.61	11 21.48
51	9	31.	48.7	6.3	24.	41.3	. .	. .	20 23.91	40.69	0.94	IV.	3	33.615	26 13.27	28.82	3.50	19 42.28	23 15.59
52	8	29.	46.5	4.	. .	. .	. .	. .	24 21.83	40.66	0.96	III.	3	27.835	32 15.52	29.71	4.31	23 40.21	29 19.54
53	7.8	30.	48.	5.5	. .	. .	. .	. .	31 23.19	40.61	0.98	III.	3	25.010	35 12.84	31.29	4.73	30 41.60	32 18.86
54	7.8	. .	. .	. .	. .	. .	12.	. .	31 36.81	40.61	0.89	VII.	4	48.390	10 42.96	31.34	1.36	30 55.31	7 45.66
55	8	. .	. .	. .	. .	2.	. .	. .	33 44.35	40.59	0.90	V.	4	44.660	14 37.64	31.80	1.89	33 2.86	11 41.33
56	7	7.	25.	42.	0.3	. .	. .	. .	36 0.13	40.58	1.00	IV.	2	20.287	40 10.53	32.29	5.43	35 18.55	37 18.25
57	7	34.5	52.5	10.	28.	. .	. .	. .	39 27.77	40.55	0.97	IV.	3	26.460	33 42.29	33.05	4.52	38 46.25	30 49.86
58	7.8	44.5	2.5	20.5	. .	. .	. .	. .	9 42 37.89	−40.53	−1.00	III.	2	19.993	−40 28.73	−33.70	−5.47	9 41 56.36	−29 37 37.90

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(90) 10. Transits over T.'s III and IV assumed as recorded over T.'s II and III.

(90) 24. Minutes assumed as 12 instead of 13.

(90) 32. Time of transit assumed as 36^s instead of 31^s, to agree with Mer. Circle, 1847, March 18, and Arg. Z., 275, 44.

ZONE 90. FEBRUARY 5. P. $D_0 = -28° 56' 30'$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
59	8	. .	32.	. .	7.	. .	. .	. .	9 44 7.16	−40.52	−0.90	IV.	4	44.175	−15 8.31	−34.00	−1.95	9 43 25.74	−29 12 14.26
60	8.9	. .	. .	. .	. .	8.	. .	. .	10 46 50.35	39.92	0.93	V.	4	43.940	20 36.21	45.00	2.64	10 46 9.50	17 43.85
61	8.9	45.	. .	20.	. .	. .	. .	. .	56 37.79	39.82	0.97	III.	3	34.695	25 5.20	46.42	3.33	55 57.00	22 24.95
62	8.7	48.	6.	24.	. .	. .	. .	. .	10 58 41.56	39.79	1.04	III.	2	20.190	40 16.44	46.71	5.46	58 0.73	37 38.61
63	7	28.	45.5	3.	21.	. .	. .	. .	11 0 20.96	39.77	1.07	IV.	2	13.620	47 8.84	46.94	6.44	10 59 40.12	44 32.22
64	7	. .	. .	10.	27.5	. .	. .	. .	1 27.61	39.76	0.98	IV.	3	35.600	24 8.74	47.09	3.19	11 0 46.87	21 29.02
65	7	. .	. .	. .	. .	59.5	17.	. .	1 41.83	39.76	0.93	V.	4	46.865	12 19.23	47.12	1.54	1 1.14	9 37.89
66	8	. .	. .	. .	. .	. .	. .	54.	2 1.04	39.75	0.97	VII.	3	38.060	21 34.37	47.17	2.82	1 20.32	18 54.36
67	9.8	. .	. .	30.	. .	. .	. .	. .	12 47.68	39.63	1.02	III.	3	27.370	32 44.88	48.57	4.38	12 7.03	30 7.83
68	8	. .	. .	. .	. .	36.	. .	. .	13 18.25	39.62	1.05	V.	2	20.260	40 12.11	48.64	5.45	12 37.58	37 36.20
69	9	. .	. .	50.	. .	. .	. .	. .	21 7.69	39.53	1.06	III.	2	17.435	43 9.40	49.57	5.87	20 27.10	40 34.84
70	7	. .	. .	. .	. .	. .	57.5	. .	28 22.28	39.44	0.95	VI.	4	44.510	14 46.80	50.39	1.87	27 41.89	12 9.06
71	7.8	. .	. .	56.	13.	. .	. .	. .	33 13.37	39.37	1.06	IV.	2	19.035	41 28.92	50.90	5.64	32 32.94	38 55.46
72	7	. .	. .	. .	49.	. .	. .	. .	37 48.96	39.31	0.93	IV.	4	52.870	6 2.92	51.37	0.66	37 8.72	3 24.95
73	8.9	16.5	34.5	52.	. .	. .	. .	. .	40 9.74	39.28	1.07	III.	2	17.963	42 36.07	51.61	5.79	39 29.39	40 3.47
74	6	. .	. .	. .	26.	44.	. .	. .	40 26.17	39.28	1.02	IV.	3	30.785	29 10.68	51.64	3.89	39 45.47	26 36.21
75	8	. .	. .	4.	. .	. .	. .	. .	11 42 21.70	−39.28	−1.11	III.	1	8.430	−52 33.29	−51.83	−7.24	11 41 41.31	−29 50 2.36

ZONE 91. FEBRUARY 6. C. $D_0 = -28° 55' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	23.3	40.7	. .	16.2	. .	4 1 40.88	−39.49	−1.07	IV.	4	42.003	−17 24.48	− 0.45	−2.17	4 1 0.32	−29 12 57.10
2	9	. .	59.2	17.2	35.	52.7	. .	. .	3 34.86	39.50	1.07	IV.	3	36.892	22 47.58	0.92	2.85	2 54.29	18 21.35
3	9	. .	. .	. .	. .	12.	29.3	47.2	3 54.22	39.51	1.07	V.	4	43.758	15 34.14	1.00	1.93	3 13.64	11 7.07
4	9	. .	33.7	. .	9.	. .	. .	2.	7 9.02	39.55	1.06	IV.	3	26.495	33 40.04	1.79	4.28	6 28.41	29 16.11
5	9	. .	17.1	34.7	52.	10.2	27.3	. .	9 52.27	39.58	1.06	IV.	3	37.337	22 19.91	2.45	2.79	9 11.63	17 55.15
6	9	. .	. .	17.7	35.5	53.	11.	. .	11 35.49	39.60	1.06	IV.	3	39.230	20 21.09	2.86	2.55	10 54.83	15 56.50
7	9	. .	. .	55.7	12.	30.	. .	6.	14 12.70	39.64	1.05	IV.	4	45.681	13 33.79	3.50	1.68	13 32.01	9 8.97
8	9.10	. .	. .	. .	. .	. .	47.	. .	16 11.74	39.66	1.05	VI.	3	38.586	21 1.56	3.98	2.62	15 31.03	16 38.16
9	9	. .	38.5	. .	13.7	. .	49.1	. .	19 13.79	39.69	1.05	IV.	3	22.266	38 5.47	4.71	4.85	18 33.05	33 45.03
10	9	. .	44.3	2.7	. .	37.5	55.1	. .	21 19.91	39.71	1.05	IV.	4	37.831	21 46.10	5.22	2.71	20 39.15	17 24.03
11	8.9	. .	. .	. .	. .	27.	44.7	2.	22 9.17	39.72	1.05	IV.	3	23.613	36 40.82	5.43	4.69	21 28.40	32 20.94
12	8.9	. .	51.	9.	26.2	. .	. .	19.7	24 26.48	39.75	1.04	IV.	3	33.958	25 51.62	5.96	3.25	23 45.69	21 30.83
13	8.9	. .	. .	. .	. .	. .	15.	. .	24 39.76	39.75	1.04	VI.	4	42.441	16 56.57	6.02	2.09	23 58.97	12 34.68
14	8.9	. .	. .	. .	. .	20.	. .	55.7	26 2.56	39.77	1.04	V.	4	42.629	16 45.03	6.36	2.06	25 21.75	12 23.45
15	8.9	. .	. .	. .	. .	. .	22.5	40.7	26 47.55	39.78	1.04	VI.	4	47.367	11 47.62	6.54	1.45	26 6.73	7 25.61
16	9.10	. .	. .	. .	. .	3.5	. .	39.	31 45.97	39.84	1.03	V.	4	44.708	14 34.56	7.73	1.79	31 5.10	10 14.08
17	9.10	. .	9.2	. .	43.7	. .	19.7	47.	35 44.14	39.88	1.03	IV.	2	15.824	44 50.38	8.68	5.77	35 3.23	40 34.83
18	9	. .	. .	31.7	50.7	. .	25.5	. .	40 50.11	39.93	1.02	IV.	3	35.151	24 36.98	9.88	3.10	40 9.10	20 19.96
19	7.8	. .	. .	. .	. .	4.7	22.	40.	41 46.79	39.94	1.02	V.	2	15.650	45 1.37	10.11	5.78	41 5.83	40 47.26
20	9	. .	. .	50.	. .	25.6	. .	1.2	47 7.86	39.99	1.02	IV.	2	15.384	45 18.18	11.33	5.82	46 26.85	41 5.33
21	8.9	. .	. .	9.	. .	. .	. .	. .	50 26.64	40.03	1.01	III.	4	47.212	11 57.96	12.11	1.45	48 45.60	7 41.52
22	9	. .	. .	. .	32.	49.3	. .	. .	50 31.83	40.03	1.01	VII.	3	39.320	20 15.46	12.13	2.53	48 50.79	16 0.12
23	8.9	. .	45.	. .	20.	. .	55.3	. .	53 20.13	40.05	1.01	IV.	4	47.754	11 23.73	12.79	1.38	52 39.07	7 7.90
24	8.9	. .	. .	29.2	46.8	4.7	22.5	. .	54 46.92	40.07	1.01	IV.	2	8.616	52 22.94	13.11	6.77	54 5.84	48 12.82
25	9.10	. .	. .	20.	38.5	. .	. .	. .	4 58 20.62	40.10	1.00	IV.	4	47.509	11 39.28	14.01	1.41	4 57 39.52	7 24.70
26	9	. .	. .	8.7	27.	44.7	2.	. .	5 2 26.79	40.14	1.00	IV.	4	44.532	14 45.99	14.95	1.80	5 1 45.65	10 32.74
27	9.10	. .	. .	. .	24.	. .	. .	. .	4 24.05	40.16	1.00	IV.	3	31.074	28 52.68	15.46	3.65	3 42.89	24 41.79
28	9	. .	. .	8.7	. .	44.1	. .	. .	5 6 26.36	−40.18	−0.99	IV.	2	11.939	−48 54.22	−15.98	−6.32	5 5 45.19	−29 44 46.42

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 91	Feb. 6,	4 0	68 17 25.7	44.8	34.2	35.7	33.0	30.4	33.97	29.972	39.8	36.0	39.0	38.9	39.5
		4 31	. .	. .	. .	. .	. .	. .	. .	. .	. .	33.2			
		4 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.6			
		5 2	. .	. .	. .	. .	. .	. .	. .	29.968	38.5	32.8			
		5 15	25.5	44.9	34.5	35.7	33.5	29.5	33.93	. .	. .	. .	36.8	36.2	
		5 62	. .	. .	. .	. .	. .	. .	. .	29.956	37.5	31.1			
		6 20	24.8	45.1	34.0	36.0	33.3	29.2	33.73	29.946	35.8	29.6	33.8	34.0	39.8
		6 41	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.4			
		7 0	. .	. .	. .	. .	. .	. .	. .	29.946	34.6	29.2			

REMARKS.

(90) 60. Micrometer reading assumed as 38r.940, not 43r.940.

Feb. 6. Night fine; stars steady.
(91) 17. Transit over T. VII assumed as 37s instead of 47s.
(91) 21. Minutes assumed as 49, not 50.
(91) 22. Minutes assumed as 49, not 50.
(91) 25. Transits discordant; observations over T.'s IV and V assumed as recorded over T.'s III and IV.

ZONE 91. FEBRUARY 6. C. $D_0 = -28° 55' 30.''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
29	8.9	. .	. .	. .	. .	. .	. .	. .	5 6	−40.18	−0.99	VII.	2	9.892	−51 2.09	−15.87	−6.60	5	−29 46 54.56
30	9	. .	48.2	6.	. .	41.7	. .	. .	10 23.76	40.22	0.99	IV.	2	15.475	45 12.47	17.01	5.83	9 42.55	41 5.31
31	9	. .	. .	. .	. .	. .	44.5	2.7	11 9.36	40.23	0.99	VI.	2	20.220	40 14.43	17.21	5.16	10 28.14	36 6.80
32	9	. .	59.7	. .	35.	52.7	. .	. .	13 35.02	40.25	0.99	IV.	4	52.830	6 5.42	17.87	0.71	12 53.78	1 54.00
33	8	. .	59.8	18.	35.7	53.	10.7	. .	15 35.45	40.26	0.98	IV.	3	34.119	25 41.65	18.40	3.25	14 54.21	21 33.30
34	9	. .	9.6	27.	44.7	3.2	. .	. .	22 44.98	40.33	0.98	IV.	2	14.582	46 8.46	20.32	5.95	22 3.67	42 4.73
35	9	. .	. .	. .	. .	41.?	. .	16.2	23 23.22	40.33	0.97	V.	3	27.467	32 39.23	20.50	4.16	23 41.92	28 33.89
36	9	. .	52.1	9.5	27.2	45.	2.8	. .	26 27.32	40.35	0.97	IV.	2	10.639	50 15.95	21.33	6.53	25 46.00	46 13.81
37	9.10	. .	42.7	. .	18.1	. .	. .	. .	28 18.16	40.37	0.97	IV.	2	11.802	49 2.83	21.83	6.36	27 36.82	45 1.02
38	8	48.2	6.	23.5	41.3	59.	16.8	. .	5 32 41.28	40.41	0.96	IV.	3	53.106	5 50.82	23.01	0.66	5 31 59.91	1 44.49
39	8	. .	13.2	30.7	48.3	6.	23.4	41.	6 26 48.29	40.74	0.90	IV.	4	43.388	15 57.80	37.79	1.95	6 26 6.65	12 7.54
40	9	. .	. .	. .	20.	36.8	. .	12.8	28 19.68	40.75	0.90	IV.	4	49.336	9 44.78	38.22	1.12	27 38.03	5 54.12
41	9	. .	. .	. .	. .	. .	8.7	. .	28 33.49	40.75	0.90	VI.	4	45.782	13 26.84	38.28	1.62	27 51.84	9 36.74
42	9	. .	. .	. .	57.5	15.	33.	. .	33 57.56	40.78	0.89	IV.	4	53.394	5 30.31	39.80	0.58	33 15.89	1 40.69
43	8	. .	21.9	39.	57.	14.7	. .	. .	37 56.97	40.79	0.89	IV.	4	49.788	9 16.19	40.90	1.07	37 15.29	5 28.16
44	8.9	. .	. .	. .	. .	41.	58.7	. .	38 23.32	40.79	0.89	V.	3	27.126	33 0.52	41.03	4.35	37 41.64	29 15.90
45	8	. .	33.2	50.7	8.7	26.2	. .	. .	41 8.54	40.80	0.88	IV.	3	31.962	27 56.90	41.80	3.53	40 26.86	24 12.23
46	9	. .	. .	30.	47.	5.	. .	. .	41 47.34	40.81	0.88	IV.	3	29.380	30 39.09	41.98	3.88	41 5.65	26 54.95
47	8	. .	8.	25.5	43.	1.3	18.7	. .	43 43.30	40.82	0.88	IV.	3	22.027	38 20.28	42.52	4.93	43 1.60	34 37.73
48	9	. .	1.5	19.	36.5	. .	. .	. .	45 36.67	40.82	0.88	IV.	4	39.371	20 9.74	43.05	2.48	44 54.97	16 25.27
49	9	. .	. .	. .	23.5	41.5	. .	. .	46 23.68	40.82	0.88	IV.	4	43.640	15 41.87	43.28	1.90	45 41.98	11 57.05
50	9	. .	. .	. .	. .	. .	33.5	. .	46 58.32	40.82	0.88	IV.	4	50.232	8 48 53	43.43	1.03	46 16.62	5 2.99
51	9	. .	32.5	50.5	8.	25.5	. .	. .	51 7.96	40.84	0.87	VI.	3	33.150	26 42.57	44.60	3.36	50 26.25	23 0.53
52	9.10	. .	. .	. .	. .	49.7	7.7	. .	51 32.16	40.84	0.87	V.	3	24.060	36 12.89	44.72	4.64	50 50.45	32 32.25
53	9.10	. .	. .	. .	. .	. .	. .	57.	52 4.04	40.84	0.87	VII.	4	38.060	21 30.73	44.87	2.67	51 22.33	17 48.27
54	9	. .	59.	17.	. .	52.4	10.	. .	54 34.59	40.85	0.87	IV.	3	26.651	33 30.19	45.57	4.28	53 52.87	29 50.04
55	9	. .	38.7	. .	14.	31.7	. .	. .	6 56 14.03	40.86	0.87	IV.	3	25.527	34 40.78	46.05	4.44	55 32.30	30 1.27
56	9.10	. .	59.	17.	34.7	52.	. .	. .	7 0 34.53	40.87	0.86	IV.	2	15.268	45 25.47	47.26	5.90	6 59 52.80	41 48.63
57	9	. .	23.5	. .	59.	. .	. .	. .	1 58.95	40.87	0.86	IV.	3	27.498	32 37.10	47.65	4.16	7 1 17.22	28 58.91
58	9	. .	. .	. .	40.	57.5	15.	. .	2 39.88	40.87	0.86	IV.	3	43.802	15 34.16	47.84	1.89	1 58.15	11 53.89
59	9.10	. .	. .	26.2	. .	. .	. .	. .	4 43.89	40.88	0.85	III.	2	19.111	41 24.15	48.42	5.35	4 2.16	37 47.92
60	8	. .	. .	. .	. .	33.5	51.2	9.	5 15.75	40.88	0.85	V.	2	8.602	52 23.75	48.58	6.87	4 34.02	48 49.20
61	8.9	. .	. .	. .	. .	49.5	7.	. .	6 31.70	40.88	0.85	V.	3	23.035	37 17.15	48.91	4.79	5 49.37	33 40.85
62	9	. .	. .	. .	. .	58.7	. .	. .	7 40.94	40.88	0.85	V.	3	17.438	43 8.59	49.24	5.59	6 59.21	39 33.42
63	9	. .	. .	. .	58.	16.	. .	. .	8 58.14	40.88	0.85	IV.	3	16.650	43 57.79	49.61	5.70	8 16.41	40 23.10
64	9	. .	. .	31.	48.	. .	. .	. .	10 48.34	40.89	0.85	IV.	4	41.940	17 28.37	50.11	2.12	10 6.60	13 50.60
65	8	. .	. .	. .	47.5	. .	23.7	. .	11 47.96	40.89	0.85	IV.	3	28.638	31 25.52	50.39	4.00	11 6.22	27 49.91
66	9	. .	. .	. .	. .	49.3	. .	. .	12 31.58	40.89	0.85	V.	3	26.591	33 34.08	50.59	4.29	11 49.84	29 58.96
67	8	. .	. .	. .	. .	. .	41.3	59.4	13 6.11	40.89	0.85	VI.	3	19.998	40 27.73	50.75	5.22	12 24.37	36 53.70
68	8.9	. .	3.5	21.3	39.	56.7	. .	. .	15 38.97	40.90	0.84	IV:	3	21.758	38 37.15	51.46	4.97	14 57.23	35 3.58
69	9.10	. .	. .	. .	23.	41.	. .	. .	16 23.11	40.90	0.84	IV.	2	8.087	52 56.15	51.67	6.95	15 41.37	49 24.77
70	9.10	. .	. .	. .	34.	42.5?	. .	. .	16 24.37	40.90	0.84	VII.	3	11.7	49 8.	51.67	6.42	15 42.63	45 36.
71	5	. .	. .	51.3	. .	26.	44.4	. .	20 8.85	40.90	0.04	IV.	4	54.437	4 24.85	52.71	0.41	19 27.11	0 47.97
72	9.10	. .	. .	8.	. .	. .	. .	. .	22 25.65	40.90	0.84	III.	3	42.259	17 10.87	53.36	2.09	21 43.91	13 36.32
73	9.10	. .	. .	. .	55.7	. .	. .	48.5	22 55.64	40.91	0.83	IV.	3	36.893	22 47.51	53.50	2.83	22 13.90	19 13.84
74	9	. .	. .	. .	. .	. .	. .	26.5	23 33.58	40.91	0.83	III.	3	43.617	15 45.64	53.68	1.91	22 51.84	12 11.23
75	9.10	. .	3.5	. .	38.	. .	. .	. .	26 38.40	40.91	0.83	IV.	4	46.800	12 23.56	54.57	1.44	25 56.66	8 49.57
76	9	. .	. .	. .	. .	11.5	29.	46.7	26 53.76	40.91	0.83	V.	3	37.049	22 37.91	54.65	2.72	26 12.02	19 5.28
77	9	. .	56.9	14.2	32.	. .	. .	. .	7 29 32.01	−40.91	−0.83	IV.	4	50.482	− 8 32.85	−55.31	−0.94	7 28 50.27	−29 4 59.10

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 91	Feb. 6,	7 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.2			
		7 40	68 17 24.5	45.9	34.6	36.1	33.1	28.5	33.78d	29.946	33.5	28.3	32.6	33.0	38.8

REMARKS.

(91) 70. Transit over middle thread assumed to have been at 24^s instead of 34^s.

(91) 71. Transit of Arg. Z. 282, 60, suspected to have been recorded with declination of η Canis Majoris.

ZONE 91. FEBRUARY 6. C. $D_{\circ}=-28°\ 55'\ 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
78	9	. .	46.	2.5	21.	. .	. .	14.	7 30 20.88	−40.91	−0.82	IV.	2	16.864	−43 45.11	−55.64	−5.69	7 29 39.15	−29 40 16.44
79	9	. .	. .	. .	32.	49.2	. .	25.2	30 31.83	40.91	0.82	IV.	2	13.520	47 15.18	55.69	6.17	29 50.10	43 47.04
80	9.10	. .	. .	. .	. .	. .	. .	17.5	31 24.48	40.91	0.82	VII.	3	29.512	30 30.68	55.95	3.92	30 42.75	27 0.55
81	9.10	. .	19.5	37.	. .	. .	. .	. .	33 54.73	40.91	0.82	III.	4	47.580	11 34.90	56.68	1.34	33 13.00	8 2.92
82	8.9	. .	15.7	33.	. .	. .	. .	. .	34 50.96	40.91	0.82	III.	2	8.038	52 59.10	56.95	6.95	34 9.23	49 33.00
83	8.9	. .	. .	. .	12.5	30.5	. .	5.	35 12.36	40.91	0.82	IV.	2	13.186	47 36.15	57.06	6.21	34 30.63	44 9.42
84	9	. .	. .	. .	. .	33.	. .	7.6	36 14.84	40.91	0.82	VI.	2	15.010	45 41.28	57.37	5.95	35 33.11	42 14.60
85	8	. .	. .	. .	. .	11.	28.2	46.	36 52.91	40.91	0.82	V.	2	7.432	53 37.26	57.56	7.05	36 11.18	50 11.87
86	9.10	. .	. .	. .	. .	. .	29.	46.	37 53.43	40.91	0.82	VI.	4	43.691	15 38.04	57.85	1.87	37 11.70	12 7.76
87	9.10	. .	. .	. .	2.5	. .	. .	. .	40 2.54	40.91	0.81	IV.	3	25.350	34 51.95	58.48	4.50	39 20.82	31 24.93
88	9.10	. .	. .	. .	. .	48.5	7.3	. .	40 31.34	40.92	0.81	V.	3	21.695	38 41.24	58.62	4.99	39 49.61	35 14.85
89	9	. .	. .	. .	. .	52.	. .	27.5	41 34.34	40.92	0.81	V.	3	22.021	38 20.78	58.94	4.95	40 52.61	34 54.67
90	9	. .	. .	. .	. .	. .	. .	26.	7 41 32.94	−40.92	−0.81	VII.	3	25.021	−35 12.34	−58.93	−4.55	7 40 51.21	−29 31 45.82

ZONE 92. FEBRUARY 12. C. $D_{\circ}=-29°\ 33'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	33.2	50.7	8.7	26.	. .	6 22 50.78	−43.10	−0.75	IV.	3	35.342	−24 25.05	− 1.67	−3.21	6 22 6.93	−29 58 9.93
2	9	. .	59.6	17.6	34.3	53.	. .	. .	25 35.01	43.11	0.93	IV.	3	37.844	21 47.86	2.39	2.84	24 50.97	29 55 33.09
3	9	. .	6.2	25.	38.	. .	. .	. .	27 42.35	43.13	1.10	IV.	2	12.025	48 48.89	2.95	6.69	26 58.12	30 22 38.53
4	8.9	. .	27.	45.1	3.	. .	. .	. .	29 2.86	43.13	1.04	IV.	3	20.847	39 34.26	3.31	5.35	28 18.69	30 13 22.92
5	8	. .	. .	35.	52.	10.	28.	. .	29 52.38	43.13	0.93	IV.	4	34.974	24 45.32	3.53	3.26	29 8.32	29 58 32.11
6	9.10	. .	59.	. .	34.7	52.2	. .	. .	33 34.57	43.15	1.14	IV.	2	12.572	48 14.68	4.51	6.61	31 50.28	30 22 5.80
7	9	. .	11.7	29.2	. .	. .	. .	. .	34 47.10	43.16	0.95	IV.	4	38.972	20 34.52	4.83	2.69	34 2.99	29 54 22.04
8	6	. .	. .	. .	. .	. .	18.	35.7	34 42.30	43.16	0.15	VI.	2	14.854	45 51.19	4.81	6.26	33 57.99	30 19 42.26
9	9	. .	44.2	. .	. .	38.	55.7	. .	39 20.04	43.18	1.07	IV.	3	32.533	27 21.21	6.04	3.62	38 35.79	1 10.87
10	7	. .	. .	. .	. .	20.7	38.	56.3	40 2.63	43.18	1.27	V.	2	8.856	52 7.81	6.23	7.17	39 18.18	26 1.21
11	9	. .	23.7	41.8	. .	18.	. .	. .	6 42 59.70	−43.19	−1.34	IV.	2	18.168	−42 23.47	− 7.02	−5.74	6 42 15.17	−30 16 16.23

ZONE 93. FEBRUARY 12. C. $D_{\circ}=-29°\ 33'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	16.7	34.2	52.1	. .	. .	8 38 34.33	−43.25	−1.03	IV.	4	51.266	− 7 43.69	−33.63	−0.85	8 37 50.05	−29 41 58.17
2	9	. .	. .	. .	36.	53.8	10.3	. .	39 35.63	43.25	1.14	IV.	3	39.716	19 50.49	33.91	2.55	38 51.24	54 6.95
3	9	. .	. .	. .	44.7	2.	. .	. .	41 44.48	43.24	1.16	IV.	3	38.348	21 16.49	34.49	2.74	41 0.08	55 33.72
4	9	. .	58.2	. .	. .	51.3	. .	. .	43 33.66	43.23	1.01	IV.	4	53.319	5 35.01	34.98	0.56	42 49.42	29 39 50.55
5	8.9	. .	. .	. .	. .	18.7	36.6	. .	44 0.89	43.23	1.41	V.	2	12.529	48 17.45	35.11	6.66	43 16.25	30 22 39.22
6	8.9	. .	. .	. .	. .	. .	20.7	38.6	44 45.29	43.23	1.12	VI.	4	42.124	17 16.58	35.31	2.18	44 0.94	29 51 34.07
7	9	. .	17.	34.8	52.2	. .	. .	. .	49 52.52	43.21	1.46	IV.	2	8.415	52 35.69	36.71	7.30	49 7.85	30 26 59.70
8	9	. .	. .	. .	. .	24.5	41.3	. .	50 6.27	43.21	1.17	V.	4	36.859	22 46.94	36.77	2.96	49 21.89	29 57 6.67
9	9	. .	. .	. .	17.8	36.2	53.5	. .	51 18.06	43.21	1.27	IV.	3	26.682	33 28.19	37.09	4.50	50 33.58	30 7 49.78
10	9	. .	. .	. .	43.3	1.4	18.8	. .	52 43.33	43.20	1.42	IV.	2	11.809	49 2.39	37.46	6.78	51 58.71	23 26.63
11	9	. .	. .	15.7	33.	51.	. .	. .	54 33.24	43.19	1.27	IV.	3	27.012	33 7.48	37.94	4.45	53 48.78	7 29.87
12	8.9	. .	. .	34.1	52.	9.7	27.3	. .	55 51.89	43.19	1.27	IV.	3	27.299	32 49.66	38.30	4.41	55 7.43	7 12.37
13	8.9	. .	. .	46.?	2.8	20.7	. .	. .	8 57 3.14	43.18	1.44	IV.	2	9.695	51 15.15	38.61	7.09	56 18.52	25 40.85
14	9.10	. .	. .	. .	29.2	. .	. .	. .	9 0 29.25	43.16	1.36	IV.	3	18.281	42 15.55	39.53	5.78	59 44.73	16 40.86
15	9.10	. .	. .	. .	36.2?	. .	15.2	. .	0 38.	43.17	1.42	IV.	2	12.231	48 36.08	39.53	6.72	8 59 53.	30 23 2.33
16	9	. .	. .	. .	0.7	18.7	. .	. .	3 0.83	43.16	1.16	IV.	3	37.607	22 2.85	40.18	2.84	9 2 16.51	29 56 25.87
17	5	. .	44.	1.3	19.3	37.	55.	. .	9 4 19.34	−43.15	−1.06	IV.	4	48.188	−10 56.64	−40.53	−1.28	9 3 35.13	−29 45 18.45

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(92) 3. Transit over T. IV rejected.
(92) 6. Minutes assumed as 32, not 33, and 18ˢ discordant from Mural Z., 1849, January 23.
(93) 15. Transits discordant.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 92	Feb. 12,	6 20	68 54 54.6	75.0	65.0	64.4	66.5	57.9	63.90	30.128	34.8	29.5	33.0	33.8	39.5
		6 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.9			
		8 40	51.1	70.1	61.7	60.4	61.8	53.8	59.82	30.102	35.5	30.0	37.0	36.9	39.0
		9 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	28.5			
		9 24	. .	. .	. .	. .	. .	. .	. .	30.112	35.0	27.0			
		9 40	51.0	70.1	62.0	60.0	62.6	53.5	59.87	30.106	34.8	27.0	35.5	34.8	

ZONE 93. FEBRUARY 12. C. $D_0 = -29° 33' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	7	. .	45.3	3.	20.7	. .	56.2	. .	9 7 20.78	−43.14	−1.46	IV.	2	8.430	−52 34.73	−41.30	−7.30	9 6 36.18	−30 27 3.33
19	9	. .	. .	8.2	25.7	. .	1.6	. .	7 25.92	43.14	1.36	VI.	2	17.913	42 39.21	41.33	5.83	6 41.42	30 17 6.37
20	8	. .	. .	7.2	24.7	42.6	. .	. .	9 24.83	43.13	1.05	IV.	4	48.704	10 24.22	41.84	1.21	8 40.65	29 44 47.27
21	9.10	. .	28.2	47.3	. .	. .	41.2	. .	15 5.38	43.09	1.24	IV.	3	29.521	30 30.18	43.29	4.08	14 21.05	30 4 57.55
22	8	. .	10.7	28.2	46.2	. .	21.3	39.3	15 46.04	43.09	1.30	IV.	3	24.	36	43.46	4.91	15 1.65	30 10
23	8.9	. .	. .	. .	. .	. .	. .	59.	17 5.71	43.08	1.13	VII.	4	40.772	18 40.88	43.78	2.38	16 21.50	29 53 7.04
24	8.9	. .	. .	. .	. .	. .	. .	25.	17 31.73	43.08	1.11	VII.	4	42.922	16 26.02	43.90	2.05	16 47.54	50 51.97
25	9	. .	15.8	. .	. .	9.	. .	. .	24 51.30	43.04	1.04	IV.	4	49.982	9 4.08	45.63	1.00	24 7.22	43 30.71
26	9.10	. .	. .	6.	23.5	44.8	59.2	. .	26 23.67	43.03	1.17	IV.	3	37.458	22 12.31	45.98	2.87	25 39.47	29 56 41.16
27	9	. .	. .	6.	23.8	44.5	. .	. .	28 23.82	43.02	1.30	IV.	2	23.870	36 25.44	46.44	4.94	27 39.50	30 10 56.82
28	7.8	. .	. .	13.5	31.0	. .	6.8	24.5	31 31.18	43.00	1.38	IV.	2	17.289	43 18.68	47.11	5.94	30 46.80	17 51.73
29	8.9	. .	. .	41.7	59.7	. .	35.3	. .	31 59.67	43.00	1.21	IV.	3	33.975	25 50.61	47.21	3.39	31 15.46	30 0 21.21
30	8.9	. .	. .	56.2	. .	31.6	49.3	. .	34 13.89	42.98	1.11	IV.	4	44.454	14 50.88	47.66	1.83	33 29.80	29 49 20.37
31	8	. .	. .	. .	. .	. .	. .	23.7	34 30.27	42.98	1.35	VII.	2	20.406	40 2.75	47.71	5.46	33 45.94	30 14 35.92
32	8	. .	. .	. .	. .	. .	37.3	56.	36 2.39	42.97	0.99	VI.	4	55.932	2 50.55	48.05	0.12	35 18.43	29 37 18.72
33	9	. .	36.2	53.7	12.2	30.7	. .	. .	41 12.11	42.94	1.37	IV.	2	18.326	42 13.61	49.10	5.78	40 27.80	30 16 48.49
34	9	. .	34.	52.	9.7	27.3	. .	. .	9 45 9.66	−42.91	−1.34	IV.	2	20.857	−39 34.51	−49.84	−5.40	9 44 25.41	−30 14 9.75

ZONE 94. FEBRUARY 14. P. $D_0 = -27° 3' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	21.	38.	55.5	13.	. .	. .	. .	4 45 12.87	−42.44	−1.51	IV.	4	40.847	−18 36.93	− 1.18	−2.71	4 44 28.92	−27 21 40.82
2	9	. .	. .	. .	42.	. .	. .	. .	48 42.00	42.48	1.47	IV.	4	44.180	15 8.00	1.92	2.34	47 58.05	18 12.26
3	8	33.	50.5	. .	25.	. .	. .	. .	4 53 25.14	42.52	1.72	IV.	3	23.280	37 1.84	2.95	4.80	4 52 40.90	40 9.59
4	7	44.	1.5	19.	. .	. .	11.	. .	5 7 36.21	42.66	1.51	III.	4	41.088	18 21.87	6.08	2.68	.5 6 52.04	21 30.63
5	7	48.	5.5	23.	. .	. .	15.	. .	7 40.21	42.66	1.49	VI.	4	42.137	17 15.76	6.09	2.56	6 56.06	20 24.41
6	7	. .	. .	. .	. .	38.	. .	. .	9 20.69	42.67	1.36	V.	4	53.070	5 12.74	6.47	1.23	8 36.66	8 20.44
7	4	. .	. .	. .	. .	25.	42.	. .	10 7.58	42.68	1.34	V.	4	55.100	3 43.10	6.64	1.06	9 23.56	6 50.80
8	8	. .	. .	43.	. .	. .	. .	. .	12 0.35	42.69	1.54	III.	3	38.167	21 27.41	7.09	3.04	11 16.12	24 37.54
9	8	. .	. .	. .	. .	38.5	. .	. .	12 21.17	42.69	1.47	V.	4	44.635	14 39.34	7.17	2.28	11 37.01	17 48.79
10	5.6	. .	35.	. .	9.5	. .	44.	. .	13 9.53	42.70	1.62	IV.	3	31.550	28 22.88	7.37	3.81	13 25.21	31 34.06
11	9	. .	13.	30.	. .	. .	. .	. .	16 47.55	42.74	1.64	III.	3	30.435	29 32.52	8.23	3.95	16 3.17	32 44.70
12	9	. .	4.	. .	. .	. .	. .	. .	26 38.70	42.82	1.41	II.	4	48.910	15 24.75	10.63	2.32	25 54.47	18 37.70
13	9	. .	. .	. .	. .	. .	45.	. .	27 10.38	42.82	1.51	VI.	4	41.280	18 9.64	10.75	2.66	26 36.05	21 23.05
14	8	18.	35.	53.	. .	. .	. .	. .	30 9.97	42.84	1.45	III.	4	46.360	12 51.34	11.49	2.06	29 25.68	16 4.89
15	8	. .	. .	. .	. .	46.	. .	. .	30 28.57	42.85	1.76	V.	2	21.070	39 21.27	11.57	5.08	29 43.96	42 37.92
16	9	. .	. .	. .	. .	. .	. .	34.	30 41.85	42.85	1.78	VII.	2	19.100	41 24.66	11.61	5.31	29 57.22	44 41.58
17	7	. .	. .	. .	. .	23.	. .	. .	32 5.52	42.86	1.90	V.	1	9.080	51 52.81	11.97	6.53	31 20.76	55 11.31
18	8	. .	. .	. .	. .	. .	. .	13.	32 20.87	42.86	1.73	VII.	3	22.970	37 21.41	12.03	4.85	31 36.28	40 38.29
19	4	. .	. .	. .	. .	. .	. .	. .	34	42.88	1.48	VII.	4	44.450	14 50.44	12.46	2.29	32	18 5.19
20	8	. .	. .	. .	. .	. .	12.	. .	34 37.32	42.88	1.63	VI.	3	32.180	27 43.73	12.61	3.74	33 52.81	31 0.08
21	8	. .	. .	. .	. .	. .	. .	3.	35 10.79	42.89	1.85	VII.	2	13.410	47 21.83	12.75	6.01	34 26.05	50 40.59
22	8	. .	. .	. .	9.	26.	. .	. .	37 8.80	42.90	1.81	IV.	2	17.010	43 36.01	13.25	5.57	36 24.09	46 54.83
23	7	. .	26.	43.	0.5	. .	. .	. .	39 0.56	42.92	1.69	IV.	3	26.635	33 31.20	13.72	4.40	38 15.95	36 49.32
24	7	. .	44.	1.	. .	. .	. .	. .	40 18.55	42.93	1.66	III	3	29.355	29 37.54	14.05	3.96	39 33.96	32 55.55
25	8	. .	. .	. .	38.	. .	. .	. .	40 38.04	42.93	1.59	IV.	3	35.450	24 18.27	14.13	3.36	39 53.52	27 35.76
26	7	. .	33.	50.5	8.	. .	. .	. .	42 7.83	42.94	1.40	IV.	4	50.850	8 9.59	14.52	1.54	41 23.49	11 25.65
27	8.9	. .	. .	. .	46.	. .	. .	. .	44 46.05	42.96	1.69	IV.	3	27.203	32 55.61	15.19	4.34	44 1.40	36 15.14
28	8	14.	31.5	49.	. .	. .	. .	. .	5 52 6.15	−43.01	−1.51	III.	4	41.720	−17 42.16	−17.09	−2.60	5 51 21.63	−27 21 1.85

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 94	Feb. 14,	4 40	66 25 1.6	17.3	9.0	5.3	9.3	2.0	7.42	30.060	41.0	34.0			
		5 26	. .	. .	. .	. .	. .	. .	. .	30.068	40.0	36.0			
		6 0	. .	. .	. .	. .	. .	. .	. .	30.070	40.0	36.0			
		8 0	. .	. .	. .	. .	. .	. .	. .	30.058	38.5	32.0			
		9 15	. .	. .	. .	. .	. .	. .	. .	30.042	38.0	31.5			

REMARKS.

(94) 6. Micrometer reading assumed as 53r.670 instead of 53r.070, to agree with Arg. Z. 350, 92, and 357, 19.

(94) 10. Minutes assumed as 14 instead of 13.

(94) 12. Micrometer reading assumed as 43r.910 instead of 48r.910, to agree with Arg. Z., 350, 114, and 357, 45.

(94) 17. Declination discordant by 2r.5 (= 2′ 36″.8) from Meridian Circle, 1848, December 18, and Arg. Z. 350, 120, and 357, 58.

(94) 24. Micrometer reading assumed as 30r.355, not 29r.355, to agree with Mural Circle, 1848, and Meridian Circle, 1847.

ZONE 94. FEBRUARY 14. P. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
29	8	. .	. .	. .	. .	35.	. .	. .	5 52 17.56	−43.01	−1.81	V.	2	16.920	−43 41.65	−17.14	−5.58	5 51 32.74	−27 47 4.37
30	8	3.	21.	. .	. .	. .	. .	. .	54 55.41	43.03	1.70	II.	3	25.620	34 34.01	17.83	4.52	54 10.68	37 56.36
31	7	. .	. .	2.	. .	. .	. .	. .	55 19.38	43.03	1.88	III.	2	10.490	50 25.18	17.93	6.37	54 34.47	53 49.48
32	7	. .	6.	23.	41.	. .	. .	. .	56 40.69	43.05	1.52	IV.	4	41.140	18 18.67	18.28	2.67	55 56.12	21 39.62
33	7	. .	. .	. .	. .	. .	29.	. .	5 56 54.36	43.05	1.56	V.	4	37.463	22 9.31	18.35	3.11	56 9.75	25 30.77
34	9	25.	. .	. .	. .	. .	. .	. .	6 0 16.83	43.07	1.39	I.	4	51.360	7 37.35	19.22	1.47	5 59 32.37	10 58.04
35	9	. .	. .	32.	. .	. .	. .	. .	2 49.37	43.08	1.73	III.	3	23.470	36 49.48	19.91	4.79	6 3 4.56	40 14.18
36	4	. .	46.5	4.	21.	. .	. .	. .	5 21.16	43.10	1.35	IV.	4	54.760	4 4.42	20.59	1.08	4 36.71	7 26.09
37	7.8	. .	. .	11.	. .	. .	. .	. .	6 28.32	43.10	1.41	III.	4	50.565	8 27.59	20.89	1.57	5 43.81	11 50.05
38	8	. .	. .	. .	. .	. .	. .	19.	6 26.77	43.10	1.89	VII.	1	10.400	50 30.14	20.88	6.38	5 41.78	53 57.40
39	8.7	. .	. .	33.	. .	. .	. .	25.	10 50.35	43.13	1.58	V.	3	35.540	24 12.83	22.06	3.33	10 5.64	27 38.22
40	8	. .	. .	. .	. .	. .	. .	50.	11 57.98	43.14	1.52	VII.	4	41.315	18 7.07	22.36	2.65	11 13.32	21 32.08
41	7	. .	57.	. .	31.5	. .	. .	. .	16 31.61	43.17	1.57	IV.	3	36.895	22 47.39	23.58	3.17	15 46.87	26 14.14
42	8	. .	. .	. .	. .	33.	. .	. .	17 15.59	43.17	1.70	V.	3	26.115	34 4.07	23.80	4.48	16 30.72	37 32.35
43	8.7	. .	. .	54.	11.	. .	. .	. .	19 11.16	43.18	1.43	IV.	4	48.045	11 5.54	24.31	1.85	18 26.55	14 31.70
44	9	. .	45.	. .	21.	. .	. .	. .	23 20.41	43.20	1.75	IV.	2	21.450	38 57.54	25.45	5.04	22 35.46	42 28.03
45	9	. .	. .	. .	. .	18.	. .	. .	25 0.63	43.21	1.59	V.	3	34.970	24 48.45	25.92	3.41	24 15.83	28 17.78
46	4.5	. .	. .	. .	. .	52.	. .	27.	25 34.74	43.21	1.72	V.	2	23.753	36 32.84	26.08	4.77	24 49.81	40 3.69
47	7	. .	. .	14.	. .	. .	. .	. .	27 31.34	43.22	1.47	III.	4	44.788	14 29.69	26.61	2.24	26 46.65	17 58.54
48	8.7	. .	. .	. .	49.	. .	. .	. .	27 49.04	43.22	1.60	IV.	3	34.130	25 40.96	26.70	3.51	27 4.22	29 11.17
49	7	4.	21.	39.	. .	. .	. .	. .	30 56.02	43.24	1.60	III.	3	33.955	25 51.43	27.56	3.53	30 11.18	29 22.52
50	7	55.	12.5	30.	. .	. .	. .	. .	32 47.24	43.25	1.73	III.	3	23.620	36 40.00	28.08	4.78	32 2.26	40 12.86
51	8	. .	. .	19.	. .	54.	. .	. .	33 36.49	43.25	1.69	V.	3	27.020	33 7.23	28.31	4.37	32 51.55	36 39.91
52	9	. .	. .	. .	. .	8.	. .	. .	34 50.59	43.26	1.73	V.	3	24.540	35 42.96	28.65	4.67	34 5.60	39 16.28
53	8	. .	. .	. .	30.	. .	. .	. .	36 12.63	43.26	1.57	IV.	4	36.345	23 19.56	29.12	3.23	35 27.80	26 51.91
54	8	. .	. .	. .	. .	. .	7.	. .	36 32.33	43.26	1.61	VI.	4	33.740	26 2.41	29.13	3.54	35 47.46	29 35.08
55	7	. .	. .	23.	40.5	. .	. .	. .	38 40.44	43.27	1.57	IV.	3	36.680	23 0.93	29.73	3.21	37 55.60	26 33.87
56	6.7	. .	. .	. .	37.5	. .	. .	. .	39 37.47	43.28	1.40	IV.	4	50.460	8 34.22	30.00	1.55	38 52.79	12 5.77
57	7	. .	. .	3.	. .	. .	. .	. .	43 20.32	43.29	1.41	III.	4	49.670	9 23.64	31.04	1.66	42 35.62	12 56.34
58	6.7	59.	16.5	34.	. .	. .	. .	. .	44 51.11	43.30	1.38	III.	4	52.700	6 13.57	31.46	1.32	44 6.43	9 46.35
59	9	. .	. .	. .	. .	23.	. .	. .	45 5.70	43.30	1.36	V.	4	54.255	4 36.14	31.53	1.12	44 21.04	8 8.79
60	9	. .	. .	. .	52.	. .	. .	. .	46 52.04	43.31	1.82	IV.	2	15.930	44 43.72	32.03	5.72	46 6.91	48 21.47
61	9	. .	. .	. .	. .	43.	. .	. .	47 25.56	43.31	1.80	V.	2	17.710	42 52.15	32.18	5.51	46 40.45	46 29.84
62	8	. .	. .	. .	. .	33.	. .	. .	48 15.59	43.31	1.72	V.	2	24.030	36 15.53	32.43	4.73	47 30.56	39 52.69
63	8	. .	. .	. .	. .	. .	. .	40.	48 47.92	43.32	1.66	VII.	3	29.110	30 56.28	32.58	4.11	48 2.94	34 32.97
64	6.7	. .	53.	10.	27.5	. .	. .	. .	52 27.52	43.33	1.50	IV.	4	42.613	16 46.28	33.62	2.48	51 42.69	20 22.38
65	7	30.	47.	5.	. .	. .	. .	. .	54 22.08	43.34	1.74	III.	3	22.817	37 30.26	34.15	4.88	53 37.00	41 9.29
66	8	. .	. .	. .	58.	. .	. .	. .	54 58.05	43.34	1.67	IV.	3	28.190	31 53.69	34.33	4.22	54 13.04	35 32.24
67	9	. .	. .	. .	. .	. .	46.	. .	55 11.31	43.34	1.64	VI.	3	30.620	29 21.54	34.39	3.93	54 26.33	32 59.86
68	9	. .	. .	. .	. .	. .	. .	26.	55 33.92	43.34	1.65	VII.	3	29.770	30 14.74	34.49	4.03	54 48.93	33 53.26
69	2.3	. .	. .	. .	. .	. .	5.	. .	56 30.26	43.35	1.76	VI.	3	20.700	39 43.93	34.76	5.14	55 45.15	43 23.83
70	8	. .	. .	. .	42.5	. .	. .	. .	58 42.49	43.36	1.46	IV.	4	45.760	13 28.79	35.39	2.11	57 57.67	17 6.29
71	7	. .	. .	. .	38.	. .	. .	. .	6 59 37.97	43.36	1.42	IV.	4	49.160	9 55.69	35.65	1.72	6 58 53.19	13 33.06
72	8	50.	. .	24.	. .	. .	. .	. .	7 2 41.69	43.37	1.62	III.	3	32.445	27 26.41	36.50	3.71	7 1 56.70	31 6.62
73	8	55.	12.	. .	. .	. .	22.	. .	2 47.02	43.37	1.63	VI.	3	32.097	27 48.87	36.54	3.75	2 2.02	31 29.16
74	7	. .	. .	11.	28.5	. .	. .	. .	4 28.46	43.37	1.71	IV.	3	25.400	34 48.81	37.01	4.56	3 43.38	38 30.38
75	3	. .	. .	. .	3.	. .	. .	. .	5 2.98	43.37	1.44	IV.	4	47.620	11 32.27	37.17	1.89	4 18.17	15 11.33
76	7	. .	. .	54.	. .	. .	. .	. .	6 11.36	43.38	1.61	III.	3	33.340	25 27.53	37.49	3.48	5 26.37	29 8.50
77	6	. .	33.	. .	. .	. .	. .	. .	7 7 7.70	−43.38	−1.42	II.	4	49.245	−9 50.22	−37.75	−1.70	7 6 22.90	−27 13 29.67

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″			″			″	in.	°	°	°	°	°

REMARKS.

(94) 35. Minutes assumed as 3 instead of 2.

(94) 39. Transit over T. VI assumed to have been recorded as over T. VII.

(94) 53. Transit over T. V assumed as recorded over T. IV.

(94) 76. Micrometer reading assumed as $34^r.340$ instead of $33^r.340$.

Zone 94. February 14. P. $D_{\circ} = -27° 3' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
78	7	. .	. .	. .	. .	. .	22.	. .	7 6 47.45	−43.38	−1.32	VI.	4	57.185	− 1 32.18	−37.67	−0.77	7 6 2.75	−27 5 10.62
79	6	. .	. .	. .	19.	. .	. .	. .	8 18.95	43.39	1.33	IV.	4	56.340	2 25.60	38.09	0.86	7 34.23	6 4.55
80	7	. .	. .	. .	. .	17.	. .	. .	8 59.63	43.39	1.59	V.	3	35.370	24 23.55	38.29	3.36	8 14.65	28 5.20
81	7	. .	. .	. .	. .	. .	. .	54.	9 1.77	43.39	1.90	VII.	1	9.257	51 4.18	38.30	4.93	8 16.48	54 47.41
82	7	. .	. .	. .	. .	53.	. .	. .	10 35.69	43.39	1.39	V.	4	51.590	7 23.25	38.74	1.42	9 50.91	11 3.41
83	5	. .	. .	. .	. .	36.5	. .	. .	11 19.10	43.39	1.69	V.	3	26.753	33 23.91	38.94	4.40	10 34.02	37 7.25
84	9	. .	. .	. .	. .	. .	. .	21.	11 28.92	43.39	1.64	VII.	3	30.690	29 17.09	38.99	3.92	10 43.89	33 0.00
85	9	. .	. .	. .	39.	. .	. .	. .	13 39.05	43.40	1.69	IV.	3	26.605	33 33.08	39.61	4.42	12 53.96	37 17.11
86	9	. .	. .	20.	. .	. .	. .	. .	14 37.37	43.40	1.73	III.	3	23.370	36 55.82	39.87	4.82	13 52.24	40 40.51
87	9	. .	. .	. .	. .	. .	2.	. .	14 27.31	43.40	1.67	VI.	3	28.670	31 23.82	39.82	4.16	13 42.24	35 7.80
88	9	. .	. .	56.	. .	31.	. .	. .	16 13.45	43.40	1.89	V.	1	10.000	50 55.00	40.31	6.46	15 28.16	54 41.77
89	5.6	. .	37.	54.5	12.	. .	. .	. .	18 11.88	43.41	1.64	IV.	3	30.930	29 1.59	40.89	3.89	17 26.83	32 46.37
90	8	. .	. .	3.	. .	. .	. .	. .	19 20.38	43.41	1.83	III.	2	14.890	45 48.81	41.18	5.84	18 35.14	49 35.83
91	8	. .	. .	43.	. .	. .	. .	. .	20 0.38	43.41	1.88	III.	1	11.090	49 46.08	41.37	6.33	19 15.09	53 33.78
92	8	. .	. .	43.	. .	. .	. .	. .	21 0.38	43.41	1.86	III.	1	12.680	48 6.27	41.65	6.14	20 15.11	51 54.06
93	8	. .	50.	. .	24.	. .	. .	. .	23 24.39	43.42	1.67	IV.	3	28.145	31 56.45	42.32	4.23	22 39.30	35 43.00
94	7.8	36.5	. .	12.	. .	. .	. .	. .	25 29.03	43.42	1.80	III.	2	17.355	43 14.36	42.91	5.56	24 43.81	47 2.83
95	7.8	37.	. .	. .	. .	46.5	. .	. .	25 29.11	42.42	1.82	V.	2	15.925	44 44.10	42.91	5.73	24 43.87	48 32.74
96	9	. .	. .	. .	55.	. .	. .	. .	26 55.05	43.42	1.67	IV.	3	28.313	31 46.03	43.29	4.21	26 9.96	35 33.53
97	9	. .	41.	59.	. .	. .	. .	. .	28 16.06	43.43	1.71	III.	3	24.675	35 33.74	43.67	4.65	27 30.92	39 22.06
98	7	55.5	13.	30.5	. .	. .	. .	. .	30 47.62	43.43	1.38	III.	4	52.345	6 36.03	44.38	1.32	30 2.81	10 21.73
99	6.7	. .	. .	. .	43.	. .	. .	. .	31 42.95	43.43	1.32	IV.	4	57.230	1 29.74	44.63	0.74	30 58.20	5 15.11
100	10	. .	. .	. .	. .	. .	. .	55.	32 2.85	43.43	1.80	VII.	3	18.760	41 45.62	44.72	5.39	31 17.62	45 35.73
101	8	19.	37.	. .	. .	. .	. .	. .	35 11.54	43.43	1.86	II.	2	12.185	48 38.48	45.60	6.20	34 26.25	52 30.28
102	6.7	. .	. .	. .	24.	41.	. .	. .	35 23.83	43.43	1.67	IV.	3	27.950	32 8.55	45.65	4.26	34 38.73	35 58.46
103	7	. .	30.5	48.	. .	. .	. .	. .	37 5.27	43.44	1.52	III.	4	40.596	18 52.79	46.12	2.71	36 20.31	22 41.62
104	7	. .	. .	25.	. .	59.5	. .	. .	37 42.26	43.44	1.48	V.	4	44.215	15 5.75	46.28	2.29	36 57.34	18 54.32
105	9	. .	. .	. .	50.	. .	. .	. .	38 50.02	43.44	1.51	IV.	4	41.770	17 39.04	46.60	2.57	38 5.07	21 28.21
106	7.8	. .	. .	38.5	. .	. .	. .	. .	39 55.84	43.44	1.46	III.	4	46.285	12 56.04	46.90	2.04	39 10.94	16 44.98
107	9	. .	. .	. .	25.	. .	. .	. .	42 24.99	43.44	1.44	IV.	4	47.785	11 21.80	47.57	1.86	41 40.11	15 11.23
108	9	15.	. .	50.	. .	. .	. .	. .	44 7.17	43.44	1.58	III.	3	36.050	23 40.08	48.04	3.27	43 22.15	27 31.39
109	8	. .	23.	40.5	. .	. .	. .	. .	44 57.80	43.44	1.67	III.	3	28.265	31 48.66	48.27	4.22	44 12.69	35 41.15
110	8	30.	47.	4.5	. .	. .	. .	. .	48 21.88	43.44	1.67	III.	3	28.420	31 38.94	49.20	4.20	47 36.77	35 32.34
111	8.9	. .	. .	. .	. .	. .	56.	. .	48 21.28	43.44	1.70	VI.	3	26.010	34 10.72	49.19	4.49	47 36.14	38 4.40
112	7	. .	. .	. .	. .	. .	. .	56.	49 3.85	43.44	1.75	VII.	3	21.380	39 1.38	49.38	5.07	48 18.66	42 55.83
113	8	. .	. .	. .	. .	. .	. .	36.	49 1.21	43.44	1.87	VII.	2	11.380	49 29.32	49.57	6.31	49 15.90	53 25.20
114	7	. .	. .	. .	. .	. .	26.5	. .	50 51.75	43.44	1.81	VI.	2	17.375	43 13.23	49.86	5.56	50 6.50	47 8.65
115	8	. .	. .	. .	35.	. .	. .	. .	52 35.03	43.44	1.56	IV.	3	37.500	22 9.61	50.34	3.10	51 50.03	26 3.05
116	7	. .	. .	12.	. .	47.	. .	. .	53 29.50	43.44	1.61	V.	3	33.600	26 14.21	50.57	3.57	52 44.45	30 8.35
117	8	. .	. .	. .	. .	41.	. .	. .	54 23.58	43.44	1.74	IV.	3	22.370	37 59.20	50.81	4.95	53 38.40	41 54.96
118	9	. .	. .	. .	7.	. .	. .	. .	56 6.98	43.44	1.45	IV.	4	46.710	12 29.26	51.27	1.98	55 22.09	16 22.51
119	9	. .	. .	. .	. .	. .	49.	. .	56 14.42	43.44	1.44	VI.	4	47.260	11 54.59	51.30	1.91	55 29.54	15 47.80
120	7	. .	. .	. .	. .	. .	36.	. .	7 57 11.45	43.44	1.35	VI.	4	55.060	3 45.35	51.52	0.99	56 26.66	7 37.86
121	9	. .	28.	. .	. .	. .	. .	. .	8 0 2.75	43.44	1.70	II.	3	26.330	33 49.58	52.33	4.46	59 17.61	37 46.37
122	8	. .	. .	27.	. .	. .	. .	. .	0 44.38	43.44	1.82	III.	2	15.895	44 45.74	52.52	5.74	7 59 59.12	48 44.00
123	9	. .	12.	29.	. .	. .	. .	. .	7 46.52	43.44	1.53	III.	4	39.960	19 32.56	54.36	2.79	8 7 1.55	23 29.71
124	9	24.	. .	59.	. .	. .	. .	. .	11 16.15	43.43	1.54	III.	4	39.245	20 17.58	55.28	2.87	10 31.18	24 15.73
125	7	11.	28.5	45.5	3.0	. .	. .	. .	18 2.98	43.43	1.48	IV.	4	42.953	16 24.83	57.01	2.42	17 18.07	20 24.26
126	7	. .	24.5	42.	. .	. .	. .	. .	8 21 59.34	−43.42	−1.79	III.	2	17.090	−43 30.87	−58.02	−5.60	8 21 14.13	−27 47 34.49

CORRECTIONS.

Date,		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(94) 81. Micrometer reading assumed as $9^{r}.857$ instead of $9^{r}.257$.

(94) 113. Transit over T. VI assumed to have been recorded as over T. VII; and minutes as 50, not 49.

(94) 120. Transit over T. VI assumed as 46^{s} instead of 36^{s}, to agree with Arg. Z. 352, 66 and 396, 132.

ZONE 94. FEBRUARY 14. P. $D_{\circ} = -27° 3' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
127	9	. .	4.	. .	. .	. .	. .	. .	8 23 29.42	−43.42	−1.45	II.	4	46.745	−12 26.82	−58.44	−1.97	8 22 44.55	−27 16 27.23
128	7	13.	30.5	48.	5.	. .	. .	. .	25 5.11	43.42	1.49	IV.	4	43.480	15 51.97	58.80	2.36	24 20.20	19 53.13
129	9	. .	. .	. .	. .	. .	. .	44.	30 51.92	43.41	1.65	VII.	3	30.187	29 48.71	60 25	3.98	30 6.86	33 52.94
130	8	. .	. .	. .	. .	. .	. .	33.	31 58.28	43.40	1.72	VII.	3	25.050	35 10.96	60.45	4.77	31 13.16	39 16.18
131	8	. .	. .	. .	51.	. .	. .	. .	33 51.04	43.40	1.85	•IV.	2	13.790	46 58.03	61.09	6.00	33 5.79	51 5.12
132	9	. .	. .	. .	39.	. .	13.	. .	34 38.62	43.39	1.87	VI.	2	11.800	49 2.95	61.19	6.26	33 53.36	53 10.40
133	8.9	. .	. .	. .	14.	. .	. .	. .	40 14.00	43.38	1.48	IV.	4	44.640	14 39.15	62.57	2.23	39 29.14	18 43.95
134	8.9	. .	. .	45.	. .	. .	. .	. .	42 2.38	43.38	1.83	III.	2	15.460	45 13.28	63.00	5.80	41 17.17	49 22.08
135	7	. .	. .	49.	6.5	. .	. .	. .	44 6.47	43.37	1.75	IV.	3	22.475	37 52.29	63.49	4.94	43 21.35	42 0.72
136	9	. .	. .	. .	. .	. .	32.	. .	44 57.31	43.37	1.65	VI.	3	31.145	28 48.61	63.70	3.86	44 12.29	32 56.17
137	8	. .	. .	13.	. .	. .	. .	. .	47 30.38	43.36	1.81	III.	2	17.193	43 24.47	64.32	5.59	46 45.21	47 34.38
138	7	32.0	. .	7.	. .	. .	. .	. .	48 24.36	43.36	1.62	III.	3	33.265	26 34.91	64.53	3.61	48 39.38	30 43.05
139	4.5	. .	. .	. .	. .	. .	25.	42.	49 50.27	43.35	1.34	VI.	4	56.550	2 11.99	64.88	0.79	49 5.58	6 17.66
140	7	. .	. .	. .	52.	. .	. .	. .	51 51.95	43.35	1.37	IV.	4	54.560	4 17.14	65.35	1.03	51 7.23	8 23.52
141	7	10.	28.	45.	. .	. .	. .	. .	54 2.29	43.34	1.43	III.	4	49.270	9 48.85	65.87	1.66	53 17.52	13 56.38
142	8	18.	35.	53.	. .	. .	. .	. .	57 10.05	43.33	1.69	III.	3	27.790	32 18.21	66.61	4.28	56 25.03	36 29.10
143	8.9	. .	. .	30.	. .	5.	. .	. .	8 57 47.49	43.33	1.65	IV.	3	31.225	28 43.27	66.76	3.86	57 2.51	32 53.89
144	8.9	10.	. .	. .	2.	. .	. .	. .	9 0 2.01	43.32	1.60	IV.	3	34.830	24 56.93	67.29	3.41	8 59 17.09	29 7.63
145	8.9	. .	. .	. .	. .	. .	. .	37.5	0 45.48	43.31	1.52	VII.	4	41.285	18 8.95	67.45	2.62	9 0 0.65	22 19.02
146	8	. .	. .	. .	. .	. .	41.	. .	2 6.31	43.31	1.68	VI.	3	28.560	31 30.85	67.76	4.18	1 21.32	35 42.79
147	8	. .	. .	. .	. .	. .	. .	50.	2 57.95	43.31	1.61	VII.	3	34.325	25 29.16	67.96	3.47	2 13.03	29 40.59
148	8	. .	. .	. .	. .	. .	. .	19.	3 26.92	43.30	1.65	VII.	3	30.640	29 20.23	68.06	3.92	2 41.97	33 32.21
149	7.8	. .	14.	. .	. .	. .	. .	. .	5 48.82	43.29	1.83	II.	2	15.920	44 43.85	68.61	5.77	5 3.70	48 58.23
150	7	. .	. .	51.	. .	26.	. .	. .	6 8.48	43.29	1.75	III.	2	22.395	37 58.07	68.69	4.95	5 23.44	42 11.71
151	7	6.	24.	. .	. .	. .	. .	. .	7 58.43	43.28	1.74	II.	2	23.290	37 1.59	69.12	4.84	7 13.41	41 15.55
152	7	. .	. .	. .	3.	. .	. .	. .	8 3.04	43.28	1.59	IV.	3	35.585	24 9.69	69.13	3.32	7 18.17	28 22.14
153	7	. .	. .	. .	. .	41.	58.	. .	8 23.49	43.28	1.61	V.	3	34.117	25 42.03	69.21	3.50	7 38.60	29 54.74
154	8	. .	. .	51.5	9.	. .	. .	. .	10 8.96	43.28	1.67	IV.	3	29.330	30 42.23	69.61	3.08	9 24.01	34 54.92
155	8	. .	. .	. .	5.	. .	. .	. .	11 5.04	43.27	1.83	IV.	2	15.995	44 39.71	69.82	5.74	10 19.94	48 55.27
156	9	. .	. .	. .	59.	. .	. .	. .	11 58.97	43.27	1.43	IV.	4	49.080	10 0.71	70.03	1.69	11 14.27	14 12.43
157	9	. .	. .	8.	. .	. .	. .	. .	13 25.36	43.26	1.62	III.	3	33.495	26 20.48	70.35	3.57	12 40.48	30 34.40
158	7	. .	. .	. .	10.	. .	. .	. .	14 9.95	43.25	1.37	IV.	4	54.510	4 20.28	70.52	1.03	13 25.33	8 31.83
159	8	. .	8.	. .	. .	. .	. .	. .	9 15 42.71	−43.25	−1.39	II.	4	52.845	− 6 4.30	−70.86	−1.23	9 14 58.07	−27 10 16.39

ZONE 95. FEBRUARY 23. C. $D_{\circ} = -30° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	10.8	28.2	. .	. .	. .	. .	5 30 46.42	−43.39	−0.97	III.	2	16.261	−44 22.96	− 0.47	−6.17	5 30 2.06	−30 55 29.60
2	7.8	. .	. .	. .	57.2	15.2	33.	. .	30 57.26	43.40	0.79	IV.	3	32.952	26 54.73	0.53	3.54	30 13.07	37 58.80
3	8.9	. .	24.2	42.4	0.2	. .	36.5	. .	32 0.32	43.41	0.74	IV.	3	34.466	25 20.00	0.79	3.32	31 16.17	36 24.11
4	9	. .	. .	. .	11.8	39.2	. .	12.7	34 19.14	43.42	0.62	IV.	4	47.332	11 50.45	1.35	1.32	33 35.10	22 53.12
5	8	. .	. .	. .	. .	. .	. .	52.8	34 59.08	43.43	0.84	VII.	3	27.074	33 3.90	1.55	4.46	34 14.81	44 9.91
6	7.8	. .	37.	. .	12.5	31.	48.7	6.7	37 12.88	43.45	0.76	IV.	3	34.279	25 31.73	2.11	3.33	36 28.67	36 37.17
7	7	. .	. .	46.2	4.	22.	. .	. .	39 4.08	43.47	0.81	IV.	3	30.376	29 36.60	2.60	3.94	38 19.80	40 43.14
8	9	. .	17.1	. .	53.	11.3	29.7	. .	5 57 53.34	43.61	0.60	IV.	4	46.	. . .	7.45	1.52	5 57 9.13	
9	8.9	. .	42.	0.	17.8	35.8	53.8	. .	6 2 17.89	43.65	0.73	IV.	3	34.396	25 24.40	8.60	3.32	6 1 33.51	36 36.32
10	8.9	. .	58.	16.3	34.	. .	. .	. .	4 34.06	43.66	0.98	IV.	2	12.116	48 43.25	9.20	6.85	3 49.42	59 59.30
11	9	. .	. .	. .	10.3	38.2	. .	12.	5 10.29	43.67	0.91	IV.	2	18.788	41 44.36	9.35	5.77	4 25.71	52 59.48
12	9	. .	. .	. .	. .	. .	8.2	26.	6 6 32.33	−43.68	−0.82	VI.	3	25.153	−35 4.56	− 9.71	−4.77	6 4 47.83	−30 46 19.04

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(94) 127. Transit over T. VI assumed as recorded over T. II, to agree with Arg. Z. 352, 107.

(94) 130. Transit over T. VI assumed as recorded over T. VII.

(94) 138. Minutes assumed as 49 instead of 48.

(95) 3. Differs 3′ 30″ in δ from Arg. Z. 353, 7.

(95) 4. Transits discordant; those over T.'s IV and V rejected.

(95) 11. Transits discordant.

(95) 12. Minutes assumed as 5 instead of 6.

ZONE 95. FEBRUARY 23. C. $D_{\circ}=-30^{\circ}\ 11'\ 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	9	..	..	..	24.	42.	59.2	..	6 7 23.89	−43.69	−0.62	IV.	4	43.706	−15 37.66	− 9.93	−1.85	6 6 39.58	−30 26 49.44
14	9	..	..	..	..	..	42.3	0.1	8 6.54	43.69	0.68	VI.	4	38.734	20 49.14	10.13	2.64	7 22.17	32 1.91
15	8	..	..	40.5	58.2	16.3	34.2	..	9 58.36	43.70	0.84	IV.	3	23.998	36 16.59	10.61	4.95	9 13.82	47 32.15
16	8	..	19.5	37.2	55.3	13.3	..	..	12 55.29	43.72	0.93	IV.	2	14.751	45 57.79	11.40	6.42	12 10.64	57 15.61
17	9	..	..	43.5	..	..	..	..	15 1.36	43.74	0.57	III.	3	46.921	12 18.16	11.94	1.38	14 17.05	23 31.48
18	8	..	..	33.8	52.	9.5	..	..	15 51.78	43.74	0.69	IV.	3	36.705	22 59.36	12.16	2.95	15 7.35	34 14.47
19	8	..	..	46.5	4.2	22.	..	..	17 4.24	43.76	0.62	IV.	3	42.802	16 36.88	12.49	2.00	16 19.86	27 51.37
20	9.10	..	..	..	..	45.2	3.2	..	17 27.44	43.76	0.61	V.	3	44.048	15 19.04	12.59	1.83	16 43.07	26 33.46
21	9	..	..	5.	23.	41.2	..	..	20 23.07	43.77	0.83	IV.	2	23.670	36 38.06	13.36	5.01	19 38.47	47 56.43
22	9	..	..	..	..	39.	..	16.1	22 21.73	43.78	0.78	V.	3	28.752	31 18.49	13.88	4.20	21 37.17	30 42 36.57
23	9	..	28.2	..	4.7	..	40.3	..	4.43	..	..	IV.	2	7.825	53 12.48	14.62	7.57	(25)	31 4 34.67
24	9	..	..	42.8	0.7	..	..	..	28 0.74	43.82	0.78	IV.	3	26.262	33 54.72	15.40	4.59	27 16.14	30 45 14.71
25	9	..	..	..	..	4.3	..	40.	28 46.42	43.82	0.60	V.	4	42.425	16 58.06	15.60	2.05	28 2.00	28 15.71
26	9	..	..	..	7.	25.	..	..	30 7.05	43.83	0.82	IV.	3	22.500	37 50.72	15.96	5.19	29 22.40	49 11.87
27	9	..	..	..	58.	16.	..	..	30 58.06	43.84	0.78	IV.	3	26.441	33 43.49	16.19	4.56	30 13.44	45 4.24
28	9	..	..	17.	..	..	10.	..	32 34.62	43.85	0.54	IV.	4	48.379	10 44.78	16.63	1.14	31 50.23	22 2.55
29	9	..	..	36.2	..	12.	30.	..	32 54.17	43.85	0.63	IV.	4	40.398	19 5.33	16.70	2.37	32 9.69	30 24.40
30	5	..	..	24.2	42.	0.	18.	..	34 42.14	43.85	0.50	IV.	4	50.619	8 24.20	17.19	0.80	33 57.79	19 42.19
31	8	..	..	50.	8.5	26.2	44.	..	36 8.26	43.86	0.62	IV.	4	40.419	19 4.01	17.57	2.37	35 23.78	30 23.95
32	9	..	..	..	..	3.2	..	39.2	36 45.43	43.87	0.65	V.	4	37.092	22 32.46	17.74	2.88	36 0.91	33 53.08
33	6	..	55.	13.	31.	48.5	6.5	..	39 30.81	43.88	0.87	IV.	2	16.858	43 45.49	18.48	6.10	38 46.06	55 10.07
34	6	..	39.	..	15.	32.5	..	..	40 32.72	43.88	0.80	IV.	3	24.017	36 15.40	18.68	4.94	39 48.04	47 39.02
35	9	..	..	..	21.	39.2	57.0	..	40 21.24	43.88	0.51	IV.	4	49.951	9 5.96	18.70	0.90	39 36.85	20 25.56
36	9	..	..	..	..	..	46.3	..	42 10.50	43.90	0.79	VI.	3	23.852	36 26.01	19.19	4.98	41 25.81	47 50.18
37	9	..	42.7	..	18.	36.2	..	..	45 18.27	43.91	0.71	IV.	3	30.788	29 10.50	20.03	3.87	44 33.65	40 34.40
38	9	..	10.3	28.	..	..	..	..	45 45.97	43.91	0.54	III.	4	46.331	12 53.16	20.15	1.45	45 1.52	24 14.76
39	8	..	..	50.	8.	..	43.2	..	47 7.80	43.92	0.44	IV.	4	55.468	3 20.21	20.52	0.06	46 23.44	14 40.79
40	8	..	..	52.5	..	28.	..	..	49 10.25	43.93	0.54	IV.	3	45.039	14 16.63	21.07	1.65	48 25.78	25 39.35
41	8.9	..	..	..	50.	7.7	25.5	..	49 49.79	43.93	0.88	IV.	2	14.624	46 5.82	21.25	6.64	49 4.98	57 33.71
42	9	..	..	42.2	0.2	..	..	..	52 0.18	43.94	0.71	IV.	3	29.580	30 26.48	21.83	4.06	51 15.53	41 52.37
43	7	..	..	49.5	7.3	25.2	..	..	53 7.34	43.95	0.62	IV.	3	38.375	21 14.79	22.13	2.69	52 22.77	32 39.61
44	6.7	..	..	..	..	2.	20.	37.3	53 43.93	43.95	0.78	V.	2	23.975	36 18.91	22.29	4.95	52 59.20	47 46.15
45	8	..	..	..	..	28.	46.2	..	54 10.17	43.95	0.86	V.	2	15.985	44 40.34	22.41	6.22	53 25.36	56 8.97
46	9	..	..	..	..	..	..	2.5	56 8.91	43.96	0.56	VII.	4	43.423	15 54.79	22.95	1.88	55 24.39	27 19.62
47	9	..	7.4	25.5	43.4	..	..	..	58 43.31	43.97	0.50	IV.	4	48.066	11 4.23	23.64	1.17	57 58.84	22 29.04
48	8.9	..	..	..	18.8	37.	55.	..	6 59 19.08	43.97	0.61	IV.	3	37.869	21 46.29	23.81	2.74	6 58 34.50	33 12.84
49	7	..	..	40.2	58.	16.2	33.5	..	7 0 58.06	43.98	0.53	IV.	3	45.054	−14 15.75	24.25	1.65	7 0 13.55	25 41.65
50	9	..	..	..	9.5	27.3	45.	..	7 2 9.41	−43.98	−0.62	IV.	3	37.	. . .	−24.58	−2.90	7 1 24.81	−30

ZONE 96. FEBRUARY 23. C. $D_{\circ}=-30^{\circ}\ 11'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
1	9	..	..	..	..	8.	25.7	43.	7 56 49.76	−44.10	−1.15	V.	3	28.499	−31 34.55	−39.28	−4.24	7 55 4.51	−30 43 18.07
2	8.9	..	..	..	..	..	..	30.2	7 57 36.45	44.10	1.20	VII.	3	24.096	36 10.76	39.48	4.94	55 51.15	47 55.18
3	9	..	..	59.6	17.9	35.6	..	..	8 0 17.74	44.10	0.89	IV.	4	48.275	10 51.25	40.41	1.13	7 59 32.75	22 32.79
4	9	..	59.1	16.8	34.5	52.7	..	..	1 34.73	44.10	1.16	IV.	3	27.551	32 33.78	40.74	4.38	8 0 49.47	30 44 18.90
5	9	..	11.	28.8	46.7	..	..	..	2 46.80	44.10	1.36	IV.	2	11.511	49 21.28	41.03	6.98	2 1.34	31 1 9.29
6	9	..	..	..	..	..	..	46.8	2 53.26	44.10	0.87	VII.	4	48.568?	10 32.07	40.79	1.08	1 8.29	30 22 13.94
7	9	..	..	..	..	..	..	50.	8 2 56.47	−44.10	−0.86	VII.	4	49.389	− 9 40.63	−41.08	−0.97	8 2 11.51	−30 21 22.68

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 96	Feb. 23,	5 34	. .	..	..	..	..	..	. .	30.314	35.0	28.6			
		6 0	69 32 21.1	42.9	29.5	35.1	28.0	27.3	30.65	30.314	35.0	28.1	33.5	34.3	41.8
		6 40	. .	..	..	..	..	..	. .	. .	..	27.9			
		7 0	. .	..	..	..	..	..	. .	30.337	33.7	27.8			
		8 0	. .	..	..	..	..	..	. .	30.362	32.5	26.7			
		8 20	. .	..	..	..	..	..	. .	. .	..	26.2			
		8 30	20.4	43.7	29.5	35.9	28.1	26.8	30.73	. .	..	..	31.9	32.0	41.0
		8 39	. .	..	..	..	..	..	. .	. .	..	25.7			
		9 0	. .	..	..	..	..	..	. .	30.370	32.0	25.0			

REMARKS.

(95) 34. Time of transit over T. V assumed as $32^s.5$ instead of $52^s.5$, and transits over T.'s I, III, and IV as recorded over T.'s II, IV, and V.

Feb. 23. Night favorable but cold; $5^h\ 40^m$ to $5^h\ 57^m$, suspended observations; $6^h\ 52^m$ to 7^h, many small stars missed; observations suspended from $7^h\ 2^m$ to $7^h\ 57^m$ and from $9^h\ 7^m$ to $10^h\ 20^m$.

(96) 1. Minutes assumed as 55 instead of 56.

(96) 2. Minutes assumed as 56 instead of 57.

(96) 6. Minutes assumed as 1 instead of 2.

ZONE 96. FEBRUARY 23. C. $D_0 = -30° 11' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		r.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
8	9.10	. .	42.7	5.	. .	36.	. .	. .	8 5 18.32	−44.10	−0.93	IV.	4	43.118	−16 14.61	−41.68	−1.93	8 3 33.29	−30 27 58.22
9	9	. .	. .	8.7	26.2	44.7	. .	. .	7 26.54	44.10	1.04	IV.	3	33.818	26 0.41	42.22	3.39	6 41.40	37 46.02
10	8.9	. .	. .	26.2	44.1	2.2	. .	. .	9 44.10	44.10	0.88	IV.	4	46.816	12 22.56	42.81	1.37	8 59.12	24 6.74
11	8	. .	1.	18.3	36.5	54.6	. .	30.	10 36.51	44.10	0.92	IV.	4	43.088	16 16.49	43.03	1.93	9 51.49	28 1.45
12	9	. .	. .	. .	. .	. .	. .	32.5	10 38.96	44.10	0.85	VII.	4	48.689	10 24.34	43.05	1.05	9 54.01	22 8.44
13	8	. .	12.1	30.1	48.2	6.	24.	. .	14 48.09	44.10	1.03	IV.	3	33.002	26 51.66	44.11	3.52	14 2.96	38 39.29
14	9.10	. .	. .	. .	. .	. .	28.2	47.	14 52.96	44.10	0.92	VI.	3	41.539	17 56.59	44.13	2.18	14 7.94	29 42.90
15	9.10	. .	52.	0.	. .	. .	. .	. .	17 27.95	44.10	1.22	III.	2	17.660	42 55.04	44.79	5.98	16 42.63	54 45.81
16	9	. .	. .	. .	42.5	0.7	18.2	. .	17 42.52	44.10	1.26	IV.	2	14.851	45 51.45	44.84	6.47	16 57.16	57 42.76
17	8	. .	. .	. .	. .	. .	. .	5.	8 18 11.48	44.10	0.76	VII.	4	51.495	7 28.51	44.97	0.62	17 26.62	19 14.10
18	9	. .	. .	. .	. .	26.7	44.7	. .	20 8.81	44.10	1.16	IV.	2	21.482	38 55.48	45.46	5.38	19 23.55	50 46.32
19	9	. .	. .	. .	26.7	44.	2.1	. .	21 26.32	44.10	1.27	IV.	2	13.376	47 24.28	45.82	6.72	20 40.95	59 16.82
20	8	. .	. .	18.7	36.5	54.6	12.1	. .	23 36.57	44.10	0.77	IV.	4	49.736	9 19.44	46.41	0.88	22 51.70	21 6.73
21	8	. .	53.	11.1	28.3	46.5	4.6	. .	25 28.71	44.10	0.98	IV.	3	33.754	26 4.48	46.92	3.41	24 43.63	37 54.81
22	8	. .	. .	20.7	38.2	. .	14.	. .	26 38.37	44.09	0.91	IV.	3	38.915	20 40.67	47.23	2.59	25 53.37	30 32 30.49
23	7.8	. .	. .	. .	. .	3.5	21.5	39.3	27 45.50	44.09	1.26	V.	2	11.339	49 32.14	47.53	7.04	27 0.15	31 1 26.71
24	8	. .	18.3	36.3	54.2	12.	. .	. .	29 54.16	44.09	1.08	IV.	3	25.861	34 19.63	48.12	4.66	29 9.01	30 46 12.41
25	8	. .	20.	37.7	55.7	13.8	. .	. .	30 55.76	44.08	1.11	IV.	3	23.013	37 18.40	48.40	5.14	30 10.57	49 11.94
26	9	. .	. .	. .	. .	51.2	9.7	. .	31 33.73	44.08	0.72	V.	4	52.101	6 51.14	48.57	0.53	30 48.93	18 40.24
27	9.10	. .	. .	41.2	59.2	. .	. .	. .	35 59.19	44.07	1.13	IV.	2	19.031	41 29.17	49.78	5.78	35 13.99	30 53 24.73
28	9	. .	. .	. .	41.2	. .	16.8	. .	37 41.07	44.07	1.25	IV.	3	9.450	51 29.83	50.23	7.34	36 55.75	31 3 27.40
29	9	. .	. .	. .	. .	47.	4.7	. .	38 29.06	44.07	0.85	V.	4	40.487	18 59.56	50.45	2.32	37 44.14	30 30 52.33
30	8	. .	. .	. .	35.	53.2	10.5	. .	39 35.06	44.07	0.79	IV.	4	45.012	14 15.75	50.75	1.64	38 50.20	26 8.14
31	9	. .	. .	. .	. .	10.	27.8	. .	40 51.99	44.07	1.15	V.	2	16.988	43 37.39	51.08	6.11	40 6.77	55 34.58
32	9	. .	59.2	17.	35.	. .	. .	. .	42 34.98	44.06	0.77	IV.	3	30.452	29 31.83	51.52	3.93	41 49.95	41 27.28
33	9	. .	. .	51.	9.	27.	. .	. .	43 9.00	44.06	1.09	IV.	3	21.045	39 21.90	51.67	5.45	42 23.85	51 19.02
34	8.9	. .	. .	. .	1.	18.8	. .	54.5	44 0.96	44.05	0.73	IV.	4	48.351	10 46.55	51.89	1.11	43 16.18	22 39.55
35	9	. .	. .	59.	17.	35.	. .	. .	46 17.01	44.05	0.87	IV.	3	36.601	23 5.96	52.49	2.95	45 32.09	35 1.40
36	9	. .	. .	. .	5.	22.8	. .	. .	47 4.97	44.05	0.88	IV.	3	35.349	24 24.61	52.69	3.16	46 20.04	36 20.46
37	9	. .	. .	. .	42.8	0.7	18.5	. .	47 42.79	44.05	0.92	IV.	3	32.228	27 40.34	52.85	3.64	46 57.82	39 36.83
38	9	. .	. .	. .	. .	56.2	14.3	. .	48 38.41	44.04	0.93	V.	3	31.270	28 40.69	53.09	3.80	47 53.44	40 37.58
39	9	. .	32.	49.2	. .	. .	43.	0.7	50 7.28	44.04	0.92	IV.	3	28.935	31 6.75	53.47	4.17	49 22.32	43 4.39
40	9	. .	. .	49.3	. .	25.	43.2	1.0	50 7.28	44.04	0.87	IV.	3	34.647	25 8.53	53.47	3.25	49 22.37	37 5.25
41	8.9	. .	7.5	25.	. .	0.	. .	. .	52 42.76	44.03	0.70	IV.	4	47.600	11 33.52	54.11	1.20	51 58.03	23 28.83
42	8.9	. .	. .	58.5	16.2	34.2	. .	. .	53 16.31	44.03	0.90	IV.	3	31.982	27 55.65	54.25	3.68	52 31.38	39 53.58
43	9	. .	. .	. .	. .	27.3	45.3	. .	54 9.43	44.03	0.99	V.	3	24.786	35 27.33	54.46	4.84	53 24.41	47 26.63
44	8.9	. .	. .	45.	3.	20.7	. .	. .	57 2.90	44.02	0.71	IV.	4	45.557	13 41.63	55.19	1.56	56 18.17	25 38.38
45	9	. .	. .	. .	. .	. .	. .	41.?	57 47.38	44.02	0.78	VII.	4	39.651	19 51.25	55.37	2.46	57 2.58	31 49.08
46	9	. .	41.	58.8	16.8	. .	. .	. .	9 0 16.78	44.01	0.87	IV.	3	32.242	27 39.46	55.98	3.64	8 59 31.90	39 39.08
47	9	. .	. .	. .	. .	55.2	. .	. .	0 37.23	44.01	1.02	V.	3	21.312	39 5.58	56.06	5.41	8 59 52.20	51 7.05
48	9	. .	. .	. .	. .	. .	. .	40.2	0 46.35	44.01	1.12	VII.	2	13.160	47 37.40	56.10	6.76	9 0 1.22	59 40.26
49	9	. .	. .	. .	46.	. .	21.5	. .	6 45.84	44.01	1.08	IV.	2	15.510	45 10.27	57.50	6.36	6 0.75	57 14.13
50	9	. .	29.	47.	. .	23.	40.7	. .	7 4.92	44.01	1.03	IV.	2	17.757	42 49.06	57.58	6.00	6 19.88	54 52.64
51	8	. .	. .	. .	. .	. .	. .	14.7	9 7 21.12	−44.01	−0.69	VII.	4	44.262	−15 2.17	−57.64	−1.73	9 6 36.42	−30 27 1.54

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
		h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 96	1847, Feb. 23,	10 21	. .	. .	. .	. .	. .	. .	. .	30.386	31.0	24.9			
		11 2	. .	. .	. .	. .	. .	. .	. .	30.382	30.5	24.5			
		11 21	69 32 19.9	44.5	30.4	35.9	28.4	26.1	30.87	30.384	30.1	24.3	29.0	30.5	40.0

REMARKS.

(96) 8. Minutes assumed as 4 instead of 5.
(96) 15. Observation of transit over T. III assumed as 10^s instead of 0^s.

ZONE 97. FEBRUARY 23. C. $D_0 = -30° 11' 0''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	6	8.2	25.7	43.7	1.3	19.5	37.	55.1	10 21 1.50	−43.54	−0.08	IV.	4	52.835	− 6 5.11	−72.84	−0.36	10 20 17.88	−30 18 18.31
2	9	. .	22.5	. .	59.3	. .	. .	. .	25 58.90	43.50	0.51	IV.	2	9.105	51 52.24	73.71	7.44	25 14.89	31 4 13.39
3	9	. .	1.	18.8	36.5	54.7	12.6	. .	28 36.74	43.48	0.25	IV.	3	37.812	21 49.86	74.17	2.74	27 53.01	30 34 6.77
4	9	. .	. .	45.2	3.1	. .	39.	. .	31 3.17	43.46	0.26	IV.	3	37.732	21 54.94	74.58	2.75	30 19.45	34 12.27
5	9	. .	. .	. .	. .	. .	8.	. .	30 32.17	43.47	0.44	VI.	2	19.272	41 14.11	74.50	5.77	29 48.26	53 34.38
6	8.9	. .	. .	. .	. .	. .	37.1	55.	31 1.19	43.46	0.48	VI.	2	13.938	46 48.68	74.57	6.64	30 17.25	59 9.89
7	9	. .	. .	. .	. .	. .	11.3	29.	32 35.31	43.44	0.48	VI.	2	15.984	44 40.34	74.84	6.31	31 51.39	30 57 1.49
8	9	. .	30.	47.8	5.7	. .	. .	. .	35 5.81	43.42	0.54	IV.	2	10.002	50 55.87	75.25	7.31	34 21.85	31 3 18.43
9	8	. .	27.	45.	3.	. .	. .	. .	37 2.96	43.41	0.51	IV.	2	14.691	46 1.56	75.57	6.52	36 19.04	30 58 23.65
10	9	. .	. .	. .	23.	. .	58.3	. .	37 22.84	43.41	0.15	IV.	4	52.900	6 1.03	75.63	0.35	36 39.28	18 17.01
11	9	. .	. .	. .	23.4	. .	59.	17.	37 23.40	43.41	0.21	IV.	4	46.418	12 47.76	75.63	1.36	36 39.78	25 4.75
12	9	. .	. .	. .	. .	8.2	26.5	44.1	38 50.53	43.39	0.29	V.	3	38.922	20 40.48	75.87	2.56	38 6.85	32 58.91
13	8	. .	40.7	58.	16.2	. .	. .	. .	41 16.23	43.37	0.44	IV.	3	23.870	36 24.57	76.26	5.00	40 32.42	48 45.83
14	8	. .	. .	39.5	57.	15.2	. .	. .	41 57.23	43.36	0.49	IV.	3	19.067	41 26.10	76.36	5.80	41 13.38	53 48.26
15	9	. .	. .	. .	59.7	17.6	35.2	. .	42 59.62	43.36	0.38	IV.	3	29.755	30 15.37	76.53	4.04	42 15.88	.42 35.94
16	9	. .	. .	. .	. .	. .	4.7	22.	43 28.66	43.36	0.34	VI.	3	34.782	25 0.30	76.60	3.22	42 44.96	37 20.12
17	9.10	. .	. .	. .	33.	50.7	. .	. .	45 32.92	43.34	0.27	IV.	4	46.012	13 13.03	76.92	1.42	44 49.31	25 31.37
18	9	. .	16.4	34.5	52.1	. .	. .	. .	47 52.20	43.32	0.23	IV.	4	50.528	8 29.97	77.29	0.71	47 8.65	30 20 47.97
19	9	. .	. .	32.	. .	. .	26.	. .	48 50.03	43.30	0.57	IV.	2	13.061	47 43.86	77.44	6.82	48 6.16	31 0 8.12
20	8	. .	. .	. .	30.5	48.3	6.	. .	49 30.32	43.29	0.56	IV.	2	13.939	46 48.68	77.54	6.65	48 46.47	30 59 12.87
21	8	. .	. .	. .	. .	47.4	5.7	23.3	50 29.78	43.28	0.27	V.	4	47.383	11 47.12	77.69	1.20	49 46.23	24 6.01
22	8.9	. .	. .	. .	51.8	9.7	27.4	. .	51 51.74	43.27	0.46	IV.	3	26.900	33 14.44	77.89	4.52	51 8.01	30 45 36.85
23	7.8	. .	42.3	0.1	18.	36.	54.	. .	54 18.08	43.25	0.61	IV.	2	10.933	49 57.37	78.25	7.14	53 34.22	31 2 22.76
24	9.10	. .	. .	. .	37.	54.7	13.	. .	54 36.95	43.25	0.59	IV.	2	13.361	47 25.22	78.30	6.74	53 53.11	30 59 50.26
25	9	. .	54.3	12.4	29.8	48.	. .	. .	10 57 30.08	43.22	0.47	IV.	3	27.481	32 38.16	78.73	4.78	10 56 46.39	45 1.67
26	9.10	. .	. .	11.3	. .	46.8	. .	. .	11 2 29.05	43.17	0.38	IV.	4	40.961	18 29.77	79.44	2.22	11 1 45.50	30 51.43
27	9.10	. .	20.7	. .	57.	. .	. .	. .	4 56.75	43.15	0.43	IV.	4	37.455	22 9.86	79.79	2.79	4 13.17	34 32.44
28	9	. .	. .	41.8	. .	17.3	. .	. .	5 59.55	43.14	0.28	IV.	4	52.258	6 41.48	79.93	0.43	5 16.13	19 1.84
29	9	. .	1.	. .	37.	54.7	. .	. .	7 36.87	43.13	0.43	IV.	3	38.581	21 1.80	80.15	2.61	6 53.31	30 33 24.56
30	9.10	. .	27.	. .	. .	20.7	. .	. .	9 2.81	43.11	0.67	IV.	2	12.214	48 37.16	86.36	6.96	8 19.03	31 1 4.48
31	9	. .	0.2	18.	36.1	. .	. .	. .	11 35.99	43.08	0.41	IV.	4	42.271	17 7.80	80.70	2.01	10 52.50	30 29 30.51
32	8	. .	. .	. .	. .	54.	12.	. .	11 36.09	43.08	0.64	V.	3	17.168	43 25.54	80.70	6.14	10 52.37	55 52.38
33	9	. .	. .	. .	. .	. .	48.2	6.2	12 12.55	43.08	0.43	VI.	4	39.658	19 51.19	80.78	2.43	11 29.04	32 14.40
34	9	. .	21.	39.	. .	14.2	. .	. .	14 56.65	43.05	0.42	IV.	4	42.411	16 59.01	81.14	1.97	14 13.18	29 22.12
35	9	. .	24.3	42.4	. .	18.5	36.	. .	15 0.30	43.05	0.54	IV.	3	30.366	29 37.23	81.15	3.95	14 16.71	42 2.33
36	9.10	. .	. .	57.7	. .	33.	. .	. .	17 15.33	43.02	0.60	IV.	3	23.297	37 0.77	81.44	5.12	16 31.71	49 27.33
37	9.10	. .	. .	. .	36.5	. .	12.8	. .	17 36.74	43.02	0.68	IV.	2	16.270	44 22.58	81.49	6.29	16 53.04	56 50.36
38	9	. .	55.	. .	30.7	49.	. .	. .	21 30.87	42.77	0.40	IV.	4	46.932	12 15.28	81.99	1.26	20 47.70	30 24 38.53
39	8.9	. .	. .	. .	. .	. .	27.6	45.7	11 21 51.77	−42.97	−0.73	VI.	2	11.472	−49 23.53	−82.04	−7.10	11 21 8.07	−31 1 52.67

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 98. MARCH 5. P. $D_{\circ} = -27° 40' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
1	8	. .	. .	. .	. .	10.5	. .	. .	6 9 53.00	−44.91	−1.17	V.	3	31.003	−28 57.32	− 6.11	−3.87	6 9 6.92	−28 9 57.30
2	9	. .	. .	. .	. .	26.	. .	. .	11 8.53	44.92	1.14	V.	3	33.980	25 50.55	6.44	3.50	10 22.47	6 50.49
3	8	52.	10.	27.	. .	. .	. .	. .	13 44.54	44.94	1.12	III.	3	36.570	23 7.58	7.13	3.17	12 58.48	28 4 7.88
4	8	20.5	38.	55.	12.5	. .	. .	. .	19 12.63	44.98	1.07	IV.	4	43.570	15 46.26	8.56	2.31	18 26.58	27 56 47.13
5	8	16.	. .	51.	8.	. .	. .	. .	22 8.32	44.99	1.30	IV.	2	19.015	41 30.18	9.33	5.39	21 22.03	28 22 34.90
6	8	. .	. .	17.	. .	. .	. .	. .	23 34.47	45.00	1.19	III.	3	32.380	27 30.49	9.72	3.69	22 48.28	28 8 33.90
7	7.8	. .	. .	. .	. .	. .	. .	28.5	23 36.21	45.00	1.05	VII.	4	45.950	13 16.17	9.73	2.02	22 50.16	27 54 17.92
8	7	. .	. .	. .	. .	. .	35.	. .	25 59.99	45.02	1.43	VI.	1	8.643	52 20.30	10.37	6.72	25 13.54	28 33 27.39
9	7	. .	. .	. .	51.	. .	. .	. .	26 51.00	45.02	1.07	IV.	4	44.785	14 29.94	10.59	2.16	26 4.91	27 55 32.69
10	8	. .	. .	. .	45.	. .	. .	. .	27 44.98	45.03	1.02	IV.	4	50.233	8 48.46	10.84	1.50	26 58.93	27 49 50.80
11	9	. .	. .	31.	. .	. .	. .	. .	31 48.47	45.05	1.25	III.	3	28.193	31 53.12	11.91	4.23	31 2.17	28 12 59.26
12	7	. .	. .	. .	. .	. .	32.5	. .	31 57.48	45.05	1.46	VI.	1	7.270	53 46.61	11.95	6.91	31 10.97	34 55.47
13	8	. .	. .	. .	. .	. .	27.	. .	32 52.06	45.06	1.34	VI.	2	19.425	41 4.57	12.20	5.35	32 5.66	22 12.12
14	7	. .	. .	. .	19.	. .	. .	. .	34 19.04	45.06	1.30	IV.	2	22.935	37 24.11	12.59	4.89	33 32.68	18 31.59
15	7	. .	. .	8.	26.	. .	. .	. .	35 25.75	45.07	1.20	IV.	3	33.293	26 33.59	12.88	3.59	34 39.48	7 40.06
16	8	. .	. .	12.	. .	. .	. .	. .	36 29.47	45.08	1.22	III.	3	32.033	27 52.07	13.16	3.73	35 43.17	28 8 58.96
17	7	. .	. .	. .	. .	. .	1.5	. .	36 26.76	45.08	0.99	VI.	4	55.475	3 19.46	13.15	0.85	35 40.69	27 44 23.46
18	7	. .	. .	. .	1.	19.	. .	. .	38 1.27	45.09	1.25	V.	3	28.825	31 13.91	13.57	4.16	37 14.93	28 12 21.64
19	7.8	. .	34.	51.	. .	. .	. .	. .	41 8.68	45.11	1.16	III.	4	38.483	21 5.39	14.41	2.94	40 22.41	2 12.74
20	7	. .	. .	. .	19.	. .	. .	. .	42 19.04	45.11	1.37	IV.	2	17.890	42 40.72	14.72	5.54	41 32.56	28 23 50.98
21	9	. .	. .	. .	. .	. .	. .	13.	42 20.52	45.11	1.38	VII.	2	17.035	43 34.19	14.73	5.65	41 34.03	24 44 57
22	8	. .	. .	. .	. .	. .	4.	. .	43 29.10	45.12	1.26	VI.	3	28.980	31 4.37	15.04	4.14	42 42.72	12 13.55
23	7	. .	. .	. .	. .	. .	4.5	. .	44 19.52	45.12	1.42	VI.	2	12.883	47 54.97	15.31	6.18	43 32.98	29 6.46
24	7	. .	. .	. .	51.	. .	. .	. .	45 51.03	45.13	1.45	IV.	1	10.035	50 52.61	15.66	6.54	45 4.45	32 4.81
25	8	. .	. .	53.	. .	. .	. .	. .	47 10.48	45.14	1.41	III.	2	14.523	46 12.03	16.03	5.98	46 23.93	27 24.04
26	6.7	. .	. .	4.5	22.	. .	. .	. .	49 22.01	45.14	1.35	IV.	2	21.315	39 6.02	16.53	5.10	47 35.52	20 17.65
27	8.9	. .	. .	21.	. .	. .	. .	. .	49 38.47	45.15	1.26	III.	3	29.807	30 11.67	16.70	4.03	48 52.06	11 22.40
28	9	. .	. .	. .	47.	. .	. .	. .	51 47.03	45.16	1.44	IV.	2	11.720	49 8.03	17.27	6.34	51 0.43	30 21.64
29	7	42.	0.	17.5	. .	. .	. .	. .	54 34.74	45.17	1.27	III.	3	29.533	30 29.05	18.02	4.06	53 48.30	28 11 41.13
30	9	. .	. .	. .	. .	12.	. .	. .	54 54.55	45.17	1.15	V.	4	42.425	16 58.07	18.11	2.43	54 8.23	27 58 8.61
31	6.7	. .	. .	. .	. .	51.	. .	. .	55 33.49	45.18	1.32	V.	3	24.693	35 33.24	18.29	4.67	54 46.99	28 16 46.20
32	8	. .	. .	. .	. .	27.	. .	. .	57 9.54	45.19	1.21	V.	3	36.905	22 47.01	18.72	3.12	56 23.14	3 58.85
33	9	. .	. .	. .	. .	. .	. .	2.	6 57 9.64	45.19	1.25	VII.	3	32.575	27 18.88	18.72	3.67	56 23.20	8 31.27
34	9	45.	. .	20.	. .	. .	. .	. .	7 0 37.42	45.20	1.32	III.	3	25.610	34 35.13	19.65	4.55	6 59 50.90	28 15 49.33
35	8	. .	24.	. .	59.	. .	. .	. .	1 58.95	45.21	1.15	IV.	4	43.040	16 19.44	20.03	2.35	7 1 12.59	27 57 31.82
36	8	. .	. .	. .	. .	39.	. .	. .	2 21.55	45.21	1.19	V.	4	38.965	20 34.90	20.12	2.84	1 35.15	28 1 47.86
37	9	. .	. .	. .	. .	. .	30.	. .	2 55.20	45.21	1.15	VI.	4	42.663	16 42.77	20.27	2.39	2 8.84	27 57 55.43
38	8	. .	. .	. .	. .	6.	. .	. .	3 48.56	45.22	1.13	V.	4	45.230	14 2.08	20.52	2.09	3 2.21	27 55 14.69
39	8	. .	. .	. .	. .	. .	57.	. .	4 22.10	45.22	1.29	VI.	3	28.975	31 4.68	20.67	4.14	3 35.59	28 12 19.49
40	7	. .	. .	. .	. .	. .	. .	44.	4 51.47	45.22	1.47	VII.	2	11.675	49 10.61	20.80	6.35	4 4.78	30 27.76
41	8	. .	. .	. .	44.	. .	. .	. .	6 44.04	45.23	1.27	IV.	3	31.875	28 2.30	21.32	3.75	5 57.54	9 17.37
42	8	. .	. .	41.	. .	. .	. .	. .	7 58.47	45.24	1.33	III.	3	25.877	34 18.25	21.65	4.52	7 11.90	15 34.42
43	8	. .	. .	. .	32.	. .	. .	. .	8 32.04	45.24	1.39	IV.	2	20.370	40 5.32	21.80	5.23	7 45.41	21 22.35
44	9	. .	. .	. .	. .	. .	32.	. .	8 57.08	45.24	1.34	VI.	3	25.620	34 35.25	21.92	4.55	8 10.50	15 51.72
45	8	. .	. .	. .	. .	25.	. .	. .	10 7.53	45.24	1.25	V.	3	34.783	25 0.12	22.23	3.39	9 21.04	6 15.74
46	8.7	. .	21.	38.5	. .	. .	. .	. .	11 55.98	45.25	1.38	III.	2	21.630	38 45.94	22.72	5.07	11 9.35	20 3.73
47	8.9	. .	. .	. .	36.	. .	. .	. .	12 36.01	45.25	1.20	IV.	3	39.760	19 47.74	22.90	2.77	11 49.56	1 3.41
48	8.9	. .	12.5	. .	47.5	. .	. .	. .	14 47.49	45.26	1.33	IV.	3	27.930	32 9.51	23.51	4.27	14 0.90	28 13 27.59
49	9.10	. .	. .	. .	42.	. .	. .	. .	7 15 41.99	−45.26	−1.13	IV.	4	48.070	−11 3.98	−23.74	−1.75	7 14 55.60	−27 52 19.47

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847. h.	s.	s.	s.	s.	s.	° ' "	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ' "						"	in.	°	°	°	°	°
Zone 98	Mar. 5, 6 10	67 2 32.3	47.0	38.0	40.2	34.5	36.0	38.37[a]	30.372	43.0	38.0	42.0	. .	42.0
	7 49	. . .	. .	. .	. .	. .	. .	. .	30.390	40.5	34.0			
	8 20	41.7	58.0	48.5	50.0	47.4	44.6	48.74[b]	30.392	39.5	32.0			
	10 26	. . .	. .	. .	. .	. .	. .	. .	30.402	38.5	30.5			
	11 0	. . .	. .	. .	. .	. .	. .	. .	30.420	38.0	30.0			

REMARKS.

March 5, $8^h 18^m$, instrument disturbed by a blow from the observer's head, occasioning a change in the reading and in the nadir point. Observations suspended from $8^h 25^m$ to $10^h 25^m$. Readings of barometer, &c., at $10^h 20^m$; at 11^h, interrupted by clouds.

(98) 23. Transit over T. VI assumed as $54^s.5$, not $4^s.5$.

(98) 26. Transits over T.'s III and IV assumed as $4^s.5$ and 22^s, not 45^s and $2^s.2$, and minutes as 48, not 49, to agree with Arg. Z. 349, 6, and Brisbane 1390.

([a]) Corr. for runs $=0''.37$.

([b]) Corr. for runs $=0''.37$.

ZONE 98. MARCH 5. P. $D_0 = -27° 40' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	. .	. .	. .	15.	. .	. .	7.	7 16 14.86	−45.27	−1.15	IV.	4	45.857	−13 22.70	−23.90	−2.01	7 15 28.44	−27 54 38.61
51	7.8	. .	. .	. .	. .	44.	. .	. .	17 26.49	45.27	1.37	V.	3	23.583	36 42.95	24.21	4.82	16 39.85	28 18 1.98
52	7	. .	. .	. .	. .	. .	5.	. .	18 30.13	45.27	1.27	VI.	3	33.800	26 1.91	24.50	3.51	17 43.59	7 19.92
53	7	. .	. .	. .	. .	. .	. .	49.5	18 56.96	45.27	1.51	VII.	1	9.980	50 56.25	24.62	6.57	18 10.18	28 32 17.44
54	8.9	. .	. .	. .	. .	. .	. .	54.	20 1.72	45.28	1.14	VII.	4	46.835	12 20.62	24.92	1.89	19 15.30	27 53 37.43
55	8	. .	. .	. .	. .	. .	36.	. .	21 1.22	45.28	1.14	VI.	4	48.437	10 40.77	25.18	1.71	20 14.80	27 51 57.66
56	7	. .	. .	. .	35.5	. .	. .	. .	22 35.52	45.28	1.25	IV.	3	36.873	22 48.77	25.61	3.12	21 48.99	28 4 7.50
57	9	. .	. .	. .	. .	. .	21.5	. .	22 46.60	45.28	1.31	VI.	3	30.790	29 10.75	25.66	3.90	22 0.01	10 30.31
58	8	. .	38.	. .	. .	. .	. .	. .	25 13.07	45.29	1.53	II.	1	9.860	51 2.71	26.32	6.58	24 26.25	32 25.61
59	9	. .	. .	17.	. .	. .	. .	. .	25 17.03	45.29	1.52	III.	1	10.755	50 7.04	26.42	6.47	24 30.22	31 29.93
60	9	. .	. .	. .	. .	. .	12.	. .	25 37.03	45.29	1.47	VI.	2	15.935	44 43.41	26.43	5.81	24 50.27	26 5.65
61	9.10	. .	. .	14.	. .	. .	. .	. .	27 31.46	45.30	1.27	III.	3	35.540	24 12.19	26.95	3.30	26 44.89	5 32.44
62	8.9	. .	. .	. .	. .	4.	. .	. .	27 46.55	45.30	1.22	V.	3	40.510	19 1.07	27.01	2.68	27 0.03	0 20.76
63	9	. .	. .	. .	. .	56.	. .	. .	28 38.49	45.30	1.36	V.	3	26.790	33 21.59	27.25	4.40	27 51.83	14 43.24
64	9	. .	. .	. .	49.5	. .	. .	. .	29 49.55	45.31	1.32	IV.	3	31.095	28 51.36	27.57	3.86	29 2.92	10 12.79
65	5.6	. .	. .	. .	. .	26.	. .	0.5	30	45.31									
66	9.10	. .	. .	. .	. .	. .	. .	51.	30 58.66	45.31	1.27	VII.	3	36.610	23 5.77	27.89	3.15	30 12.08	4 26.81
67	8	. .	. .	. .	53.	. .	. .	. .	32 53.04	45.32	1.46	IV.	2	18.035	42 31.68	28.40	5.54	32 6.26	28 23 55.62
68	7.8	21.	38.5	56.	. .	. .	. .	. .	35 13.33	45.32	1.15	III.	4	48.980	10 6.85	29.04	1.60	34 26.86	27 51 27.49
69	8	46.	. .	21.	. .	. .	. .	. .	37 38.47	45.33	1.48	III.	2	17.440	43 9.02	29.70	5.62	36 51.66	28 24 34.34
70	4.5	. .	. .	. .	14.5	. .	. .	. .	38 14.52	45.33	1.27	IV.	3	37.640	22 0.77	29.86	3.02	37 27.92	3 23.65
71	5	. .	. .	. .	. .	. .	9.	. .	38 33.98	45.33	1.58	VI.	1	6.513	54 34.14	29.93	7.03	37 47.07	36 1.10
72	7	12.	29.5	47.	. .	. .	. .	. .	41 4.54	45.34	1.55	III.	1	9.515	51 25.07	30.62	6.64	40 17.65	28 32 52.33
73	9	8.5	26.	44.	. .	. .	. .	. .	43 1.02	45.34	1.24	III.	4	41.530	17 54.21	31.14	2.54	42 14.44	27 59 17.89
74	6	. .	. .	. .	5.	22.	. .	. .	49 4.77	45.36	1.10	IV.	4	57.215	1 30.67	32.77	0.64	48 18.31	42 54.08
75	7	. .	. .	. .	. .	19.	. .	. .	50 1.57	45.36	1.20	V.	4	47.120	12 3.49	33.29	1.83	49 15.01	53 28.61
76	7	. .	. .	. .	. .	10.5	. .	. .	50 53.08	45.36	1.14	V.	4	53.180	5 43.54	33.26	1.13	50 6.58	47 7.93
77	7.8	. .	. .	. .	12.	. .	. .	. .	52 12.00	45.36	1.23	IV.	4	44.015	15 18.29	33.60	2.22	51 25.41	27 56 44.11
78	7	18.	35.	52.5	. .	. .	. .	. .	54 10.02	45.36	1.29	III.	4	39.455	20 4.41	34.13	2.80	53 23.37	28 1 31.34
79	8	. .	53.5	11.	. .	. .	. .	. .	56 28.42	45.37	1.27	III.	4	41.270	18 10.58	34.75	2.56	55 41.78	27 59 37.89
80	9	. .	. .	. .	2.5	. .	. .	. .	57 2.49	45.37	1.20	IV.	4	48.110	11 1.53	34.90	1.75	56 15.92	52 28.18
81	8.9	. .	. .	. .	12.	. .	. .	. .	58 12.00	45.37	1.26	IV.	4	43.015	16 21.01	35.21	2.35	57 25.37	27 57 48.57
82	9.10	. .	. .	. .	. .	. .	2.	. .	7 59 27.13	45.37	1.35	VI.	3	33.907	25 55.20	35.55	3.49	7 58 40.41	28 7 24.24
83	9.10	. .	. .	23.	. .	. .	. .	. .	8 1 40.47	45.37	1.39	III.	3	29.700	30 18.44	36.13	4.04	8 0 53.71	28 11 48.61
84	8	. .	. .	. .	20.	. .	. .	. .	2 19.99	45.38	1.22	IV.	4	47.267	11 54.46	36.31	1.82	1 33.39	27 53 22.59
85	9	. .	54.5	. .	30.	. .	. .	. .	5 29.71	45.38	1.33	IV.	3	37.270	22 24.11	37.14	2.97	4 43.00	28 3 54.22
86	7	. .	. .	. .	41.5	. .	. .	. .	6 41.53	45.38	1.61	IV.	1	9.082	51 52.49	37.45	6.71	5 54.54	28 33 26.65
87	8	. .	3.	20.7	. .	. .	. .	. .	9 38.02	45.38	1.30	III.	4	41.165	18 17.10	38.24	2.57	8 51.34	27 59 47.91
88	9.10	. .	. .	49.	. .	. .	. .	. .	15 6.45	45.38	1.29	III.	4	42.157	17 14.88	38.62	2.44	10 19.78	58 45.94
89	9.10	. .	. .	59.	. .	. .	. .	. .	14 16.43	45.39	1.25	III.	4	47.183	11 59.67	39.45	1.84	13 29.79	53 30.96
90	8	. .	. .	. .	. .	45.	. .	. .	14 27.56	45.39	1.27	V.	4	44.580	14 42.85	39.50	2.15	13 40.90	27 56 14.50
91	8.9	. .	. .	42.	. .	. .	. .	. .	11 59.46	45.39	1.36	III.	3	36.083	23 38.07	39.90	3.22	15 12.71	28 5 11.19
92	7	. .	. .	24.	40.	. .	. .	. .	16 40.75	45.39	1.39	IV.	3	32.590	27 17.57	40.07	3.66	15 53.97	8 51.30
93	8	. .	. .	. .	. .	27.	. .	. .	17 9.44	45.39	1.59	V.	1	12.730	48 3.70	40.20	6.23	16 22.46	29 40.13
94	7	. .	. .	8.	25.	. .	. .	. .	18 25.26	−45.39	−1.59	IV.	1	13.150	47 37.21	−40.53	−6.19	8 17 38.28	−28 29 13.93
95	9	. .	. .	. .	. .	. .	23.	. .	8 25 48.21	. .	. .	VI.	4	45.830	−13 24.02				

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(98) 59. Transit over T. IV assumed as recorded over T. III.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 99. MARCH 5. P. $D_0 = -27° 40' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8.9	27.	. .	2.	. .	. .	. .	. .	10 26 19.42	. .	. .	III.	3	25.930	−34 14.92	−69.71	−4.54	. . .	−28 16 19.17
2	9	47.	. .	23.	. .	. .	. .	. .	29 39.95	. .	. .	III.	2	21.395	39 0.82	70.30	5.15	. . .	28 21 6.27
3	7	. .	. .	. .	21.	38.5	. .	. .	30 21.03	. .	. .	V.	4	41.870	17 32.62	70.42	2.44	. . .	27 59 35.48
4	8	. .	. .	. .	31.	. .	. .	. .	31 31.04	. .	. .	IV.	3	23.337	36 58.26	70.61	4.87	. . .	28 19 3.74
5	7	21.3	38.5	56.3	13.5	. .	. .	. .	37 13.61	. .	. .	IV.	3	25.827	34 21.77	71.58	4.55	. . .	16 27.90
6	9	. .	. .	. .	. .	39.	. .	. .	41 21.50	. .	. .	V.	.	F. W.	. . .	72.26	4.00		
7	8	. .	. .	. .	. .	56.5	. .	. .	42 38.99	. .	. .	V.	3	23.970	36 18.60	72.48	4.80	. . .	18 25.88
8	8	. .	. .	. .	1.	. .	. .	. .	51 1.03	. .	. .	IV.	2	14.275	46 27.79	73.80	6.10	. . .	28 37.69
9	7	. .	. .	. .	47.	5.	. .	. .	10 51 47.24	. .	. .	V.	2	16.723	43 54.15	73.92	5.79	. . .	28 26 3.86
10	6.7	. .	36.	54.	11.	28.3	. .	. .	11 0 11.05	. .	. .	V.	4	46.517	−12 41.37	−75.18	−1.84	. . .	−27 54 48.39

ZONE 100. MARCH 10. C. $D_0 = -30° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	37.2	55.	. .	6 58 19.30	+15.45	. .	V.	4	37.688	−22 0.09	−16.44	−2.85	. . .	−30 33 19.38
2	8	. .	. .	41.	59.1	16.8	. .	. .	6 59 58.97	15.45	. .	IV.	4	44.861	14 25.16	16.89	1.79	. . .	25 43.84
3	9	. .	. .	52.1	. .	. .	. .	3.7	7 1 10.03	15.45	. .	IV.	3	37.196	22 28.69	17.22	2.92	. . .	33 48.83
4	9.10	. .	. .	51.	. .	25.	. .	. .	3 7.99	15.45	. .	IV.	3	28.387	31 41.39	17.75	4.24	. . .	43 3.38
5	9	. .	. .	4.7	21.2	39.5	57.1	. .	4 21.67	15.45	. .	IV.	2	19.122	41 23.53	18.09	5.65	. . .	52 47.27
6	8	. .	. .	23.8	41.7	59.3	17.1	. .	5 1.49	15.46	. .	IV.	3	36.622	23 4.64	18.45	3.01	. . .	34 26.10
7	9	. .	. .	. .	12.	29.	. .	. .	7 11.56	15.46	. .	IV.	3	28.649	31 24.83	18.87	4.20	. . .	42 47.90
8	8.9	. .	. .	. .	. .	4.5	22.3	39.3	7 46.18	15.46	. .	V.	3	21.980	38 23.47	19.03	5.21	. . .	49 47.71
9	7	. .	. .	. .	18.2	. .	53.8	11.7	7 9 18.16	+15.46	. .	IV.	4	44.971	−14 18.26	−19.45	−1.77	. . .	−30 25 39.48

ZONE 101. MARCH 18. C. $D_0 = -30° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	24.	41.3	59.3	17.2	. .	. .	7 10 59.40	+ 9.38	+0.57	IV.	3	33.510	−26 19.92	−27.70	−3.47	7 11 9.35	−30 37 51.09
2	9	. .	29.2	. .	5.2	23.7	. .	. .	12 5.34	9.38	0.56	IV.	3	31.291	28 39.19	27.97	3.82	12 15.28	40 20.98
3	8	. .	. .	17.7	. .	53.2	10.4	. .	12 35.21	9.38	0.62	IV.	4	44.385	20 8.97	28.05	2.59	12 45.21	31 29.61
4	9	. .	. .	. .	13.7	31.3	. .	. .	23 13.57	9.34	0.65	IV.	4	50.321	8 43.01	30.73	0.99	23 23.56	20 14.73
5	7	. .	. .	. .	42.5	0.3	18.7	36.4	24 42.65	9.33	0.56	IV.	3	32.441	27 27.04	31.10	3.63	24 52.54	39 1.77
6	9	. .	58.2	16.4	34.	. .	. .	. .	30 34.17	9.31	0.47	IV.	2	13.094	47 41.85	32.56	6.59	30 43.95	59 21.00
7	8.9	. .	. .	. .	. .	. .	53.2	11.5	31 17.72	9.31	0.62	VI.	4	43.419	15 55.48	32.74	1.99	31 27.65	27 30.21
8	9	. .	. .	46.2	4.	. .	. .	. .	38 4.09	9.29	0.46	IV.	2	13.823	46 55.96	34.42	6.48	38 13.84	58 36.86
9	9	. .	. .	. .	. .	. .	40.	. .	38 4.17	9.29	0.49	VI.	2	20.489	39 57.73	34.42	5.44	38 13.95	51 37.59
10	8	. .	56.1	13.8	32.	49.8	7.1	. .	42 31.79	9.27	0.63	IV.	4	47.672	11 28.93	35.52	1.37	42 41.69	23 5.82
11	7.8	. .	33.1	50.7	8.3	26.4	44.2	. .	49 8.56	9.26	0.59	IV.	3	39.662	19 53.94	37.17	2.56	49 18.41	31 33.67
12	9	. .	. .	. .	. .	30.2	. .	. .	50 12.33	9.25	0.61	V.	4	44.721	14 33.87	37.44	1.81	50 22.19	26 13.12
13	8.9	. .	. .	. .	7.8	25.5	44.2	. .	53 7.99	9.25	0.62	IV.	4	45.855	13 22.82	38.16	1.64	53 17.86	25 2.62
14	9	. .	. .	. .	8.3	. .	44.5	. .	54 8.53	9.25	0.51	IV.	3	24.622	35 37.51	38.41	4.81	54 18.29	47 20.73
15	9	. .	. .	39.2	55.	13.7	. .	. .	55 55.34	9.24	0.53	IV.	3	28.478	31 35.67	38.87	4.23	55 5.11	43 18.77
16	8.9	. .	. .	. .	. .	59.3	18.	36.2	56 42.01	9.24	0.51	V.	3	24.072	36 12.20	39.07	4.90	55 51.76	47 56.17
17	9	. .	. .	. .	22.7	40.7	. .	26.	7 59 22.66	9.24	0.63	IV.	4	48.234	10 53.82	39.74	1.28	7 59 32.53	22 34.84
18	9	. .	. .	3.3	. .	. .	56.2	. .	8 3 20.83	9.23	0.55	IV.	3	32.744	27 7.84	40.72	3.59	8 2 30.61	38 52.15
19	8.9	. .	14.	31.3	49.2	. .	. .	. .	8 49.37	9.22	0.62	IV.	4	46.791	12 24.13	42.10	1.49	8 59.21	24 7.72
20	8	. .	6.2	24.2	42.1	. .	17.2	. .	9 42.33	9.22	0.61	IV.	4	43.038	16 19.56	42.32	2.05	9 52.16	28 3.93
21	9	. .	. .	. .	45.	. .	. .	. .	9 44.99	9.22	0.63	IV.	4	48.657	10 27.22	42.33	1.23	9 54.84	22 10.78
22	8	. .	31.3	50.4	. .	. .	44.2	. .	8 56 7.96	9.21	0.61	IV.	4	45.413	13 50.79	53.96	1.70	8 56 17.78	25 46.45
23	9	. .	. .	52.1	. .	28.	. .	4.2	9 6 10.14	+ 9.23	+0.47	IV.	2	17.586	−42 59.93	−56.47	−5.90	9 6 19.84	−30 55 2.30

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 100	Mar. 10, 7 0	69 32 26.1	41.1	28.9	37.7	26.5	33.2	32.25	30.100	50.2	46.6	49.0	48.5	50.0
	7 9	. .	. .	. .	. .	. .	. .	. .	. .	. .	45.9			
Zone 101	Mar. 18, 7 10	69 32 35.0	50.1	37.5	45.1	35.0	40.1	40.47	. .	. .	46.4	48.5	45.0	42.5
	7 23	. .	. .	. .	. .	. .	. .	. .	30.152	46.6	46.1			
	7 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	46.3			
	7 59	. .	. .	. .	. .	. .	. .	. .	30.160	46.5	45.9			

REMARKS.

Mar. 10, 7^h 10^m. Interrupted by clouds.

Mar. 18. Hazy; night unfavorable; many stars doubtless obscured by the haze.

(100) 6. Transits over T.'s III, V, and VI assumed as $43^s.8$, $19^s.3$, and $37^s.8$, respectively, and minutes as 6.

(101) 3. Micrometer reading assumed as $39^r.385$, not $44^r.385$.

(101) 15. Transit observation of T. III assumed as $37^s.2$ instead of $39^s.2$; and minutes as 54 instead of 55.

(101) 16. Minutes assumed as 55 instead of 56.

(101) 17. Transit across T. VII assumed at 16^s instead of 26^s.

(101) 18. Minutes assumed at 2 instead of 3.

ZONE 102. MARCH 22. P. $D_0 = -28° 18' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	..	23.	41.	..	..	..	..	7 31 58.32	+ 7.77	+1.08	III.	4	53.580	− 5 18.53	− 0.60	−1.06	7 32 7.17	−28 24 0.19
2	7	38.3	56.	13.5	..	..	..	..	33 31.06	7.76	1.03	III.	3	27.830	32 15.71	0.98	4.27	33 39.85	51 0.96
3	9	..	..	..	47.3	..	..	..	33 47.35	7.76	1.02	IV.	3	23.833	36 26.89	1.06	4.79	33 56.13	55 12.74
4	9	51.	8.	25.5	..	..	..	..	36 43.18	7.75	1.08	III.	4	53.030	5 52.88	1.79	1.12	36 52.01	24 35.79
5	3	..	3.3	21.	38.3	..	..	..	37 38.43	7.74	1.05	IV.	4	42.173	17 13.87	2.02	2.45	37 47.22	35 58.34
6	9	..	..	..	..	18.	..	..	38 0.46	7.74	1.07	V.	4	47.930	11 12.57	2.11	1.75	38 9.27	29 56.43
7	8	..	34.	51.5	9.	..	..	..	40 9.05	7.74	1.06	IV.	4	45.190	14 4.72	2.64	2.08	40 17.85	28 32 49.44
8	9	..	20.	..	..	..	..	..	41 55.20	7.73	1.01	II.	2	18.730	41 47.49	3.08	5.46	42 3.94	29 0 36.03
9	9	..	9.	..	..	..	..	..	43 44.10	7.72	1.06	II.	4	44.197	15 6.74	3.53	2.20	43 52.88	28 33 52.47
10	7	..	..	55.	12.5	..	..	..	44 12.55	7.72	1.03	IV.	3	37.007	22 40.42	3.65	3.10	44 21.30	41 27.17
11	8	29.	46.3	4.	..	..	..	..	47 21.55	7.71	1.02	III.	3	28.615	31 26.59	4.44	4.18	47 30.28	50 15.21
12	9	..	34.	..	9.	..	..	..	49 9.06	7.70	1.06	IV.	4	48.165	10 58.08	4.87	1.70	49 17.82	29 44.65
13	9	..	..	..	53.	..	..	..	50 53.05	7.70	1.02	IV.	3	28.225	31 51.49	5.31	4.23	51 1.77	50 41.03
14	9	..	..	..	..	..	..	47.	50 54.27	7.70	1.01	VII.	3	26.065	34 7.21	5.31	4.50	51 2.98	52 57.02
15	8	..	..	54.	11.5	..	..	..	53 11.56	7.70	1.00	IV.	3	22.540	37 48.22	5.88	4.96	53 20.26	28 56 39.06
16	7.8	..	..	..	55.3	13.	..	..	53 55.34	7.69	0.99	V.	2	13.310	47 28.35	6.05	6.16	54 4.02	29 6 [illegible]0.56
17	7	..	..	..	..	16.5	..	..	54 58.91	7.69	1.02	V.	3	33.700	26 8.13	6.32	3.53	55 7.62	28 44 57.98
18	8	..	..	48.7	..	..	..	..	56 6.26	7.68	1.02	III.	3	33.030	26 49.53	6.60	3.62	56 14.96	45 39.75
19	9	..	..	..	35.	..	..	..	56 35.05	7.68	1.01	IV.	3	29.190	30 50.95	6.73	4.10	56 43.74	28 49 41.78
20'	8	..	..	12.	..	..	..	..	57 29.58	7.68	0.98	III.	2	14.410	41 5.49	6.95	5.37	57 38.24	59 57.81
21	9	..	..	..	11.5	..	..	4.4	7 57 51.34	7.68	1.02	IV.	3	33.557	26 16.97	7.05	3.55	7 58 0.04	28 45 7.57
22	6	50.3	8.	25.7	43.	..	..	..	8 0 43.16	7.67	0.98	IV.	2	16.810	43 48.49	7.74	5.71	8 0 51.81	29 2 41.94
23	9.10	52.	..	27.	..	..	..	..	2 44.61	7.67	1.01	III.	3	30.553	29 25.05	8.25	3.93	2 53.29	28 48 17.23
24	9	..	..	..	26.	..	..	..	3 26.05	7.67	1.00	IV.	3	27.450	32 40.17	8.41	4.32	3 34.72	28 51 32.90
25	9	..	..	..	..	32.	..	..	4 14.36	7.67	0.99	V.	2	18.910	41 36.77	8.62	5.43	4 23.02	29 0 30.82
26	7	..	..	..	46.3	3.5	..	..	5 46.13	7.66	1.05	IV.	4	49.737	9 19.37	8.99	1.50	5 54.84	28 28 9.86
27	9	..	..	..	..	54.	..	..	7 54.02	7.66	1.04	V.	4	43.006	16 21.45	9.49	2.33	8 2.72	35 13.27
28	9	..	..	..	..	2.	..	..	8 44.44	7.66	1.03	V.	4	41.477	17 57.47	9.73	2.53	8 53.13	36 59.73
29	9	..	..	..	..	..	1.	..	9 25.95	7.65	1.02	VI.	3	36.405	23 18.68	9.90	3.18	9 34.62	42 11.76
30	7	..	34.3	51.7	9.2	..	..	..	11 9.30	7.65	1.02	IV.	3	38.350	21 16.36	10.31	2.94	11 17.97	28 40 9.61
31	6	..	..	..	..	..	1.	..	11 25.76	7.65	0.95	VI.	1	6.160	54 56.25	10.38	7.10	11 34.36	29 13 53.73
32	7	..	..	..	..	54.	12.	..	12 36.59	7.65	0.97	V.	2	17.290	43 18.63	10.68	5.65	12 45.21	29 2 14.96
33	7	..	..	..	..	37.5	..	..	13 39.89	7.65	0.99	V.	3	26.420	33 45.05	10.93	4.46	13 48.53	28 52 40.44
34	7	..	..	..	..	..	37.7	..	14 2.52	7.64	0.97	VI.	2	15.407	45 16.74	11.03	5.89	14 11.13	29 4 13.66
35	7	..	39.5	57.	..	..	..	..	16 14.58	7.64	1.04	III.	4	48.393	10 43.84	11.57	1.66	16 23.26	28 29 37.07
36	6	..	..	..	..	35.	..	..	16 17.31	7.64	0.95	V.	1	7.110	53 56.54	11.58	6.99	16 25.90	29 12 55.11
37	6	..	..	12.	30.	..	4.5	..	17 29.68	7.64	1.04	IV.	4	48.670	10 26.35	11.88	1.63	17 38.36	28 29 19.86
38	8	..	..	26.5	..	2.	..	..	18 44.25	7.63	1.04	V.	4	49.703	9 21.44	12.19	1.50	18 52.92	28 15.13
39	6	39.	56.3	14.	31.5	..	..	..	20 31.52	7.63	1.00	IV.	3	35.173	24 35.60	12.61	3.34	20 40.15	43 31.55
40	9	..	..	..	..	40.	..	..	21 22.37	7.63	0.98	V.	2	23.370	36 57.06	12.82	4.85	21 30.98	55 54.73
41	7	48.7	..	24.	41.3	..	..	..	25 41.43	7.62	0.98	IV.	3	27.530	32 35.09	13.87	4.31	25 50.03	51 33.27
42	8.9	..	16.	34.	..	..	..	..	26 51.37	7.62	0.98	III.	3	25.933	34 14.73	14.15	4.52	26 59.97	53 13.40
43	8	..	30.5	..	5.5	..	..	..	28 5.56	7.62	1.02	IV.	4	43.797	15 31.90	14.45	2.24	28 14.20	34 28.59
44	7	..	..	..	42.5	..	..	..	28 42.47	7.62	1.04	IV.	4	54.583	4 15.64	14.61	0.90	28 51.13	28 23 11.15
45	7	..	..	..	..	..	44.3	..	29 9.11	7.62	0.96	VI.	2	13.995	41 31.40	14.71	5.46	29 17.69	29 0 31.57
46	7	45.	2.3	20.3	..	..	..	..	32 37.65	7.62	0.98	III.	3	29.960	30 2.07	15.56	4.00	32 46.25	28 49 1.63
47	7	..	..	..	0.	17.	..	..	32 59.73	7.62	0.98	IV.	3	32.450	27 26.47	15.64	3.68	33 8.33	28 46 25.79
48	3	..	..	..	..	39.	56.	..	33 21.10	7.62	0.96	VI.	2	17.793	42 46.74	15.72	5.59	33 29.68	29 1 48.05
49	9	..	..	..	..	..	8.3	..	8 34 33.32	+ 7.61	+1.01	VI.	4	47.060	−12 7.00	−15.99	−1.84	8 34 41.94	−28 31 4.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 102	Mar. 22,	7 30	67 39 59.3	73.0	59.6	68.5	58.2	66.4	64.17	29.867	52.0	48.7	52.0	50.5	
		8 0	..	..	..	..	..	..	..	29.868	51.1	47.9			
		9 8	..	..	..	..	..	..	..	29.888	49.7	45.0	50.5	49.5	52.0

REMARKS.

March 22. 9^h 9^m, cloudy.

(102) 20. Micrometer reading assumed as $19^r.410$, not $14^r.410$.

(102) 21. Transit over T. IV rejected.

(102) 33. Transit over T. V assumed as $57^s.5$ instead of $37^s.5$.

(102) 45. Micrometer reading assumed as $18^r.995$, not $13^r.995$.

ZONE 102. MARCH 22. P. $D_0 = -28° 18' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	..	5.7	23.	40.7	..	..	..	8 36 40.75	+ 7.61	+0.95	IV.	2	15.233	−40 13.96	−16.52	−5.31	8 36 49.31	−28 59 15.79
51	9	..	..	..	..	48.	..	..	37 30.47	7.61	1.02	V.	4	49.075	10 0.89	16.72	1.58	37 39.10	28 59.19
52	8.9	..	..	..	..	..	49.7	..	38 14.69	7.61	1.01	VI.	4	43.583	15 45.13	16.90	2.26	38 23.31	28 34 44.29
53	7	..	..	54.	..	..	..	..	40 11.60	7.61	0.93	III.	1	7.390	53 38.46	17.36	6.95	40 20.14	29 12 42.77
54	7	..	..	..	..	30.5	48.	..	40 12.81	7.61	0.94	V.	1	9.090	51 52.18	17.37	6.72	40 21.36	29 10 56.27
55	5.6	44.	1.5	19.	36.5	..	..	..	43 36.62	7.61	0.97	IV.	3	24.840	35 23.70	18.17	4.66	43 45.20	28 54 26.53
56	9	..	..	..	..	14.	..	..	43 56.42	7.61	0.98	V.	3	35.970	23 45.72	18.25	3.24	44 5.01	42 47.21
57	8	..	..	..	21.3	39.	..	..	45 21.37	7.61	0.96	IV.	3	25.160	35 3.81	18.58	4.62	45 29.94	54 7.01
58	8.9	..	..	..	..	..	39.	..	46 4.05	7.61	1.02	VI.	4	53.265	5 38.03	18.75	1.09	46 12.68	24 37.87
59	7.8	58.5	16.	33.3	..	..	..	..	49 51.07	7.61	0.96	III.	3	26.497	33 39.53	19.65	4.44	49 59.64	52 43.62
60	7	..	..	..	..	18.	..	..	50 0.41	7.61	0.98	V.	3	32.624	27 15.69	19.69	3.66	50 9.00	28 46 19.04
61	9	..	50.	7.5	..	..	..	..	52 25.15	7.61	0.94	III.	2	17.085	43 31.18	20.26	5.68	52 33.70	29 2 37.12
62	9	..	..	..	..	44.	..	..	52 26.43	7.61	0.98	V.	3	36.960	22 43.55	20.26	3.09	52 35.02	28 41 46.90
63	6.7	..	0.5	17.	34.5	..	..	..	8 58 34.87	7.61	1.03	IV.	4	52.650	6 16.84	21.69	1.16	8 58 43.51	25 19.69
64	8.9	25.5	43.	0.3	..	..	..	..	9 0 18.01	7.61	0.97	III.	3	37.273	22 23.48	22.09	3.05	9 0 26.59	28 41 28.62
65	6.7	..	28.3	46.	3.5	..	..	..	3 3.57	7.61	0.92	IV.	1	7.503	53 31.67	22.71	6.95	3 12.10	29 12 41.33
66	8.9	..	54.5	12.	..	..	..	..	6 29.59	7.61	0.97	III.	3	33.207	26 38.55	23.50	3.58	6 38.17	28 45 45.63
67	6	..	..	..	48.5	6.	..	..	6 48.45	7.61	0.93	IV.	2	16.845	43 46.30	23.57	5.72	6 56.99	29 2 55.59
68	9	..	..	..	..	..	52.	..	9 8 16.91	+ 7.61	+0.96	VI.	3	29.137	−30 54.59	−23.90	−4.12	9 8 25.48	−28 50 2.61

ZONE 103. MARCH 24. C. $D_0 = -29° 33' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	..	5.3	..	41.3	59.	17.	..	7 53 41.22	+ 8.09	+0.83	IV.	3	33.477	−26 21.98	− 4.76	−3.52	7 53 50.14	−30 0 20.26
2	9	..	13.3	31.	..	6.7	24.	..	53 48.76	8.09	0.84	IV.	3	35.618	24 7.61	4.80	3.22	53 57.69	29 58 5.63
3	9	..	..	..	..	45.	3.	21.	55 27.40	8.08	0.78	V.	1	23.529	36 46.03	5.23	4.93	55 36.26	30 10 46.19
4	9	..	..	..	28.2	46.	4.2	22.	55 28.40	8.08	0.77	IV.	1	21.922	38 26.48	5.23	5.15	55 37.25	30 12 26.86
5	9	..	52.2	10.	..	..	3.5	..	7 59 27.84	8.07	0.85	IV.	3	37.534	22 7.48	6.27	2.94	7 59 36.76	29 56 6.69
6	8	..	20.	37.5	55.5	13.6	31.2	..	8 2 55.58	8.06	0.86	IV.	3	40.391	19 8.35	7.14	2.53	8 3 4.50	53 8.02
7	9	..	56.2	14.	32.	49.4	..	..	4 31.78	8.05	0.91	IV.	4	50.606	8 25.01	7.55	1.11	4 40.74	42 23.67
8	9	..	7.	24.5	42.8	1.1	18.0	..	5 42.70	8.05	0.90	IV.	4	47.155	12 1.42	7.87	1.59	5 51.65	46 0.88
9	9.10	..	..	..	..	..	16.2	..	5 40.74	8.05	0.86	VI.	3	40.756	18 45.58	7.86	2.49	5 49.65	29 52 45.93
10	9	..	..	33.	50.7	..	..	..	8 50.77	8.04	0.71	IV.	2	10.814	50 4.84	8.66	6.80	8 59.52	30 24 10.30
11	9	..	..	..	..	6.2	24.	41.5	8 48.36	8.04	0.84	V.	4	35.854	23 49.99	8.65	3.17	8 57.24	29 57 51.81
12	9	..	..	..	..	..	10.	..	9 34.45	8.04	0.79	VI.	3	26.852	33 17.77	8.85	4.44	9 43.28	30 7 21.06
13	9	..	..	..	..	..	13.7	32.	9 38.38	8.04	0.79	VI.	3	25.621	34 35.14	8.87	4.62	9 47.21	30 8 38.63
14	9	..	..	..	..	..	17.7	..	11 42.20	8.04	0.83	VI.	3	34.231	25 34.99	9.39	3.41	11 51.07	29 59 37.79
15	9.10	..	..	..	..	..	34.	50.8	11 58.04	8.04	0.87	VI.	3	41.728	17 44.61	9.45	2.35	12 6.95	29 51 46.41
16	8	..	42.2	0.0	18.	..	..	..	17 17.90	8.03	0.74	IV.	2	15.518	45 9.78	10.78	6.09	17 26.67	30 19 16.65
17	8	..	51.3	..	27.2	45.5	3.	..	17 27.33	8.03	0.86	IV.	4	38.941	20 36.46	10.82	2.73	17 36.22	29 54 40.01
18	9.10	..	..	1.3	19.2	..	..	..	21 19.17	8.02	0.80	IV.	3	25.412	34 48.05	11.78	4.65	21 27.99	30 8 54.48
19	9	..	7.6	25.3	43.	..	..	..	22 43.14	8.02	0.74	IV.	2	13.699	47 3.83	12.11	6.36	22 51.90	30 21 12.30
20	9	..	..	..	1.	19.3	..	..	23 1.27	8.02	0.87	IV.	4	41.308	18 8.26	12.19	2.40	23 10.16	29 52 12.85
21	8.9	..	..	..	..	53.	10.6	..	23 35.20	8.02	0.89	V.	4	43.792	15 32.09	12.33	2.03	23 44.11	49 36.45
22	9.10	..	..	59.	17.	..	52.	..	27 16.78	8.01	0.86	IV.	3	37.753	21 53.62	13.22	2.92	27 25.65	29 55 59.76
23	10	..	..	13.8	..	..	7.2	..	28 31.64	8.01	0.82	IV.	3	31.131	28 49.11	13.53	3.84	28 40.47	30 2 56.48
24	8.9	..	..	..	56.2	14.8	31.5	..	29 56.40	8.01	0.82	IV.	3	29.352	30 40.85	13.87	4.10	30 5.23	4 48.82
25	8.9	..	..	..	..	9.2	27.	..	30 51.42	8.01	0.80	V.	3	25.762	34.26.10	14.09	4.61	31 0.23	30 8 34.80
26	8.9	..	..	..	..	..	..	7.	8 31 13.68	+ 8.00	+0.85	VII.	3	35.212	−24 33.39	−14.18	−3.26	8 31 22.53	−29 58 40.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(102) 50. Micrometer reading assumed as 20r.233, not 15r.233.

March 24. Moon bright; a light mist over the river and in the valley.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 103	Mar. 24, 7 50	68 54 59.2	72.1	60.5	69.8	57.5	66.8	64.32	..	..	..	52.7	51.5	52.5
	8 2	..	..	..	..	..	..	..	30.002	52.4	46.9			
	8 21	..	..	..	..	..	..	..	..	..	45.1			
	8 40	..	..	..	..	..	..	..	..	..	44.2			
	9 0	59.0	72.1	60.0	69.1	58.0	65.9	64.02	..	..	..	51.3	49.7	
	9 3	..	..	..	..	..	..	..	30.004	50.5	43.1			
	9 40	..	..	..	..	..	..	..	30.008	49.9	42.2			
	10 0	58.1	72.4	60.1	70.0	57.4	65.9	63.98	..	..	41.2	49.5	46.5	
	10 19	..	..	..	..	..	..	..	30.008	49.5	40.5			

ZONE 103. MARCH 24. C. $D_0 = -29° 33' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
27	9	. .	. .	. .	. .	51.	9.5	25.3	8 32 33.10	+ 8.00	+0.88	V.	4	41.761	−17 39.47	−14.50	−2.34	8 32 41.98	−29 51 46.31
28	8.9	. .	5.7	23.1	41.5	59.	16.5	. .	37 41.19	8.00	0.93	IV.	4	51.051	7 57.04	15.72	1.03	37 50.12	29 42 3.79
29	8	. .	. .	. .	. .	59.7	17.3	. .	38 41.72	8.00	0.71	V.	2	8.985	51 59.77	15.94	7.05	38 50.43	30 26 12.76
30	9.10	. .	15.6	33.4	51.	. .	. .	. .	40 51.11	8.00	0.86	IV.	4	38.161	21 25.52	16.46	2.83	40 59.97	29 55 34.81
31	9.10	. .	. .	57.	. .	. .	. .	. .	42 14.73	8.00	0.92	III.	4	48.706	10 24.03	16.79	1.35	42 23.65	44 32.17
32	9	. .	. .	. .	40.1	58.	15.8	. .	42 40.26	8.00	0.94	IV.	4	53.192	5 42.92	16.89	0.72	42 49.20	39 50.53
33	8.9	. .	. .	. .	52.5	9.8	27.8	. .	43 52.30	8.00	0.88	IV.	3	42.032	17 25.23	17.18	2.30	44 1.18	51 34.71
34	9	. .	37.8	55.6	13.	. .	48.2	. .	49 13.12	7.99	0.86	IV.	3	36.699	22 59.75	18.44	3.05	49 21.97	29 57 11.24
35	9	. .	. .	6.5	. .	42.5	. .	. .	50 24.49	7.99	0.81	IV.	3	26.495	33 40.04	18.72	4.50	50 33.29	30 7 53.26
36	9	. .	. .	32.	49.3	. .	25.	. .	51 49.50	7.99	0.73	IV.	2	11.579	49 16.94	19.06	6.69	51 58.22	23 32.69
37	9	. .	. .	40.7	59.3	16.5	. .	. .	54 58.84	7.99	0.82	IV.	3	27.127	33 0.32	19.80	4.40	55 7.65	7 14.52
38	9	. .	. .	. .	10.	27.2	45.2	3.5	8 56 9.71	7.99	0.72	IV.	2	9.478	51 28.89	19.84	6.99	8 56 18.42	30 25 45.72
39	7	. .	50.3	8.2	26.	43.5	1.4	. .	9 3 25.90	7.99	0.92	IV.	4	48.061	10 58.33	21.79	1.41	9 3 34.81	29 45 11.53
40	8.9	. .	. .	49.	6.2	24.4	42.2	. .	31 6.58	8.03	0.84	IV.	3	32.754	26 4.47	27.66	3.44	31 15.45	30 0 25.57
41	9	. .	45.3	3.	20.7	. .	. .	. .	33 20.76	8.03	0.91	IV.	4	44.226	15 5.18	28.12	1.95	33 29.70	29 49 25.25
42	8.9	. .	. .	. .	. .	54.2	12.1	30.	33 36.48	8.03	0.79	V.	3	20.165	40 17.45	28.17	5.44	33 45.30	30 14 41.06
43	8.9	. .	. .	. .	9.5	27.2	44.6	. .	35 9.40	8.03	0.97	IV.	4	55.760	3 1.72	28.47	0.33	35 18.40	29 37 20.52
44	10	. .	. .	58.7	. .	35.5	. .	. .	37 17.10	8.04	0.96	IV.	4	54.347	4 30.56	28.91	0.52	37 26.10	29 38 49.99
45	9.10	. .	42.	. .	19.3	. .	55.	. .	40 19.38	8.04	0.78	IV.	2	18.145	42 24.85	29.57	5.74	40 28.20	30 16 50.16
46	9	. .	. .	. .	47.	. .	22.7	. .	41 47.16	8.05	0.97	IV.	4	55.522	3 16.82	29.86	0.35	41 56.18	29 37 37.03
47	9.10	. .	41.3	58.3	16.5	. .	. .	. .	44 16.53	8.05	0.80	IV.	2	20.688	39 45.18	30.38	5.37	44 25.38	30 14 10.93
48	8.9	. .	53.	10.7	28.	46.	. .	. .	49 28.34	8.07	0.76	IV.	2	12.371	48 27.36	31.44	6.59	49 37.17	22 55.39
49	9	. .	. .	. .	40.2	58.	15.5	. .	49 40.12	8.07	0.82	IV.	3	24.816	35 25.20	31.48	4.76	49 49.01	30 9 51.44
50	8.9	. .	51.8	9.5	27.2	45.	3.	. .	52 27.31	8.08	0.88	IV.	3	35.708	24 1.91	32.05	3.20	52 36.27	29 58 27.16
51	9	. .	. .	39.	56.2	14.1	. .	. .	53 56.44	8.08	0.85	IV.	3	30.631	29 20.48	32.34	3.91	53 5.37	30 3 46.73
52	9	. .	. .	. .	47.	. .	23.	. .	47.26	8.08	0.84	IV.	3	29.511	30 30.81	32.31	4.07	53 56.18	30 4 57.19
53	7	. .	. .	40.2	58.1	15.9	33.6	. .	55 58.09	8.09	0.91	IV.	4	42.420	16 58.45	32.74	2.22	56 7.09	29 51 23.41
54	9.10	. .	. .	46.	. .	. .	. .	. .	58 3.75	8.09	0.92	III.	4	44.410	14 53.64	33.16	1.96	58 12.76	49 18.76
55	9.10	. .	. .	. .	. .	52.5	. .	28.	9 58 34.73	8.10	0.92	V.	4	43.319	16 2.01	33.26	2.12	9 58 43.75	29 50 27.39
56	9	. .	9.	. .	44.7	. .	20.5	. .	10 1 44.77	8.10	0.77	IV.	2	13.087	47 42.29	33.88	6.49	10 1 53.64	30 22 12.65
57	8.9	. .	43.	1.	18.7	36.	. .	. .	3 18.58	8.11	0.82	IV.	3	24.975	35 15.28	34.17	4.73	3 27.51	30 9 44.18
58	9	. .	55.2	13.	. .	48.7	. .	. .	6 30.81	8.12	0.96	IV.	4	52.038	6 55.15	34.77	0.84	6 39.89	29 41 20.76
59	9	. .	11.0	. .	46.3	4.6	. .	. .	7 46.57	8.13	. .	IV.	.	F. W.	. . .	35.01	4.00	7	30
60	9	. .	. .	30.	48.	6.3	. .	. .	8 48.07	8.13	0.74	IV.	2	8.128	52 53.58	35.19	7.24	8 56.94	27 26.01
61	9	. .	. .	. .	3.	20.3	38.	. .	10 2.65	8.14	0.82	IV.	3	24.219	36 2.85	35.43	4.85	10 11.61	10 33.13
62	9	. .	5.8	23.2	41.2	59.5	. .	. .	12 41.33	8.15	0.80	IV.	3	20.244	40 12.29	35.90	5.43	12 50.28	30 14 43.62
63	9	. .	. .	40.1	. .	15.5	33.2	. .	14 57.77	8.15	0.90	IV.	4	38.269	21 18.81	36.30	2.80	15 6.82	29 55 47.91
64	9	. .	. .	16.5	34.2	52.	9.6	. .	15 34.21	8.16	0.91	IV.	4	39.906	19 35.94	36.40	2.56	15 43.28	29 54 4.90
65	9	. .	. .	. .	. .	53.2	11.	. .	16 35.41	8.16	0.83	V.	3	24.640	35 36.63	36.59	4.78	16 44.40	30 10 8.00
66	9	. .	43.6	1.3	19.5	. .	. .	. .	19 19.23	8.17	0.91	IV.	4	41.728	17 41.72	37.08	2.32	19 28.31	29 52 11.12
67	4	. .	33.	51.	8.6	26.4	44.2	. .	21 8.65	8.18	0.78	IV.	3	16.831	43 46.30	37.39	5.94	20 17.61	30 18 19.63
68	9	. .	. .	58.	. .	. .	50.	. .	22 15.17	8.18	0.94	IV.	4	47.228	11 56.91	37.58	1.52	22 24.29	29 46 26.01
69	7	. .	56.5	. .	. .	51.	. .	25.4	22 32.46	8.18	0.92	IV.	4	43.404	15 56.73	37.63	2.09	22 41.56	50 26.45
70	9	. .	. .	59.	. .	34.	. .	. .	33 16.50	8.24	0.95	IV.	4	48.536	10 34.87	39.41	1.35	34 25.69	45 5.63
71	9	. .	. .	. .	. .	. .	59.2	17.	34 23.70	8.24	0.89	VI.	3	36.191	23 32.05	39.59	3.11	34 32.83	29 58 4.75
72	8.9	. .	. .	10.1	. .	46.	. .	22.	36 28.24	8.25	0.86	IV.	3	29.681	30 20.02	39.91	4.05	36 37.35	30 4 53.98
73	9	. .	. .	12.	. .	47.5	. .	23.2	36 29.73	8.25	0.79	VI.	2	16.828	43 47.31	39.92	5.95	36 38.77	18 23.18
74	9	. .	. .	. .	43.	1.	19.	. .	38 43.24	8.26	0.86	IV.	3	30.491	29 29.32	40.27	3.93	38 52.36	4 3.52
75	8.9	. .	10.8	28.6	46.2	. .	. .	. .	10 41 46.36	+ 8.28	+0.81	IV.	2	19.270	−41 14.30	−40.74	−5.59	10 41 55.45	−30 15 50.63

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 103	Mar. 24,	10 41	. .	. .	. .	. .	. .	. .	. .	. .	. .	39.9			
		11 0	68 54 57.5	72.4	60.0	70.6	56.9	65.1	63.75	30.016	49.0	39.5	49.0	48.5	
		11 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	39.9			
		11 30	. .	. .	. .	. .	. .	. .	. .	30.008	48.0	39.7			
		12 0	57.2	72.5	59.8	70.1	57.0	65.5	63.68	30.008	48.0	39.1	47.0	46.5	

REMARKS.

(103) 40. Micrometer reading assumed as 33r.754, not 32r.754.

(103) 51. 53m assumed to belong to next star; this assumed the same as preceding. Differs 1′ in δ from Arg. Z. 363, 79.

(103) 67. Minutes assumed as 20 instead of 21.

(103) 70. Minutes assumed as 34 instead of 33.

ZONE 103. MARCH 24. C. $D_0 = -29° 33' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
76	8.9	. .	. .	. .	9.5	27.2	. .	. .	10 42 51.72	+ 8.28	+0.89	IV.	3	36.770	−22 55.23	−40.80	−3.03	10 42 0.89	−29 57 29.06
77	9	. .	. .	. .	. .	35.2	. .	. .	42 17.43	8.28	0.92	V.	4	42.967	16 23.89	40.83	2.14	42 26.63	29 50 56.86
78	9	. .	23.	41.1	59.	16.9	. .	. .	46 58.91	8.30	0.79	IV.	2	14.461	46 16.11	41.53	6.30	47 8.00	30 20 53.94
79	10	. .	. .	. .	59.?	. .	. .	. .	47 59.00	8.31	0.94	IV.	2	44.658	14 41.47	41.68	1.88	48 8.25	29 49 15.03
80	8.9	. .	. .	19.	37.	. .	12.8	. .	49 36.99	8.32	0.77	IV.	2	11.338	49 32.20	41.92	6.77	49 46.08	30 24 10.89
81	9	. .	37.	54.5	12.5	30.2	. .	. .	57 12.45	8.36	0.88	IV.	3	32.452	27 26.35	42.98	3.66	57 21.69	30 2 2.99
82	8.9	. .	. .	. .	51.5	9.	27.	. .	57 51.46	8.37	1.00	IV.	4	55.665	3 7.73	43.06	0.33	58 0.83	29 37 41.12
83	8	. .	. .	13.	30.9	48.2	6.	. .	10 59 30.67	8.37	0.97	IV.	4	49.122	9 58.07	43.29	1.26	10 59 40.01	44 32.62
84	9.10	. .	. .	. .	. .	39.2	. .	. .	11 1 21.41	8.38	0.90	V.	3	36.772	22 55.35	43.52	3.03	11 1 30.69	29 57 31.90
85	9	. .	. .	. .	36.7	. .	. .	0.5	5 36.87	8.41	0.80	IV.	2	16.198	44 27.11	44.03	6.06	5 46.08	30 19 7.20
86	9.10	. .	. .	. .	38.?	. .	. .	. .	7 38.05	8.43	0.83	IV.	3	21.735	38 38.59	44.28	5.24	7 47.31	13 18.11
87	9	. .	. .	. .	27.	45.	2.6	. .	8 27.11	8.43	0.88	IV.	3	32.679	27 11.92	44.37	3.62	8 36.42	1 49.91
88	9	. .	2.5	20.3	38.3	. .	13.8	. .	11 38.19	8.45	0.84	IV.	3	23.576	36 43.21	44.74	4.96	11 47.48	11 22.91
89	9	. .	27.3	44.7	2.5	. .	38.2	. .	15 2.64	8.47	0.87	IV.	3	29.871	30 8.03	45.12	4.02	15 11.98	4 47.17
90	9	. .	55.2	13.	30.7	. .	. .	. .	15 30.76	8.47	0.88	IV.	3	30.306	29 40.99	45.17	3.96	15 40.11	30 4 20.12
91	9.10	. .	. .	1.1?	. .	. .	. .	. .	20 18.82	8.51	0.99	III.	4	53.185	5 43.28	45.71	0.65	20 28.32	29 40 19.64
92	9	. .	. .	. .	. .	. .	13.5	. .	20 37.84	8.51	0.78	VI.	2	10.850	50 2.52	45.74	6.78	20 47.13	30 24 45.04
93	9.10	. .	43.	1.2	. .	. .	. .	. .	23 18.73	8.53	0.99	III.	4	52.152	6 48.07	46.03	0.77	23 28.25	29 41 24.87
94	9.10	. .	. .	. .	58.?	. .	33.5	. .	23 58.05	8.53	0.97	IV.	4	49.754	9 18.31	46.11	1.11	24 7.55	29 43 55.53
95	5	. .	. .	2.	20.1	38.	55.4	. .	25 19.98	8.54	0.83	IV.	2	19.611	40 52.84	46.26	5.56	25 29.35	30 15 34.66
96	8.9	. .	53.	10.2	28.	46.	. .	. .	27 28.19	8.56	0.93	IV.	4	40.384	19 6.21	46.49	2.47	27 37.68	29 53 45.17
97	8.9	. .	34.9	52.8	10.7	28.	46.3	. .	30 10.54	8.58	0.79	IV.	2	12.378	48 26.92	46.79	6.65	30 19.91	30 23 10.36
98	9	. .	. .	9.	26.2	. .	. .	. .	31 26.52	8.58	0.89	IV.	3	31.733	28 11.27	46.93	3.76	31 35.99	30 2 51.96
99	8.9	. .	. .	. .	. .	41.	58.5	16.2	32 23.15	8.59	1.00	V.	4	54.559	4 17.08	47.04	0.47	32 32.74	29 38 54.59
100	9	. .	. .	32.	. .	7.8	. .	. .	35 49.88	8.62	0.85	IV.	3	23.540	36 45.47	47.41	4.97	35 59.35	30 11 27.85
101	9	. .	23.	41.1	58.8	. .	. .	. .	37 58.77	8.63	0.87	IV.	3	27.436	32 41.05	47.65	4.37	38 8.27	7 23.07
102	9	. .	17.	35.	52.2	10.3	28.1	. .	38 52.53	8.64	0.88	IV.	3	29.035	31 0.54	47.74	4.15	39 2.05	5 42.43
103	8.9	. .	. .	. .	. .	. .	19.7	37.	39 43.76	8.65	0.78	VI.	2	10.362	50 33.40	47.84	6.95	39 53.19	30 25 18.19
104	9	. .	. .	32.	49.2	7.	. .	. .	42 32.00	8.67	0.95	IV.	4	43.927	15 23.74	48.14	1.95	42 41.62	29 50 3.83
105	7	. .	. .	39.6	57.2	15.3	33.	50.5	43 57.36	8.68	0.91	IV.	3	35.192	24 34.40	48.25	3.23	44 6.95	29 59 15.88
106	9	. . .	49.2	. .	25.2	. .	1.	. .	46 25.16	8.70	0.89	IV.	3	30.332	29 39.36	48.49	3.95	46 34.75	30 4 21.80
107	9	. .	1.	18.7	. .	. .	. .	. .	48 36.59	8.71	0.81	III.	2	14.241	46 29.73	48.69	6.37	48 46.11	21 14.79
108	9.10	. .	. .	. .	. .	4.?	. .	. .	48 46.16	8.72	0.84	V.	3	21.638	38 45.01	48.71	5.25	48 55.72	30 13 28.97
109	9.10	. .	. .	39.7	. .	. .	. .	. .	51 57.44	8.74	0.98	III.	4	48.006	11 7.93	49.01	1.39	52 7.16	29 45 48.33
110	9	. .	0.	17.5	35.2	53.2	10.8	. .	52 35.36	8.75	0.98	IV.	4	47.821	11 19.53	49.06	1.40	52 45.09	45 59.99
111	9	. .	47.5	5.7	23.	. .	59.	. .	54 23.27	8.76	0.98	IV.	4	47.601	11 33.46	49.22	1.41	54 33.01	29 46 14.09
112	9	. .	7.2	25.2	43.2	0.7	18.6	. .	56 42.98	8.78	0.81	IV.	2	14.428	46 18.24	49.43	6.35	56 52.57	30 21 4.02
113	9.10	. .	. .	0.	18.	. .	54.	. .	58 18.09	8.79	0.86	IV.	3	23.532	36 45.97	49.58	4.97	58 27.74	11 30.52
114	9.10	. .	. .	. .	. .	46.	. .	22.?	11 58 28.39	8.79	0.86	V.	3	24.600	35 39.14	49.59	4.81	11 58 38.04	10 23.54
115	9	. .	. .	. .	. .	. .	. .	1.3	12 0 7.84	8.81	0.83	VII.	2	17.009	43 35.76	49.74	5.95	12 0 17.48	30 18 21.45
116	9	. . .	12.	29.5	47.4	. .	. .	40.7	12 3 47.42	+ 8.84	+0.98	IV.	4	47.742	−11 24.48	−50.05	−1.39	12 3 57.24	−29 46 5.92

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(103) 76. Minutes assumed as 41 instead of 42, and transits over T.'s V and VI as recorded over T.'s IV and V, to agree with Arg. Z. 375, 14.

(103) 85. Observed transit over T. VII supposed to be 30ˢ.5 instead of 0ˢ.5.

(103) 104. Transits over T.'s IV, V, and VI assumed as recorded over T.'s III, IV, and V, and minutes as 41, not 42, to agree with Arg. Z. 401, 67, and W. Mer. Cir., April 18.

(103) 113. Transit over T. VI assumed to have been recorded as over T. V.

ZONE 104. APRIL 3. C. $D_0 = -27° 41' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8.9	. .	. .	34.	51.3	9.1	26.6	. .	8 15 51.54	+ 2.13	+0.86	IV.	3	32.278	−27 37.26	−11.68	−3.73	8 15 54.53	−28 8 52.67
2	8.9	. .	. .	18.	35.	53.	10.6	. .	17 35.39	2.12	0.79	IV.	2	12.680	48 7.78	12.11	6.11	17 38.30	29 26.00
3	9	. .	13.2	31.	. .	6.	23.2	. .	22 48.35	2.11	0.84	IV.	3	29.682	30 19.96	13.35	4.04	22 51.30	11 37.35
4	8	. .	20.7	37.	54.	11.5	. .	. .	22 54.54	2.11	0.84	IV.	3	31.081	28 52.24	13.37	3.87	22 57.49	10 9.48
5	9	. .	. .	29.5	48.	. .	. .	41.2	28 47.91	2.10	0.80	IV.	2	18.672	41 51.71	14.76	5.36	28 50.81	28 23 11.83
6	8	. .	. .	. .	. .	. .	. .	19.3	29 27.00	2.10	0.87	VII.	4	42.937	16 25.08	14.91	2.45	29 29.97	27 57 42.44
7	9.10	. .	28.	. .	. .	20.	. .	. .	33 2.74	2.09	0.88	IV.	4	49.218	9 52.11	15.74	1.73	33 5.71	51 9.58
8	9	. .	. .	51.	. .	26.1	. .	. .	34 8.55	2.09	0.87	IV.	4	47.306	11 52.08	15.99	1.95	34 11.51	27 53 10.02
9	8	. .	17.5	35.	52.3	9.8	27.1	. .	41 52.35	2.08	0.83	IV.	3	35.816	23 55.07	17.77	3.30	41 55.26	28 5 16.14
10	8	. .	23.7	41.1	58.3	16.	. .	. .	43 58.50	2.07	0.82	IV.	3	37.364	22 18.21	18.25	3.12	44 1.39	3 39.58
11	9	. .	. .	. .	. .	. .	32.2	50.3	43 57.57	2.07	0.78	VI.	2	23.449	36 52.05	18.24	4.79	44 0.42	28 18 15.08
12	9	. .	. .	25.	42.2	. .	17.3	. .	46 42.38	2.07	0.87	IV.	4	52.605	6 19.67	18.87	1.32	46 45.32	27 47 39.86
13	7.8	. .	16.	33.4	51.	8.4	26.	. .	52 50.97	2.06	0.78	IV.	3	27.889	32 12.38	20.23	4.25	52 53.81	28 13 36.86
14	9	. .	14.7	32.	49.2	. .	. .	. .	54 49.45	2.06	0.78	IV.	3	26.608	33 32.88	20.67	4.41	54 52.29	14 57.96
15	9.10	. .	. .	. .	. .	. .	. .	. .	54	2.06	0.79	VI.	3	30.867	29 5.92	20.70	3.90	54	10 30.52
16	8	. .	. .	22.3	39.8	57.3	15.4	. .	8 58 39.95	2.06	0.74	IV.	2	16.714	43 54.59	21.52	5.62	8 58 42.75	28 25 21.73
17	9	. .	. .	. .	19.7	. .	. .	. .	9 1 19.71	2.06	0.81	IV.	4	41.354	18 5.38	22.09	2.64	9 1 22.58	27 59 30.11
18	9.10	. .	. .	. .	. .	1.	. .	. .	1 43.57	2.06	0.83	V.	4	47.579	11 34.78	22.17	1.91	1 46.46	52 58.86
19	9	. .	. .	. .	59.2	. .	35.	. .	4 59.70	2.06	0.84	IV.	4	51.398	7 35.47	22.88	1.46	5 2.60	27 48 59.81
20	8	. .	. .	. .	. .	10.	27.8	45.	5 52.63	2.06	0.75	V.	2	21.771	38 37.22	23.06	5.00	5 55.44	28 20 5.28
21	8.9	. .	1.8	. .	37.	54.7	11.4	. .	9 36.86	2.05	0.76	IV.	3	25.817	34 22.39	23.86	4.50	9 39.67	15 50.75
22	9	. .	19.7	37.	54.2	. .	. .	. .	13 54.49	2.05	0.71	IV.	2	12.728	48 4.76	24.76	6.12	13 57.25	29 35.64
23	9	. .	. .	. .	14.7	32.2	50.	. .	14 14.85	2.05	0.76	IV.	3	31.202	28 44.71	24.83	3.86	14 17.66	10 13.40
24	7	47.5	5.	22.6	39.8	57.6	14.8	32.3	16 39.94	2.05	0.76	IV.	3	29.780	30 13.74	25.34	4.02	16 42.75	11 43.10
25	9	. .	10.	. .	44.	2.5	19.7	. .	18 44.69	2.05	0.73	IV.	3	21.792	38 34.97	25.77	4.99	18 47.47	20 5.73
26	7.8	. .	. .	52.2	9.8	27.3	45.	. .	20 9.86	2.05	0.76	IV.	3	32.987	26 52.60	26.06	3.64	20 12.67	28 8 22.30
27	9	. .	53.	10.2	. .	. .	2.5	. .	23 27.75	2.06	0.79	IV.	4	44.462	14 50.44	26.72	2.27	23 30.60	27 56 19.43
28	8	. .	29.	46.5	3.8	21.3	. .	. .	24 3.88	2.06	0.75	IV.	3	34.768	25 0.80	26.84	3.43	24 6.69	28 6 31.07
29	8	. .	. .	24.2	42.	59.	16.7	. .	25 41.78	2.06	0.78	IV.	4	42.709	16 40.19	27.18	2.47	25 44.62	27 58 9.84
30	9.10	. .	. .	52.2	9.7	27.	. .	. .	33 9.64	2.06	0.73	IV.	3	27.494	32 37.35	28.67	4.30	33 12.43	28 14 10.32
31	9	. .	44.1	1.7	19.	37.	54.5	. .	43 19.27	2.07	0.71	IV.	3	30.368	29 37.10	30.64	3.96	43 22.05	28 11 11.70
32	9	. .	. .	. .	25.2	42.2	0.8	. .	48 25.33	2.08	0.78	IV.	4	51.835	7 7.82	31.60	1.38	48 28.19	27 49 40.80
33	9	. .	. .	54.5	. .	29.2	. .	. .	50 11.80	2.08	0.65	IV.	2	9.221	51 45.02	31.94	6.56	50 14.53	28 33 23.52
34	8	. .	22.2	40.	57.3	15.3	32.5	. .	51 57.46	2.09	0.63	IV.	2	7.282	53 46.80	32.26	6.81	52 0.18	28 35 25.87
35	9	. .	. .	45.5	. .	20.2	. .	. .	55 2.85	2.09	0.75	IV.	4	43.491	15 51.28	32.82	2.37	55 5.69	27 57 26.47
36	9	. .	16.2	. .	51.3	. .	. .	. .	56 51.25	2.09	0.68	IV.	3	22.724	37 36.54	33.15	4.89	56 54.02	28 19 14.58
37	9	. .	. .	. .	. .	. .	41.	58.2	57 6.10	2.09	0.77	VI.	4	53.874	4 59.59	33.20	1.15	57 8.96	27 46 33.94
38	9	. .	0.5	. .	. .	. .	. .	. .	59 35.40	2.10	0.74	II.	4	45.635	13 36.49	33.66	2.12	59 38.24	27 55 12.27
39	9	. .	. .	. .	. .	. .	1.	18.	59 25.79	2.10	0.66	VI.	3	18.639	41 53.34	33.63	5.38	9 59 28.55	28 23 32.35
40	9	. .	. .	. .	. .	. .	34.6	. .	9 59 59.65	2.10	0.65	VI.	3	17.824	42 44.36	33.73	5.50	10 0 2.40	24 23.59
41	9	. .	. .	. .	. .	. .	. .	. .	10 1	2.10	0.70	IV.	3	33.211	26 38.67	33.91	3.62	1	28 8 16.20
42	8	. .	34.7	52.1	9.3	27.1	44.2	. .	5 9.50	2.11	0.74	IV.	4	48.659	10 27.04	34.64	1.77	5 12.35	27 52 3.45
43	9	. .	. .	53.4	. .	28.7	46.2	. .	9 11.17	2.12	0.73	IV.	4	48.460	10 39.64	35.35	1.79	9 14.02	27 52 16.78
44	9	. .	49.8	. .	24.5	. .	. .	. .	9 24.64	2.12	0.67	IV.	3	27.823	32 16.52	35.39	4.27	9 27.43	28 13 56.18
45	7	. .	37.	55.	12.2	29.8	47.4	. .	11 12.29	2.12	0.66	IV.	3	27.178	32 57.19	35.71	4.35	11 15.07	14 37.25
46	9.10	. .	. .	. .	. .	29.	. .	3.5	12 11.30	2.13	0.67	V.	3	29.075	30 58.35	35.88	4.11	12 14.10	12 38.34
47	9.10	. .	. .	. .	. .	9.5	. .	43.7	12 51.66	2.13	0.67	V.	3	29.047	31 0.04	36.00	4.12	12 54.46	12 40.16
48	9.10	. .	2.2	19.7	37.	. .	. .	. .	16 37.14	2.14	0.64	IV.	2	19.342	41 9.84	36.67	5.30	16 39.92	22 51.81
49	8	. .	51.4	9.	26.3	43.4	1.5	. .	10 18 26.32	+ 2.14	+0.62	IV.	2	16.293	−44 21.20	−36.99	−5.68	10 18 29.08	−28 26 3.87

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

April 3. Hazy about the horizon; probably many stars obscured.

(104) 15. Precedes the last 4 or 5 seconds.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 104	April 3,	8 15	67 2 28.8	39.0	26.5	36.8	21.7	35.4	31.37	29.892	57.3	53.0	56.6	55.0	51.0
		8 41	. .	. .	. .	. .	. .	. .	. .	. .	. .	52.0			
		9 1	. .	. .	. .	. .	. .	. .	. .	29.898	56.0	51.8			
		9 20	28.8	39.0	26.5	37.4	21.8	34.5	31.33	. .	. .	51.2	55.8	53.5	
		9 33	. .	. .	. .	. .	. .	. .	. .	29.904	56.1	51.1			
		9 59	. .	. .	. .	. .	. .	. .	. .	. .	. .	50.6			
		10 20	29.8	39.0	26.6	37.2	21.5	34.4	31.42	29.902	55.2	50.0	54.5	52.8	
		10 30	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.9			

ZONE 104. APRIL 3. C. $D_0 = -27° 41' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9.10	. .	55.	13.	30.7	. .	. .	. .	10 25 30.39	+ 2.16	+0.64	IV.	3	25.413	−34 47.99	−38.11	−4.56	10 25 33.19	−28 16 30.66
51	8	. .	57.	14.7	32.	49.6	6.8	. .	29 32.04	2.18	0.68	IV.	4	41.329	18 6.95	38.77	2.64	29 34.90	27 59 48.36
52	9.	. .	. .	. .	42.	59.7	17.	. .	10 30 42.10	+ 2.18	+0.62	IV.	3	22.818	−37 30.58	−38.95	−4.88	10 30 44.90	−28 19 14.41

ZONE 105. APRIL 7. P. $D_0 = -27° 3' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	30.	. .	. .	9 7 12.58	− 0.97	+1.84	V.	3	22.860	−37 28.19	− 7.37	−4.02	9 7 13.45	−27 41 19.58
2	7	. .	. .	. .	. .	. .	. .	29.5	7 37.44	0.98	1.90	VII.	3	33.697	26 8.44	7.46	2.79	7 38.36	29 58.69
3	8.9	. .	. .	5.	. .	. .	. .	. .	9 22.37	0.98	1.87	III.	3	28.913	31 7.76	7.84	3.33	9 23.26	34 58.93
4	9	. .	. .	2.3	. .	. .	. .	. .	10 19.68	0.98	1.78	III.	2	15.632	45 2.38	8.05	4.86	10 20.48	48 55.29
5	9	. .	4.	. .	. .	. .	. .	. .	12 38.71	0.98	1.88	II.	3	33.093	26 45.14	8.54	2.84	12 39.61	30 36.52
6	8	. .	. .	7.3	. .	. .	. .	. .	13 24.61	0.98	2.01	III.	4	54.012	4 51.31	8.70	0.50	13 25.64	8 40.51
7	7	5.	22.3	39.5	. .	. .	. .	. .	14 56.88	0.98	1.99	III.	4	52.440	6 30.06	9.03	0.68	14 57.89	10 19.77
8	7	. .	4.5	. .	. .	. .	. .	. .	16 39.39	0.98	1.72	II.	1	6.322	54 45.01	9.39	5.95	16 40.13	58 40.35
9	7.8	. .	. .	41.	. .	. .	. .	. .	17 58.35	0.98	1.93	III.	4	41.612	17 49.07	9.67	1.86	17 59.30	21 40.60
10	8	. .	. .	. .	25.	. .	. .	. .	18 25.03	0.98	1.90	IV.	4	38.045	21 32.73	9.76	2.29	18 25.95	25 24.78
11	7	. .	. .	48.	. .	. .	. .	. .	20 5.38	0.98	1.79	III	2	20.707	39 43.81	10.12	4.28	20 6.19	43 38.21
12	8	. .	. .	36.	. .	. .	. .	. .	20 53.38	0.98	1.79	III.	2	19.593	40 53.78	10.29	4.41	20 54.19	44 48.48
13	8	. .	. .	. .	. .	7.5	. .	. .	21 50.17	0.99	1.93	V.	4	43.992	15 19.60	10.48	1.61	21 51.09	19 11.69
14	6	. .	. .	5.3	22.3	. .	. .	. .	23 22.51	0.99	1.83	IV.	3	28.690	31 22.19	10.79	3.36	23 23.35	35 16.34
15	8	. .	. .	. .	. .	56.	. .	. .	23 38.62	0.99	1.85	V.	3	31.910	28 0.35	10.86	2.97	23 39.48	31 54.18
16	8	. .	. .	. .	42.	. .	. .	. .	24 42.04	0.99	1.87	IV.	3	34.524	25 16.30	11.07	2.68	24 42.92	29 10.05
17	7.8	. .	. .	. .	23.	. .	. .	. .	25 23.05	0.99	1.84	IV.	3	29.345	29 38.54	11.22	3.14	25 23.90	33 32.90
18	5	. .	. .	. .	. .	. .	19.	. .	25 44.19	0.99	1.70	VI.	1	6.820	54 14.68	11.29	5.90	25 44.90	58 11.87
19	9	. .	. .	. .	. .	. .	. .	8.5	28 16.36	0.99	1.78	VII.	2	21.625	38 46.19	11.81	4.18	28 17.15	42 42.18
20	8	. .	4.	. .	. .	. .	. .	. .	30 38.83	0.99	1.72	II.	1	13.920	46 47.86	12.30	5.04	30 39.56	50 45.20
21	8	. .	. .	. .	. .	10.	. .	. .	30 52.51	0.99	1.69	V.	1	7.790	53 13.73	12.36	5.78	30 53.21	57 11.87
22	7.8	. .	. .	. .	. .	7.7	. .	. .	31 50.37	0.99	1.91	V.	4	44.525	14 46.30	12.54	1.54	31 51.29	18 40.38
23	7	. .	. .	21.7	. .	. .	. .	. .	35 39.07	0.99	1.81	III.	3	30.690	29 16.34	13.30	3.12	35 39.89	33 12.76
24	9	. .	. .	. .	45.7	. .	. .	. .	36 45.74	0.99	1.75	IV.	2	18.490	42 3.25	13.51	4.51	36 46.50	46 1.27
25	5.6	. .	. .	. .	. .	47.	. .	22.	37 29.89	0.99	1.97	V.	4	57.522	1 11.31	13.66	0.12	37 30.87	5 5.09
26	8	. .	. .	. .	. .	. .	. .	39.	38 46.85	0.99	1.75	VII.	2	21.390	39 1.07	13.92	4.19	38 47.61	42 59.18
27	7	. .	. .	41.7	58.7	. .	. .	. .	40 58.91	0.99	1.76	IV.	2	23.112	37 13.13	14.35	4.00	40 59.68	41 11.48
28	9	. .	. .	. .	. .	. .	55.5	. .	41 20.81	0.98	1.80	VI.	3	29.422	30 36.82	14.41	3.27	41 21.63	34 34.50
29	8	. .	. .	. .	. .	51.3	. .	. .	42 33.84	0.98	1.69	V.	2	14.330	46 24.52	14.66	5.02	42 34.55	50 24.20
30	7	. .	49.2	. .	24.	. .	. .	. .	42 24.02	0 98	1.71	IV.	2	17.488	43 6.13	14.63	4.66	44 24.75	47 5.42
31	9	. .	. .	. .	. .	31.	. .	. .	45 13.59	0.98	1.75	V.	3	26.442	33 43.67	15.16	3.61	45 14.36	37 42.44
32	6.7	27.7	45.	2.2	. .	. .	. .	. .	47 19.60	0.98	1.87	III.	4	45.607	13 38.44	15.57	1.42	47 20.49	17 35.43
33	8	. .	. .	. .	. .	55.	. .	. .	47 37.55	0.98	1.70	V.	2	17.090	43 31.12	15.62	4.70	47 38.27	47 31.44
34	7	. .	. .	. .	27.7	. .	. .	. .	48 27.74	0.98	1.69	IV.	2	14.972	45 43.91	15.79	4.95	48 28.45	49 44.65
35	9	. .	. .	. .	. .	37.	. .	. .	49 19.55	0.98	1.70	V.	2	17.052	43 33.44	15.96	4.70	49 20.27	47 34.10
36	8	. .	. .	. .	. .	27.	. .	. .	50 9.54	0.98	1.68	V.	2	14.973	45 43.91	16.12	4.96	50 10.24	49 44.99
37	7.8	. .	. .	42.3	59.5	. .	. .	. .	52 59.61	0.98	1.75	IV.	3	26.972	33 9.98	16.65	3.55	53 0.38	37 10.18
38	7	. .	13.	30.2	47.7	. .	. .	. .	54 5.13	0.98	1.63	IV.	1	7.575	53 27.16	16.98	5.80	55 5.78	57 29.94
39	7	16.3	34.	. .	8.	. .	. .	. .	57 8.43	0.97	1.69	IV.	2	18.120	42 26.42	17.42	4.56	57 9.15	46 28.40
40	7	37.5	55.	. .	. .	. .	4.5	. .	57 29.70	0.97	1.73	VI.	3	25.105	35 7.57	17.49	3.77	57 30.46	39 8.83
41	7	. .	. .	. .	. .	. .	34.	. .	57 59.34	0.97	1.79	VI.	4	35.905	23 46.52	17.58	2.52	58 0.16	27 46.62
42	7	. .	. .	. .	. .	. .	. .	15.	9 58 22.95	− 0.97	+1.78	VII.	4	35.487	−24 12.63	−17.64	−2.56	9 58 23.76	−27 28 12.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(105) 17. Micrometer reading assumed as $30^r.345$, not $29^r.345$.

(105) 30. Minutes assumed as 44 instead of 42.

(105) 38. Transits over T.'s I, II, and III assumed as recorded over T.'s II, III, and IV, and minutes as 55, not 54.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 105	April 7, 9 0	66 24 59.6	65.3	57.2	63.8	49.4	64.8	60.07	30.074	62.2	60.0	63.0	59.5	57.0
	10 25	59.0	65.3	56.8	63.8	49.4	63.0	59.55						
	11 0	. .	. .	. .	. .	. .	. .	. .	30.076	58.4	52.5			
	12 37	57.8	66.3	55.6	63.8	48.5	62.3	59.05	30.090	55.0	49.0	53.5		
	15 0	59.3	70.4	59.5	69.7	53.5	65.7	63.02	30.072	52.0	46.7	51.5	51.5	
	16 3	. .	. .	. .	. .	. .	. .	. .	30.064	51.4	44.2			

ZONE 105. APRIL 7. P. $D_0 = -27° 3' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
43	7	..	..	..	..	..	12.7	..	9 59 37.90	− 0.97	+1.63	VI.	1	9.754	−51 10.56	−17.88	−5.57	9 59 38.56	−27 55 14.01
44	8	..	..	..	..	..	56.5	..	10 0 21.80	0.97	1.74	VI.	3	28.777	31 17.04	18.01	3.35	10 0 22.57	35 18.40
45	9	..	..	..	..	..	2.	..	2 27.44	0.97	1.88	VI.	4	52.982	5 55.58	18.39	0.59	2 28.35	9 54.56
46	7	..	..	..	..	..	57.7	..	3 23.04	0.97	1.77	VI.	3	35.800	23 56.45	18.56	2.53	3 23.84	27 57.54
47	4.5	..	..	..	12.	..	..	4.	5 11.92	0.96	1.64	IV.	2	12.793	48 0.62	18.89	5.20	5 12.60	52 4.71
48	9	..	..	..	..	..	36.	..	6 1.25	0.96	1.66	VI.	2	18.290	42 15.80	19.03	4.58	6 1.95	46 19.41
49	8	..	..	..	..	..	23.7	..	6 49.13	0.96	1.85	VI.	4	49.807	9 14.62	19.18	0.94	6 50.02	13 14.74
50	9	..	..	38.	..	..	..	..	8 55.38	0.96	1.66	III.	2	18.535	36 46.54	19.55	3.95	8 56.08	40 50.03
51	6	..	..	..	..	31.	..	..	9 13.53	0.96	1.63	V.	1	12.608	48 11.42	19.61	5.24	9 14.20	52 16.27
52	8	59.	..	34.	..	..	..	..	11 51.19	0.95	1.74	III.	3	32.827	27 2.20	20.07	2.86	11 51.98	31 5.13
53	7	..	..	..	..	16.	..	..	11 58.55	0.95	1.65	V.	2	18.152	37 10.77	20.09	3.98	11 59.25	41 14.84
54	7	..	..	..	14.	..	..	..	13 14.03	0.95	1.60	IV.	1	9.967	50 56.87	20.31	5.55	13 14.68	55 2.73
55	7	..	..	22.	39.5	..	..	..	14 39.45	0.95	1.72	IV.	3	32.525	27 21.71	20.55	2.90	14 40.22	31 25.16
56	8	..	..	38.	55.	..	..	..	15 55.16	0.95	1.82	IV.	4	47.664	11 29.44	20.76	1.17	15 56.03	15 31.37
57	9	7.	24.	..	..	..	..	..	17 58.78	0.94	1.81	II.	4	46.550	12 39.18	21.13	1.29	17 59.65	16 41.60
58	9	..	5.5	..	..	..	..	..	21 40.33	0.94	1.60	II.	2	13.595	47 9.91	21.75	5.13	21 40.99	51 16.79
59	8	..	..	..	7.7	..	..	..	22 7.74	0.94	1.64	IV.	2	21.670	38 43.57	21.83	4.17	22 8.44	42 49.57
60	4.5	56.7	14.2	31.5	48.8	..	..	..	24 48.82	0.93	1.72	IV.	3	35.790	23 56.69	22.27	2.53	24 49.61	28 1.49
61	9	52.	..	27.	..	..	..	..	26 44.24	0.92	1.64	III.	2	22.723	37 37.30	22.59	4.05	26 44.96	41 43.94
62	8	..	..	49.	..	24.	..	..	36 6.48	0.90	1.59	III.	2	19.120	41 23.47	24.14	4.48	36 7.17	45 32.09
63	9	13.	..	47.	..	..	..	..	38 4.69	0.90	1.66	III.	3	31.990	27 54.77	24.40	2.96	38 5.45	32 2.13
64	7	..	..	5.3	..	..	..	..	39 22.65	0.89	1.72	III.	4	42.372	17 1.46	24.60	1.76	39 23.48	21, 7.82
65	8	..	..	..	..	..	57.	..	39 22.38	0.89	1.72	VI.	4	41.965	18 29.23	24.60	1.94	39 23.21	22 35.77
66	6	..	..	32.	49.5	..	..	..	41 49.38	0.89	1.80	IV.	4	55.290	3 31.42	24.98	0.30	41 50.29	7 36.70
67	8	..	..	..	..	17.	..	..	45 59.61	0.88	1.64	V.	3	29.315	30 43.42	25.60	3.28	46 0.37	34 52.30
68	7.8	1.	18.	35.3	52.7	..	..	..	49 52.82	0.86	1.59	IV.	3	23.912	36 21.92	26.18	3.92	49 53.55	40 32.02
69	7	..	..	..	48.	..	..	..	50 48.04	0.86	1.64	IV.	3	33.150	26 42.45	26.31	2.82	50 48.82	30 51.58
70	8	..	..	..	56.3	..	..	..	51 56.35	0.86	1.59	IV.	3	25.280	34 56.34	26.47	3.76	51 57.08	39 6.57
71	9	..	..	..	..	32.5	..	..	53 15.14	0.85	1.67	V.	4	38.133	21 27.15	26.66	2.26	53 15.96	25 36.07
72	9	..	..	..	..	..	49.	..	54 14.38	0.85	1.68	VI.	4	42.080	17 19.28	26.79	1.78	54 15.21	21 27.85
73	8	..	..	..	..	55.3	..	..	55 37.82	0.85	1.49	V.	2	10.060	50 52.30	26.98	5.53	55 38.46	55 4.81
74	6.7	..	..	..	..	41.	..	..	10 59 23.52	0.83	1.48	V.	1	10.070	50 50.67	27.52	5.53	10 59 24.17	55 3.72
75	6	..	..	..	..	29.3	..	..	11 0 11.88	0.83	1.56	V.	3	23.622	36 40.50	27.63	3.96	11 0 12.61	40 52.09
76	4	..	..	..	..	..	2.3	..	1 27.72	0.83	1.70	VI.	4	47.260	11 54.59	27.79	1.21	1 28.59	16 3.59
77	8	..	..	..	..	..	45.	..	2 10.34	0.82	1.62	VI.	3	35.082	24 41.61	27.88	2.61	2 11.14	28 52.10
78	7	..	..	..	..	..	35.3	..	3 0.65	0.82	1.63	VI.	3	36.540	23 10.21	28.00	2.43	3 1.46	27 20.64
79	7	34.7	..	9.	..	..	..	..	7 26.52	0.81	1.61	III.	3	34.540	25 14.92	28.59	2.67	7 27.32	29 26.18
80	7	..	..	..	..	47.3	..	..	7 29.88	0.81	1.54	V.	3	23.347	36 57.89	28.60	3.99	7 30.61	41 10.48
81	7	..	..	..	12.5	..	..	..	9 12.50	0.80	1.67	IV.	4	44.720	14 34.07	28.82	1.49	9 13.37	18 44.38
82	.	..	..	..	..	..	6.	..	9 31.31	0.80	1.58	VI.	3	30.830	29 8.24	28.86	3.10	9 32.09	33 20.20
83	7	..	..	..	..	22.3	..	..	12 4.89	0.79	1.54	V.	3	25.153	35 4.44	29.18	3.77	12 5.64	39 17.39
84	6	..	..	..	..	..	1.	..	12 26.38	0.79	1.64	VI.	4	41.630	17 47.56	29.22	1.84	12 27.23	21 58.62
85	6	..	..	..	..	..	34.	..	12 59.33	0.79	1.59	VI.	4	33.360	26 26.44	29.29	2.81	13 0.13	30 38.54
86	8	..	..	..	21.	..	..	..	16 21.05	0.77	1.52	IV.	2	23.435	36 52.99	29.69	3.98	16 21.80	41 6.66
87	8	..	..	..	..	..	..	15.	16 22.87	0.77	1.52	VII.	2	23.340	36 58.71	29.70	3.99	16 23.62	41 12.40
88	8	39.	..	14.	..	..	..	..	20 31.23	0.75	1.52	III.	3	24.487	35 45.66	30.21	3.85	20 32.00	39 59.72
89	8	..	..	..	..	55.5	..	..	20 38.11	0.75	1.55	III.	3	30.520	29 27.12	30.22	3.14	20 38.91	33 40.48
90	5.6	..	..	54.	11.	..	..	..	22 11.15	0.75	1.67	IV.	2	50.910	8 9.27	30.40	0.78	22 12.07	12 20.45
91	7	..	2.5	20.	..	..	..	..	11 23 37.39	− 0.74	+1.40	III.	2	7.188	−53 52.46	−30.56	−5.92	11 23 38.05	−27 58 8.94

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

April 7. 12^h 38^m, moved the circle for other observations. 16^h, somewhat hazy; moon-light.

(105) 50. Micrometer reading assumed as $21^r.535$, not $18^r.535$.

(105) 53. Micrometer reading assumed as $21^r.152$, not $18^r.152$.

(105) 65. Micrometer reading assumed as $40^r.965$, not $41^r.965$.

ZONE 105. APRIL 7. P. $D_0 = -27° 3' 40''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
92	8	. .	. .	. .	. .	29.5	. .	. .	11 25 12.10	− 0.73	. .	.	.	. .	. . .	. .	. .	11 25	−27
93	7	. .	. .	8.3	. .	. .	. .	. .	30 25.65	0.71	+1.57	3	4	38.192	−21 23.57	−31.33	−2.24	30 26.51	25 37.14
94	7	. .	. .	. .	. .	0.3	. .	. .	30 42.94	0.71	1.57	V.	3	36.402	23 18.81	31.35	2.45	30 43.80	27 32.61
95	6.7	53.3	11.2	28.5	. .	. .	. .	. .	32 45.73	0.70	1.48	III.	2	24.630	35 37.70	31.58	3.84	32 46.51	39 53.12
96	9	. .	. .	. .	. .	. .	18.	. .	33 43.43	0.69	1.64	VI.	4	49.735	9 19.19	31.68	0.90	33 44.38	13 31.77
97	9	. .	28.5	. .	3.5	. .	. .	. .	36 3.36	0.68	1.59	IV.	4	42.745	16 37.87	31.93	1.69	36 4.27	20 51.49
98	7	0.7	17.7	35.	. .	. .	. .	. .	37 52.50	0.67	1.52	III.	3	31.817	28 5.56	32.12	2.98	37 53.35	32 20.66
99	6	. .	. .	30.3	. .	. .	. .	. .	38 47.61	0.67	1.65	III.	4	55.180	3 38.21	32.21	0.27	38 48.55	7 50.69
100	6.7	27.	44.	1.	. .	. .	. .	. .	40 18.68	0.66	1.53	III.	3	34.655	25 7.66	32.37	2.66	40 19.55	29 22.69
101	9	. .	. .	. .	. .	. .	58.	. .	40 23.31	0.66	1.51	VI.	3	30.910	29 3.22	32.38	3.09	40 24.16	33 18.69
102	8	. .	. .	. .	. .	. .	. .	52.	45 59.97	0.63	1.53	VII.	3	37.273	22 24.23	32.90	2.34	46 0.87	26 39.47
103	5.6	. .	. .	44.5	1.7	. .	. .	53.7	48 1.74	0.62	1.46	IV.	3	26.023	34 9.53	33.09	3.68	48 2.58	38 26.30
104	7	28.3	45.5	3.	20.	. .	. .	. .	55 20.20	0.59	1.51	IV.	4	38.495	21 4.63	33.73	2.20	55 21.12	25 20.56
105	9	. .	. .	53.	. .	. .	. .	. .	57 10.38	0.58	1.37	III.	2	15.580	45 5.63	33.89	4.92	57 11.17	49 24.44
106	7	. .	. .	. .	28.	. .	3.	. .	11 57 28.13	0.57	1.36	IV.	2	13.230	47 33.38	33.92	5.21	11 57 28.92	51 52.51
107	7	. .	11.5	. .	46.3	. .	. .	. .	12 0 46.23	0.56	1.58	IV.	4	52.037	6 55.15	34.19	0.63	12 0 47.25	11 9.97
108	8	. .	. .	. .	. .	. .	3.1	. .	0 28.53	0.56	1.56	VI.	4	49.173	9 54.62	34.17	0.95	0 29.53	14 9.74
109	6	. .	32.2	49.5	. .	. .	. .	. .	3 6.86	0.54	1.56	III.	4	49.477	9 35.88	34.36	0.92	3 7.88	13 51.16
110	8	. .	. .	. .	. .	11.	. .	. .	3 53.59	0.54	1.40	V.	3	23.913	36 22.11	34.42	3.93	3 54.45	40 40.46
111	8	. .	. .	. .	27.3	. .	. .	. .	6 27.33	0.52	1.48	IV.	3	38.830	20 46.01	34.60	2.17	6 28.29	25 2.78
112	8	. .	. .	. .	31.	. .	. .	. .	8 30.95	0.51	1.59	IV.	4	56.023	2 45.28	34.77	0.16	8 32.03	7 0.21
113	7	. .	23.7	41.2	58.3	. .	. .	. .	9 58.43	0.50	1.48	IV.	3	37.784	21 51.62	34.87	2.27	9 59.41	26 8.76
114	7	18.3	35.7	53.3	. .	28.	. .	. .	12 10.53	0.49	1.38	IV.	3	23.204	37 6.55	35.00	4.02	12 11.42	41 25.57
115	9	. .	. .	. .	19.	. .	. .	. .	16 19.04	0.47	1.36	IV.	2	21.337	39 4.65	35.27	4.23	16 19.93	43 24.15
116	7	. .	. .	30.	47.	. .	. .	. .	17 47.21	0.46	1.41	IV.	3	29.220	30 49.06	35.46	3.30	17 48.16	35 7.82
117	7	41.7	59.	16.5	. .	. .	. .	. .	19 33.88	0.44	1.29	III.	2	12.053	48 46.94	35.51	5.35	19 34.73	53 7.80
118	9	. .	. .	. .	. .	. .	16.5	. .	23 41.77	0.42	1.35	VI.	2	23.630	36 40.58	35.70	3.96	23 42.70	41 0.24
119	8	. .	. .	12.	. .	. .	. .	. .	25 29.37	0.41	1.37	III.	3	27.263	32 51.47	35.79	3.54	25 30.33	37 10.80
120	7.8	. .	. .	. .	. .	10.5	. .	. .	25 53.06	0.41	1.32	V.	2	17.933	42 38.08	35.81	3.63	25 53.97	46 57.52
121	9	. .	. .	22.3	. .	. .	. .	. .	27 39.68	0.39	1.30	III.	2	16.063	44 35.32	35.91	3.86	27 40.59	48 55.09
122	7	42.	59.	16.7	. .	. .	. .	. .	29 33.95	0.33	1.37	III.	3	28.985	31 3.30	36.01	3.32	29 34.99	35 22.63
123	7.8	39.5	. .	14.3	. .	. .	. .	. .	35 31.53	0.35	1.42	III.	4	41.930	17 28.99	36.26	2.79	35 32.60	21 48.04
124	4	. .	. .	. .	0.	17.3	35.	. .	35 0.10	0.35	1.38	IV.	3	34.164	25 38.89	36.28	2.70	36 1.13	29 57.87
125	4	. .	. .	. .	. .	33.	. .	. .	12 37 15.52	− 0.38	+1.23	III.	1	8.700	−52 16.09	−36.34	−5.76	12 37 16.37	−27 56 38.19

ZONE 106. APRIL 7. P. $D_0 = -27° 3' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	31.	. .	5.5	15 6 13.59	+ 2.85	+0.06	V.	4	45.880	−13 21.12	−35.24	−1.28	15 6 16.51	−27 17 37.64
2	7	35.3	53.	10.	27.3	. .	. .	. .	11 27.48	2.91	0.25	IV.	2	20.510	39 56.47	34.71	4.38	11 30.64	44 15.56
3	8	. .	. .	. .	. .	. .	6.	. .	12 31.37	2.92	0.10	VI.	4	41.043	18 24.38	34.61	1.86	12 34.39	22 40.85
4	7	43.7	1.	18.3	35.5	. .	. .	. .	16 35.67	2.95	0.20	IV.	3	30.547	29 25.81	34.17	3.14	16 38.82	33 43.12
5	7	. .	. .	27.	44.	1.3	. .	. .	17 44.11	2.97	0.15	IV.	3	37.377	22 17.40	34.05	2.31	17 47.23	26 33.76
6	8	. .	40.7	. .	. .	. .	. .	. .	20 15.40	2.99	0.05	II.	4	52.390	6 33.01	33.79	0.52	20 18.44	10 47.32
7	7	43.3	. .	18.7	. .	. .	. .	. .	22 35.80	3.00	0.34	III.	1	11.740	49 5.21	33.51	5.48	22 39.14	53 24.20
8	8	. .	. .	. .	0.	. .	35.	. .	23 0.17	3.01	0.23	IV.	3	25.450	34 45.67	33.47	3.77	23 3.41	39 2.91
9	5	37.5	55.	12.	29.3	47.	. .	. .	25 29.51	3.03	0.19	V.	3	31.970	27 56.65	33.18	2.96	25 32.73	32 12.79
10	3.4	0.7	18.	35.5	52.7	10.3	. .	. .	27 52.81	3.06	0.23	IV.	3	26.435	33 43.86	32.91	3.65	27 56.10	38 0.42
11	6	. .	. .	. .	6.	. .	41.	. .	15 29 6.16	+ 3.07	+0.27	IV.	3	22.165	−38 11.76	−32.78	−4.18	15 29 9.50	−27 42 28.72

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(105) 124. Minutes assumed as 36 instead of 35.

ZONE 106. APRIL 7. P. $D_0 = -27° \ 3' \ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
12	7	. .	. .	. .	. .	45.5	. .	. .	15 30 28.20	+ 3.08	+0.06	V.	4	54.130	− 4 43.91	−32.61	−0.33	15 30 31.34	−27 8 56.85
13	8	. .	27.	. .	. .	. .	. .	. .	34 1.75	3.11	0.26	II.	3	24.590	35 38.63	32.19	3.89	34 5.12	39 54.71
14	7	. .	. .	. .	. .	. .	29.	. .	33 54.34	3.11	0.20	VI.	3	34.537	25 15.86	32.20	2.65	33 57.65	29 30.71
15	8	. .	. .	. .	. .	. .	40.	. .	35 5.29	3.12	0.26	VI.	3	27.715	32 23.74	32.06	3.50	35 8.67	36 39.30
16	6	. .	28.	. .	2.5	. .	. .	. .	37 2.64	3.14	0.17	IV.	3	29.135	30 54.34	31.82	3.33	37 5.95	35 9.49
17	7	. .	. .	15.3	. .	. .	. .	. .	39 32.61	3.16	0.06	III.	4	56.035	2 44.53	31.52	0.07	39 35.83	6 56.12
18	8	. .	. .	. .	40.	. .	. .	. .	40 40.03	3.17	0.19	IV.	4	38.873	20 40.73	31.38	2.13	40 43.39	24 54.24
19	8.9	24.3	. .	59.	. .	. .	. .	. .	44 16.23	3.20	0.11	III.	4	49.010	10 4.97	30.91	0.94	44 19.54	14 16.82
20	8	. .	15.	. .	. .	. .	. .	. .	45 49.70	3.21	0.20	II.	3	36.595	23 5.45	30.71	2.40	45 53.11	27 18.56
21	8.9	. .	. .	35.	. .	. .	. .	. .	46 35.04	3.23	0.23	IV.	3	33.640	26 11.70	30.63	2.77	46 38.50	30 25.10
22	9	. .	. .	. .	. .	. .	46.	. .	47 11.30	3.23	0.26	VI.	3	27.780	32 19.60	30.53	3.49	47 14.79	36 33.62
23	7	. .	. .	. .	. .	. .	. .	53.	48 1.05	3.23	0.09	VII.	4	51.205	7 46.76	30.43	0.65	48 4.37	11 57.84
24	9	56.	. .	31.	. .	. .	. .	. .	51 48.20	3.27	0.25	III.	3	31.140	28 48.17	29.92	3.07	51 51.72	33 1.16
25	8	50.3	. .	25.5	. .	0.3	. .	. .	57 42.65	3.32	0.13	V.	4	49.975	9 4.39	29.13	0.78	57 46.10	18 28.00
26	7	. .	. .	. .	. .	9.	. .	. .	58 51.67	3.33	0.16	V.	4	44.050	15 16.03	28.96	1.50	15 58 55.16	19 26.49
27	8	. .	. .	. .	24.3	. .	59.3	. .	16 0 24.49	3.34	0.24	IV.	3	34.550	25 14.67	28.75	2.65	16 0 28.07	29 26.07
28	4	9.3	. .	44.	1.5	. .	. .	. .	16 3 1.41	+ 3.36	+0.26	IV.	3	32.180	−27 43.36	−28.39	−2.94	16 3 5.03	−27 31 54.69

ZONE 107. APRIL 9. C. $D_0 = -30° \ 49' \ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	38.2	56.2	. .	32.8	50.7	8 36 56.52	+ 0.64	−0.70	IV.	3	44.932	−14 23.28	− 5.41	−1.71	8 36 56.46	−31 3 30.40
2	7.8	. .	. .	. .	22.	40.2	58.7	16.6	38 22.32	0.63	0.99	IV.	3	20.741	39 40.97	5.78	5.44	38 21.96	31 28 52.19
3	9	. .	. .	. .	7.	24.7	. .	. .	40 6.86	0.63	0.62	IV.	4	52.445	6 29.75	6.19	0.60	40 6.87	30 55 36.54
4	9	. .	28.7	47.	5.	23.	40.7	. .	47 4.89	0.62	0.97	IV.	3	25.392	34 49.32	7.86	4.72	47 4.54	31 24 1.90
5	9	. .	. .	. .	. .	11.	. .	. .	47 52.93	0.62	1.00	VII.	3	22.849	37 28.88	8.06	5.10	47 52.55	26 42.04
6	7	. .	. .	. .	. .	19.7	37.2	. .	48 1.35	0.62	1.09	V.	2	14.591	46 7.95	8.08	6.40	48 0.88	35 22.43
7	9	. .	. .	. .	. .	52.	9.2	. .	49 33.49	0.62	1.11	V.	2	13.474	47 18.12	8.45	6.57	49 33.00	36 33.14
8	7.8	. .	4.7	22.7	40.5	58.7	. .	. .	51 40.65	0.62	0.79	IV.	4	42.954	16 24.77	8.96	1.99	51 40.48	5 35.72
9	7	. .	. .	. .	36.	54.	. .	30.	52 35.89	0.62	1.15	IV.	2	11.241	49 38.22	9.17	6.94	52 35.36	38 54.33
10	7	. .	. .	. .	. .	. .	. .	14.	52 19.93	0.62	0.97	V.	3	26.438	33 43.93	9.10	4.56	52 19.58	22 57.59
11	9	. .	30.2	48.	. .	. .	. .	. .	56 6.08	0.61	0.65	III.	4	53.138	5 46.18	9.98	0.50	56 6.04	30 54 56.66
12	9	. .	. .	. .	. .	57.2	15.	33.	56 39.04	0.61	0.92	V.	3	30.659	29 18.91	10.10	3.90	56 38.73	31 18 32.91
13	9	. .	. .	. .	. .	. .	23.	. .	8 57 47.00	0.61	0.93	VI.	3	30.117	29 53.04	10.38	3.98	8 57 46.68	31 19 7.40
14	8	. .	25.7	43.9	2.	20.	. .	. .	9 0 1.89	0.61	0.73	IV.	4	48.631	10 28.87	10.89	1.15	9 0 1.77	30 59 40.91
15	9	. .	. .	. .	. .	. .	. .	. .	0	0.61	0.89	IV.	3	35.039	24 43.87	10.89	3.23	0	31 13 57.99
16	7.8	. .	. .	. .	. .	21.	39.	. .	1 2.98	0.61	0.95	V.	3	30.413	29 34.52	11.12	3.94	1 2.64	18 49.58
17	7.8	. .	. .	. .	. .	. .	12.	30.5	1 36.18	0.61	1.04	VI.	3	23.471	36 50.16	11.25	5.01	1 35.75	26 6.42
18	8.9	. .	. .	45.7	. .	22.	40.	. .	6 3.90	0.60	0.95	IV.	3	31.351	28 35.43	12.25	3.79	6 3.55	17 51.47
19	8.9	. .	. .	16.2	34.	. .	. .	. .	6 34.13	0.60	0.89	IV.	3	36.405	23 18.36	12.40	3.01	6 33.84	12 33.77
20	9	. .	. .	. .	59.7	. .	. .	. .	7 59.75	0.60	1.11	IV.	2	18.542	41 59.99	12.70	5.80	7 59.24	31 18.49
21	8	. .	57.4	15.3	33.2	51.6	. .	. .	9 33.41	0.60	1.17	IV.	2	13.653	47 6.77	13.04	6.58	9 32.84	36 26.39
22	9.10	. .	31.3	. .	8.	. .	. .	. .	12 7.69	0.60	0.97	IV.	3	30.710	29 15.45	13.62	3.89	12 7.32	18 32.96
23	9	. .	. .	43.	. .	. .	37.2	. .	13 1.07	0.60	1.16	IV.	3	14.518	46 11.66	13.82	6.44	13 0.51	35 31.92
24	8	. .	. .	. .	59.3	17.7	35.2	. .	13 59.39	0.60	1.05	IV.	3	24.286	35 58.71	14.04	4.89	13 58.94	25 17.64
25	6	. .	. .	. .	. .	. .	59.2	17.6	14 23.46	0.60	0.86	VI.	4	41.133	18 18.73	14.13	2.27	14 23.20	7 35.13
26	8	. .	. .	. .	. .	7.3	. .	43.4	15 49.37	0.60	0.88	V.	4	39.123	20 25.05	14.44	2.59	15 49.09	9 42.08
27	9	. .	34.7	53.2	. .	29.2	. .	. .	19 11.06	0.60	1.20	IV.	2	13.332	47 27.04	15.19	6.63	19 10.46	36 48.86
28	9	. .	54.7	12.1	30.2	. .	. .	. .	9 19 30.40	+ 0.60	−1.15	IV.	2	17.530	−43 3.49	−15.26	−5.96	9 19 29.85	−31 32 24.71

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(106) 21. Transit over T. IV assumed as recorded over T. III, to agree with Arg. Z. 373, 106; and 388, 13.

(106) 25. Micrometer reading assumed as $44^r.975$, not $49^r.975$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 107	April 9,	8 40	70 9 56.2	66.4	54.1	64.1	46.8	63.9	58.58	29.998	62.5	56.3	61.5	60.0	60.5
		8 57	. .	. .	. .	. .	. .	. .	. .	. .	. .	55.1			
		9 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	54.1			
		9 40	. .	. .	. .	. .	. .	. .	. .	29.996	60.0	52.5			

ZONE 107. APRIL 9. C. $D_0 = -30° 49' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
29	9.10	. .	. .	. .	. .	. .	37.	. .	9 20 1.14	+ 0.60	−0.76	VI.	4	49.672	− 9 23.14	−15.37	−0.99	9 20 0.98	−30 58 39.50
30	9.10	. .	. .	. .	34.	. .	10.	. .	22 34.06	0.60	0.81	IV.	4	46.831	12 21.62	15.93	1.42	22 33.85	31 1 38.97
31	9	. .	. .	3.	. .	39.1	. .	. .	24 21.05	0.60	0.95	IV.	3	35.138	24 37.73	16.33	3.21	24 20.70	13 57.27
32	7.8	. .	. .	3.2	21.	39.5	. .	. .	24 21.25	0.60	0.95	IV.	3	35.246	24 31.01	16.33	3.20	24 20.90	13 50.54
33	7.8	. .	. .	. .	8.	25.7	43.8	. .	25 7.85	0.60	0.94	IV.	3	36.278	23 26.33	16.50	3.03	25 7.51	12 45.86
34	9	. .	. .	. .	. .	. .	. .	16.8	25 22.84	0.60	0.88	VII.	3	40.552	18 58.43	16.57	2.37	25 22.56	8 17.37
35	8	. .	57.2	16.	33.7	. .	9.7	. .	27 33.68	0.61	1.00	IV.	3	32.362	27 32.00	17.06	3.63	27 33.29	16 52.69
36	8	. .	59.2	18.	35.7	54.	12.	. .	27 35.79	0.61	1.04	IV.	3	27.910	32 11.06	17.06	4.32	27 35.36	21 32.44
37	9	. .	. .	54.	. .	. .	. .	. .	30 12.04	0.61	1.21	III.	2	15.543	45 8.02	17.63	6.28	30 11.44	34 31.93
38	7	. .	. .	25.3	43.	1.	20.	. .	30 43.31	0.61	1.15	IV.	2	19.505	40 59.55	17.74	5.49	30 42.77	30 22.78
39	9.10	. .	. .	. .	. .	. .	. .	46.	30 51.87	0.61	1.15	VII.	2	19.5	. . .	17.76	5.49	30 51.33	
40	9.10	. .	. .	. .	. .	41.3	. .	. .	32 23.16	0.61	1.26	V.	2	11.136	49 44.83	18.11	6.98	32 22.51	39 9.92
41	9	. .	45.8	3.5	21.4	. .	. .	. .	35 21.63	0.61	1.17	IV.	2	19.281	41 13.68	18.73	5.68	35 21.07	30 38.09
42	9	. .	39.	. .	15.2	32.8	. .	. .	36 15.01	0.61	0.84	IV.	4	46.619	12 35.04	18.95	1.45	36 14.78	1 55.44
43	9	. .	. .	. .	48.	6.2	. .	. .	36 48.12	0.61	0.89	IV.	4	42.726	16 39.13	19.07	2.02	36 47.84	6 0.22
44	9.10	. .	. .	8.	26.2	44.2	1.2	. .	38 25.88	0.61	1.21	IV.	2	16.186	43 48.12	19.41	6.07	38 25.28	33 13.60
45	9.10	. .	. .	. .	. .	. .	. .	. .	38	0.61	1.12	IV.	3	23.758	36 31.65	19.33	4.97	38	25 55.95
46	9.10	. .	17.2	35.	53.	. .	. .	. .	40 53.14	0.62	1.22	IV.	3	16.291	44 20.44	19.95	6.15	40 52.54	31 33 46.54
47	9.10	. .	. .	. .	9.5	. .	. .	. .	41 9.47	0.62	0.79	IV.	4	52.012	6 56.78	19.99	0.64	41 9.30	30 56 17.41
48	8	. .	. .	49.	7.	25.3	43.	. .	47 7.07	0.62	1.12	IV.	3	25.862	34 19.57	21.20	4.65	47 6.57	31 23 45.42
49	9	. .	. .	32.7	50.	8.7	26.7	. .	49 50.49	0.63	1.27	IV.	3	13.037	47 44.49	21.75	6.68	49 49.85	37 12.92
50	9	. .	. .	1.	19.2	37.	55.	. .	51 19.08	0.63	0.92	IV.	4	43.852	15 28.45	22.04	1.83	51 18.79	4 52.32
51	9	. .	. .	. .	20.3	. .	56.3	. .	52 20.31	0.63	1.13	IV.	3	25.726	34 28.16	22.24	4.67	52 19.81	23 55.07
52	9.10	. .	. .	. .	. .	13.	. .	. .	53 54.93	0.63	1.17	V.	3	22.531	37 49.03	22.56	5.17	53 54.39	27 16.76
53	9	. .	15.7	34.	52.	. .	. .	. .	55 51.92	0.64	1.00	IV.	3	37.248	22 25.42	22.92	2.88	55 51.56	11 51.22
54	8	. .	. .	48.	6.	23.7	42.	. .	56 5.94	0.64	1.04	IV.	3	34.339	25 27.97	22.97	3.31	56 5.54	14 54.25
55	9.10	. .	. .	. .	. .	. .	. .	25.	56 30.97	0.64	1.08	VII.	3	30.971	28 59.33	23.05	3.84	56 30.53	18 26.22
56	9	. .	. .	12.8	30.7	48.8	. .	. .	9 58 30.77	0.64	1.18	IV.	3	24.055	36 13.08	23.44	4.94	9 58 30.23	25 41.46
57	9.10	. .	. .	. .	. .	. .	39.7	. .	10 0 3.82	0.64	0.91	IV.	4	46.679	12 31.21	23.74	1.39	10 0 3.55	1 56.34
58	8	. .	. .	. .	21.5	39.4	57.4	. .	1 21.44	0.65	1.11	IV.	3	29.845	30 9.66	23.98	4.02	1 20.98	19 37.66
59	9.10	. .	. .	15.7	33.2	51.5	. .	. .	4 51.50	0.65	1.11	IV.	3	30.908	29 2.97	24.65	3.86	4 51.04	31 18 31.48
60	9.10	. .	. .	. .	. .	. .	30.7	48.5	4 54.73	0.65	0.88	VI.	4	49.855	9 11.60	24.66	0.92	4 54.50	30 58 37.18
61	9.10	. .	. .	. .	. .	. .	. .	. .	7	0.66	0.94	.	4	46.919	12 16.09	25.07	1.38	7	31 1 42.54
62	8.9	. .	30.5	48.7	. .	. .	43.	. .	9 6.76	0.66	1.20	IV.	3	23.875	36 24.25	25.47	4.97	9 6.22	25 54.69
63	9	. .	21.3	. .	57.9	. .	. .	. .	11 57.60	0.67	0.92	IV.	4	47.965	11 10.50	26.01	1.21	11 57.35	0 37.72
64	9	. .	. .	24.7	43.	. .	. .	. .	12 42.87	0.67	1.01	IV.	3	40.671	18 50.66	26.14	2.34	12 42.53	8 19.14
65	7	. .	12.	30.	48.	6.3	24.1	. .	13 48.10	0.68	0.96	IV.	4	44.952	14 19.45	26.34	1.66	13 47.82	3 47.45
66	9.10	. .	55.	. .	. .	49.	. .	. .	15 31.03	0.68	1.38	IV.	2	10.768	50 7.72	26.64	7.08	15 30.33	39 41.44
67	9.10	. .	. .	19.	. .	. .	. .	. .	15 37.04	0.68	1.35	III.	2	13.	. . .	26.66	6.72	15 36.37	
68	9.10	. .	. .	. .	48.	7.	. .	. .	15 48.46	0.68	1.35	IV.	2	13.113	47 40.66	26.70	6.70	15 47.79	37 14.06
69	8.9	. .	10.2	28.5	. .	5.	. .	41.	19 46.66	0.69	1.28	IV.	2	20.202	40 15.81	27.43	5.55	19 46.07	29 48.79
70	8.9	. .	. .	40.7	. .	16.2	34.2	. .	19 58.38	0.69	1.09	IV.	3	35.859	23 52.38	27.46	3.09	19 57.98	13 22.93
71	9	. .	34.7	53.	11.	. .	. .	. .	22 10.97	0.70	1.31	IV.	2	18.610	41 55.66	27.79	5.81	22 10.36	31 29.26
72	9	. .	39.	57.2	15.7	. .	. .	. .	23 15.35	0.70	1.25	IV.	3	23.399	36 54.38	27.96	5.04	23 14.80	26 27.38
73	9	. .	40.7	57.8	15.2	. .	. .	. .	25 15.89	0.71	1.00	IV.	4	44.536	14 45.73	28.27	1.73	25 15.60	31 4 15.73
74	9	. .	. .	. .	43.	1.	19.	. .	25 43.05	0.71	0.92	IV.	4	50.915	8 5.50	28.33	0.76	25 42.84	30 57 34.59
75	8.9	. .	. .	10.7	29.8	. .	. .	. .	29 29.25	0.72	1.00	IV.	4	45.345	13 55.06	28.92	1.61	29 28.97	31 3 25.59
76	7	. .	. .	59.	17.3	35.2	53.5	. .	30 17.28	0.72	0.95	IV.	4	48.392	10 43.97	29.03	1.15	30 17.05	31 0 14.15
77	9	. .	. .	33.5	51.7	9.6	. .	. .	10 31 51.59	+ 0.73	−0.92	IV.	4	51.468	− 7 31.01	−29.25	−0.68	10 31 51.40	−30 57 0.94

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 107	April 9, 9 50	70 9 56.9	66.3	55.9	64.7	46.9	63.1	58.97						
	10 20	. .	. .	. .	. .	. .	. .	. .	29.990	58.1	50.2			
	11 0	55.9	66.9	55.9	65.2	46.8	63.0	58.95	29.988	58.0	49.6	56.4	56.0	

REMARKS.

(107) 59. Transit over middle thread assumed to be recorded against T. V.

ZONE 107. APRIL 9. C. $D_{\circ} = -30° 49' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
78	9	..	10.	28.	46.5	..	..	..	10 33 46.18	+ 0.73	−1.07	III.	3	40.368	−19 9.42	−29.54	−2.39	10 33 45.84	−31 8 41.35
79	9	..	..	..	22.2	39.7	58.	..	34 22.02	0.73	1.02	IV.	4	45.472	13 47.03	29.61	1.59	34 21.73	31 3 18.23
80	7	..	43.2	0.7	19.	..	..	12.7	36 18.91	0.74	0.96	IV.	3	50.149	8 56.24	29.91	0.88	36 18.69	30 58 27.03
81	7	..	..	..	..	42.2	0.7	18.6	36 24.46	0.74	1.22	V.	3	28.498	31 34.61	29.92	4.23	36 23.98	31 21 8.76
82	7	..	37.	54.5	12.7	31.	49.	..	40 12.87	0.75	0.92	IV.	4	54.533	4 18.83	30.48	0.21	41 12.70	30 53 49.52
83	9.10	..	..	..	..	..	..	59.	40 5.00	0.75	1.16	VII.	3	34.	. . .	30.46	3.36	40 4.59	
84	9	..	..	..	..	..	59.7	17.5	43 23.46	0.77	1.41	VI.	2	14.169	46 34.32	30.96	6.54	43 22.82	31 36 11.82
85	9	..	..	..	..	6.2	25.	..	43 48.63	0.77	1.10	V.	3	40.340	19 11.80	31.02	2.39	43 48.30	8 44.21
86	9	..	21.	38.2	56.2	..	..	..	45 56.46	0.78	1.04	IV.	3	45.176	14 8.17	31.34	1.63	45 56.20	3 41.14
87	8.9	..	..	27.	44.	3.	21.	..	46 44.73	0.78	1.36	IV.	2	18.399	42 9.03	31.46	5.85	46 44.15	31 46.34
88	9	..	58.2	..	..	..	10.	..	48 34.17	0.79	1.01	IV.	4	48.494	10 37.51	31.75	1.14	48 33.95	31 0 10.40
89	7	..	..	..	46.2	4.5	22.	..	48 46.28	0.79	0.99	IV.	4	49.381	9 41.95	31.78	0.99	48 46.08	30 59 14.72
90	9	..	..	..	6.2	24.6	42.1	..	50 6.32	0.79	1.18	IV.	3	35.418	24 20.28	31.97	3.16	50 5.93	31 13 55.41
91	9	..	..	..	..	..	11.	29.	50 35.06	0.79	1.10	VI.	3	42.127	17 19.65	32.04	2.10	50 34.75	6 53.79
92	9	..	..	..	36.	54.	12.	..	52 35.98	0.80	1.32	IV.	3	23.619	36 40.45	32.34	5.00	52 35.46	26 17.79
93	9	..	..	..	..	..	30.2	48.	52 53.99	0.80	1.38	VI.	2	18.621	41 54.91	32.39	5.81	52 53.41	31 33.11
94	7	..	..	..	..	..	..	..	54	0.81	1.05	VII.	4	46.379	12 49.39	32.55	1.45	54	2 23.39
95	7.8	..	31.5	50.	7.5	25.3	43.4	..	56 7.56	0.82	1.13	IV.	4	39.897	19 36.50	32.86	2.45	56 7.25	9 11.81
96	9	..	..	15.	..	51.2	..	..	57 33.09	0.82	1.21	IV.	3	33.361	26 29.33	33.06	3.47	57 32.70	16 5.86
97	9	..	..	..	..	..	..	..	10 58	0.83	1.29	.	3	27.533	32 34.91	33.14	4.39	58	22 12.44
98	9	..	28.2	46.2	4.7	..	..	..	11 1 4.39	0.84	1.22	IV.	3	32.950	26 54.86	33.57	3.52	11 1 4.01	16 31.95
99	9	..	..	..	..	57.	15.	..	1 39.01	0.84	1.20	V.	3	34.825	24 57.49	33.65	3.24	1 38.65	14 34.38
100	7	..	..	..	..	0.	17.7	36.	11 2 41.79	+ 0.84	−1.41	V.	2	17.040	−43 34.18	−33.79	−6.09	11 2 41.22	−31 33 14.06

ZONE 108. APRIL 9. C. $D_{\circ} = -30° 49' 0''$.

No.	Mag.	I	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	32.	50.	8.	26.2	..	..	12 22 8.06	+ 1.32	−1.03	IV.	3	35.708	−24 1.91	−42.07	−3.09	12 22 8.35	−31 13 47.07
2	8	..	32.1	50.2	8.	26.2	..	..	24 8.16	1.34	1.13	IV.	2	8.561	52 26.45	42.19	7.52	24 8.37	42 16.16
3	8	..	..	..	38.2	56.3	15.	..	24 38.43	1.34	1.13	IV.	2	12.518	48 18.07	42.22	6.86	24 38.64	38 7.15
4	8	..	..	..	..	50.	8.	..	25 31.89	1.35	1.14	V.	2	13.052	47 44.49	42.27	6.77	25 32.10	37 33.53
5	8	..	..	..	..	26.	44.	..	26 7.87	1.35	1.14	V.	2	10.110	50 49.22	42.31	7.24	26 8.08	40 38.77
6	8	..	..	..	..	..	..	9.	26 14.99	1.35	1.05	VII.	3	33.709	26 7.56	42.32	3.41	26 15.29	15 53.29
7	9	..	..	51.2	..	27.8	45.7	..	28 9.59	1.37	1.03	IV.	3	40.968	18 31.96	42.43	2.24	28 9.93	8 16.63
8	8.9	..	..	..	54.	12.	30.2	..	28 54.07	1.37	1.06	IV.	3	28.910	31 8.32	42.48	4.19	28 54.38	20 54.99
9	9	..	..	..	52.7	..	28.3	..	29 52.47	1.38	1.14	IV.	2	13.118	47 40.35	42.53	6.76	29 52.71	31 37 29.64
10	8.9	..	24.3	42.	0.	17.8	36.1	..	33 0.07	1.41	0.98	IV.	4	53.895	4 58.65	42.69	0.26	33 0.50	30 54 41.60
11	9	..	..	51.	9.	25.	..	..	34 8.32	1.42	0.99	IV.	4	49.179	9 54.49	42.74	1.00	34 8.75	30 59 38.23
12	9.10	..	..	33.7	52.	10.	..	..	37 51.90	1.44	1.02	IV.	4	45.025	14 14.94	42.92	1.62	37 52.32	31 3 59.48
13	8.9	..	25.	43.	..	18.7	36.6	..	38 0.86	1.44	1.01	IV.	4	52.186	6 46.00	42.93	0.51	38 1.29	30 56 29.44
14	9	..	..	..	..	..	..	15.7	38 21.81	1.45	1.00	VII.	4	50.098	8 56.05	42.95	0.84	38 22.26	30 58 39.84
15	8	..	..	..	..	31.2	49.1	6.8	40 12.94	1.46	1.11	V.	2	20.012	40 27.66	43.04	5.62	40 13.29	31 30 16.32
16	9	..	0.	18.1	36.1	..	..	..	43 36.09	1.50	1.06	IV.	3	35.879	23 51.12	43.19	3.07	43 36.53	13 37.38
17	9	..	..	34.2	52.6	10.	..	..	44 52.27	1.50	1.03	IV.	4	46.482	12 43.68	43.25	1.40	44 52.74	2 28.33
18	8	..	50.7	9.	26.5	..	3.	..	49 26.83	1.54	1.12	IV	2	21.038	39 23.21	43.47	5.46	49 27.25	29 12.14
19	8.9	..	24.	42.	0.	17.8	36.	..	52 59.97	1.57	1.08	IV.	3	35.571	24 10.62	43.59	3.11	52 0.46	13 57.32
20	8.9	..	42.	0.	..	36.	..	..	52 18.00	1.57	1.06	IV.	3	42.162	17 17.21	43.57	2.06	52 18.51	31 7 2.84
21	9	..	48.9	..	25.	42.5	..	..	54 24.80	1.58	1.03	IV.	4	50.530	8 29.84	43.65	0.76	54 25.35	30 58 14.25
22	9.10	..	..	..	..	38.5	..	..	12 59 20.38	+ 1.62	−1.17	V.	2	13.124	−47 40.04	−43.84	−6.76	12 59 20.83	−31 37 30.64

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(107) 82. Minutes assumed as 41 instead of 40.

(108) 19. Minutes assumed as 51, not 52.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 108	April 9, 12 20		..	..	..	..	..	..	29.982	53.5	46.2			
	12 40	..	..	..	..	..	..	..	..	..	45.9			
	13 0	70 9 54.4	67.8	55.4	66.3	46.9	62.1	58.82	29.986	53.0	45.0	53.0	53.0	
	13 30	..	..	..	..	..	..	..	..	..	44.7			
	13 40	..	..	..	..	..	..	..	29.982	..	44.7			
	14 0	53.8	68.5	55.5	67.0	46.7	62.0	58.92	29.872	52.0	44.2	53.0	53.0	60.0

ZONE 108. APRIL 9. C. $D_0 = -30° \; 49' \; 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	9	. .	. .	45.5	3.2	21.5	39.5	. .	13 1 3.44	+ 1.63	−1.08	IV.	3	36.420	−23 17.42	−43.88	−2.97	13 1 3.99	−31 13 4.27
24	8.9	. .	. .	. .	58.1	16.	34.	. .	1 58.04	1.64	1.10	IV.	3	32.098	27 48.43	43.90	3.67	1 58.58	17 36.00
25	.	. .	. .	37.2	. .	. .	. .	. .	3 55.25	1.66	1.18	III.	3	11.444	49 24.22	43.94	7.07	3 55.73	39 15.23
26	8	. .	. .	. .	28.7	46.6	4.5	22.8	4 28.70	1.67	1.05	IV.	4	45.296	13 58.14	43.95	1.55	4 29.32	3 43.64
27	9.10	. .	. .	. .	. .	. .	22.	40.7	5 46.28	1.67	1.13	VI.	3	22.762	37 34.46	43.98	5.19	5 46.82	27 23.63
28	9	. .	34.	. .	10.	. .	. .	. .	10 10.04	1.71	1.11	IV.	3	30.972	28 59.01	44.07	3.84	10 10.64	18 46.92
29	9.10	. .	. .	. .	. .	. .	47.8	. .	10 11.80	1.71	1.11	VI.	3	29.560	30 28.04	44.07	4.06	10 12.40	20 16.17
30	9.10	. .	31.3	. .	. .	. .	. .	. .	13 7.42	1.73	1.15	II.	2	18.058	42 29.74	44.09	5.98	13 8.00	32 19.81
31	9.10	. .	. .	0.	. .	. .	. .	. .	13 18.04	1.73	1.15	III.	2	19.581	40 54.53	44.09	5.73	13 18.62	30 44.35
32	9.10	. .	. .	2.	. .	. .	. .	. .	13 20.04	1.74	1.16	III.	2	17.788	42 46.93	44.09	6.02	13 20.62	32 37.04
33	9	. .	. .	. .	. .	. .	. .	. .	15	1.75	1.18	VII.	2	15.860	44 47.74	44.07	6.33	15	34 38.14
34	9.10	. .	59.	. .	34.7	. .	10.8	. .	21 34.86	1.80	1.15	IV.	3	25.381	34 50.01	44.12	4.76	21 35.51	24 38.89
35	8.9	. .	. .	49.2	7.	25.5	. .	. .	23 7.24	1.82	1.14	IV.	3	28.038	32 3.10	44.12	4.34	22 7.92	21 51.56
36	8.9	. .	. .	. .	56.5	14.5	32.9	. .	23 56.64	1.83	1.12	IV.	3	32.732	27 8.59	44.11	3.57	23 57.35	16 56.27
37	9	. .	. .	. .	. .	12.	. .	. .	24 53.97	1.84	1.12	V.	3	32.537	27 21.21	44.11	3.60	24 54.69	17 8.92
38	9	. .	. .	. .	. .	. .	. .	44.	24 50.05	1.84	1.09	VII.	4	42.518	16 51.49	44.11	1.99	24 50.80	6 37.59
39	8	. .	. .	. .	43.	. .	19.3	. .	26 43.16	1.84	1.16	IV.	3	23.671	36 37.13	44.10	5.04	26 43.84	26 26.27
40	8	. .	. .	. .	16.	33.7	52.2	. .	27 15.91	1.85	1.20	IV.	2	14.379	46 21.32	44.10	6.60	27 16.56	36 12.02
41	8.9	. .	. .	. .	. .	33.4	51.8	10.	28 15.59	1.86	1.22	V.	2	12.549	48 16.13	44.09	6.90	28 16.23	38 7.12
42	8.9	. .	. .	. .	8.	26.	43.7	. .	29 7.84	1.88	1.20	IV.	2	14.990	45 42.78	44.09	6.46	29 8.52	35 33.33
43	9	. .	. .	. .	. .	. .	. .	33.7	29 39.58	1.88	1.18	VII.	3	21.889	38 29.12	44.08	5.33	29 40.28	28 18.53
44	8.9	. .	0.7	19.	. .	55.	. .	. .	35 36.90	1.93	1.09	IV.	4	45.483	13 46.34	44.01	1.52	35 37.74	3 31.87
45	9.10	. .	. .	24.	42.	0.2	. .	. .	36 42.06	1.94	1.20	IV.	2	16.325	44 19.19	43.99	6.25	36 42.80	34 9.43
46	9	. .	. .	46.5	4.8	23.	. .	. .	39 4.75	1.96	1.23	IV.	2	10.151	50 46.65	43.96	7.28	39 5.48	40 37.89
47	9.10	. .	. .	. .	. .	51.	. .	. .	39 32.92	1.97	1.19	V.	3	21.021	39 23.65	43.96	5.47	39 33.70	29 13.08
48	9.10	. .	. .	. .	. .	. .	46.	. .	40 9.95	1.97	1.18	VI.	3	22.588	37 45.52	43.95	−5.22	40 10.74	31 27 34.69
49	5	. .	. .	. .	24.2	42.	0.7	. .	43 24.36	2.02	1.06	IV.	4	56.168	2 36.26	43.90	+0.15	43 25.32	30 52 20.01
50	6	. .	. .	. .	. .	52.	10.	28.2	45 34.09	2.03	1.13	V.	3	38.338	21 17.37	43.86	−2.66	44 34.99	31 11 3.89
51	8	. .	. .	. .	. .	. .	. .	35.7	45 41.65	2.03	1.16	VII.	3	28.582	31 29.28	43.86	4.25	45 42.52	21 17.39
52	8.9	. .	. .	. .	. .	. .	. .	. .	47	2.04	1.16	VII.	3	28.320	31 45.84	43.84	4.29	46	21 33.97
53	8.9	. .	6.2	. .	42.	59.8	18.	. .	50 59.94	2.07	1.09	IV.	4	48.244	10 53.19	43.77	1.11	51 0.92	31 0 38.07
54	6.7	. .	43.	1.	19.	. .	54.7	. .	54 18.94	2.10	1.11	IV.	4	51.066	7 56.10	43.69	0.64	54 19.93	30 57 40.43
55	9.10	. .	26.7	44.7	. .	. .	39.	. .	56 2.82	2.12	1.20	IV.	3	26.658	33 29.75	43.65	4.56	56 3.74	31 23 17.96
56	9.10	. .	13.	31.3	49.7	. .	. .	. .	13 58 49.34	2.15	1.15	IV.	3	39.906	19 38.51	43.59	2.39	13 58 50.34	9 24.49
57	8	. .	29.2	47.	. .	23.2	41.	. .	14 2 5.10	2.18	1.19	IV.	3	28.028	32 3.72	43.49	4.34	14 2 6.09	21 51.55
58	9	. .	. .	. .	18.	36.	. .	. .	2 18.01	2.18	1.18	IV.	3	29.559	30 27.79	43.48	4.10	2 19.01	20 15.37
59	8.9	. .	. .	. .	. .	. .	17.8	35.7	2 41.67	2.18	1.21	VI.	3	22.636	37 42.51	43.46	5.23	2 42.64	27 31.20
60	8.9	. .	30.3	48.2	6.8	. .	. .	. .	5 6.47	2.20	1.18	IV.	3	29.468	30 33.56	43.38	4.11	5 7.49	20 21.05
61	9	. .	. .	39.	56.8	. .	. .	. .	5 56.90	2.21	1.13	IV.	4	44.191	15 7.37	43.35	1.70	5 57.98	4 52.42
62	9	. .	. .	. .	. .	23.2	42.	. .	6 5.50	2.22	1.24	V.	2	14.539	46 11.28	43.34	6.61	6 6.48	36 1.23
63	7.8	. .	. .	. .	. .	. .	. .	23.5	14 7 29.45	+ 2.23	−1.19	VII.	3	28.491	−31 35.05	−43.29	−4.26	14 7 30.49	−31 21 22.60

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(108) 35. Minutes assumed as 22 instead of 23.

(108) 50. Minutes assumed as 44 instead of 45.

(108) 53. Transit across T. I. assumed to be recorded as over T. II.

ZONE 109. APRIL 13. C. $D_0 = -28° 56' 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7.8	..	..	..	..	..	35.	52.4	9 41 59.46	..	..	VI.	2	19.561	−40 55.97	− 5.67	−5.41	....	−29 37 37.05
2	8	..	..	..	29.	46.7	4.	21.7	43 28.90	..	..	IV.	4	43.724	15 36.53	5.93	2.18	....	12 14.64
3	9.10	..	..	..	4.	21.7	..	..	47 4.03	..	..	IV.	3	38.759	20 50.52	6.55	2.85	....	17 29.92
4	9	..	23.7	41.	..	15.3	..	..	49 58.43	..	..	IV.	3	31.873	28 2.43	7.06	3.76	....	24 43.25
5	9	..	22.5	40.	..	14.	..	..	49 57.27	..	..	IV.	4	42.440	16 57.19	7.06	2.35	....	13 36.60
6	9	..	14.7	32.	50.	7.6	24.	..	51 49.66	..	..	IV.	3	26.610	33 32.77	7.39	4.46	....	30 14.62
7	9.10	..	..	..	15.2	..	..	..	53 15.24	..	..	IV.	3	24.054	36 13.14	7.63	4.80	....	32 25.57
8	9	..	..	..	..	..	57.	..	54 21.75	..	..	VI.	4	40.342	19 8.47	7.83	2.62	....	15 48.92
9	8	..	..	..	..	..	..	15.5	56 22.43	..	..	VI.	3	24.058	36 13.21	8.19	4.80	....	32 56.20
10	8	..	..	..	..	..	..	43.	56 49.94	..	..	VII.	3	25.356	34 51.83	8.27	4.63	....	31 34.73
11	9	..	..	..	27.	45.	2.7	..	58 27.22	..	..	IV.	3	25.982	34 12.10	8.57	4.54	....	30 55.21
12	9	..	..	..	45.7	..	..	..	9 59 45.74	..	..	IV.	3	33.071	26 47.40	8.80	3.60	....	23 29.80
13	9	..	..	48.7	..	23.7	41.5	..	10 1 6.17	..	..	IV.	3	26.208	33 58.04	9.02	4.52	....	30 41.58
14	9	..	..	..	4.	..	35.	..	2 0.4	..	..	IV.	4	42.048	17 21.66	9.18	2.40	10 1 57.8	14 3.24
15	8	..	..	..	43.	1.3	18.5	..	6 43.22	..	..	IV.	2	16.106	44 32.87	10.00	5.89	....	41 18.76
16	8.9	..	8.	26.	43.7	..	..	..	13 43.64	..	..	IV.	2	12.079	48 45.56	11.22	6.44	....	45 33.22
17	8	..	..	26.	43.3	1.3	..	..	14 43.53	..	..	IV.	4	44.951	14 19.52	11.39	2.00	....	11 2.91
18	7	..	48.	5.3	23.7	..	59.2	..	16 23.48	..	..	IV.	3	32.361	27 32.06	11.68	3.70	....	24 17.44
19	9	..	..	25.	..	1.2	..	..	16 43.09	..	..	IV.	3	35.708	24 1.91	11.73	3.24	....	20 46.88
20	8	..	..	..	..	..	..	52.7	16 59.64	..	..	VII.	3	25.485	34 43.73	11.77	4.62	....	31 30.12
21	9	..	46.2	4.7	22.	..	..	..	19 2.98	..	..	IV.	3	32.762	27 6.71	12.13	3.64	....	23 52.48
22	9	..	..	..	34.	52.	..	..	19 34.18	..	..	IV.	3	41.222	18 16.16	12.22	2.50	....	15 0.88
23	9	..	..	..	..	16.2	34.	52.3	19 58.86	..	..	V.	3	37.778	21 52.23	12.30	2.97	....	18 37.50
24	9	..	53.	10.5	28.2	..	..	..	10 22 28.31	..	..	IV.	2	11.252	−49 31.32	−12.73	−6.54	....	−29 46 20.59

ZONE 110. APRIL 16. C. $D_0 = -27° 4' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
1	7.8	..	..	..	17.2	34.	51.1	..	10 5 16.27	− 2.50	−1.37	IV.	2	12.889	−47 54.60	− 0.99	−6.04	10 5 12.40	−27 52 1.63
2	9	..	..	..	53.5	11.2	28.3	..	6 53.61	2.50	0.96	IV.	4	49.891	9 9.72	1.27	1.69	6 50.15	13 12.68
3	9	..	24.7	..	..	..	..	..	8 59.71	2.50	1.25	II.	3	23.501	36 47.03	1.63	4.76	8 55.96	40 53.42
4	7.8	..	..	..	19.2	35.7	52.9	10.2	9 18.00	2.50	1.37	IV.	2	12.690	48 7.15	1.68	6.06	9 14.13	52 14.89
5	8	..	19.7	38.	56.	..	..	..	11 55.08	2.50	1.14	IV.	3	32.924	26 56.48	2.12	3.64	11 51.44	31 2.24
6	8	..	..	..	..	20.5	38.	55.2	12 3.04	2.50	1.25	V.	3	23.169	37 9.00	2.13	4.80	11 59.29	41 15.93
7	8.9	..	8.2	26.8	44.7	1.4	..	..	14 43.80	2.50	1.13	IV.	3	33.569	26 16.22	2.57	3.57	14 40.17	30 22.36
8	8.9	..	23.2	42.2	0.	..	..	..	16 58.99	2.49	0.97	IV.	4	47.721	11 25.86	2.95	1.95	16 55.53	15 30.76
9	8.9	..	..	55.2	12.8	..	47.3	4.3	22 12.23	2.49	1.25	IV.	3	21.708	38 40.29	3.79	4.98	22 8.49	42 49.06
10	6	1.6	17.7	36.6	53.8	..	28.2	45.6	24 53.38	2.48	1.09	IV.	3	35.826	23 54.45	4.21	3.31	24 49.81	28 1.97
11	9	..	12.7	30.7	..	6.2	..	..	26 48.15	2.48	1.23	IV.	3	22.782	37 32.84	4.51	4.85	26 44.44	41 42.20
12	8.9	..	..	21.	38.2	55.2	..	..	30 37.96	2.47	0.97	IV.	4	45.891	13 20.56	5.11	2.15	30 34.52	17 27.82
13	9	..	..	12.	29.5	..	3.4	..	31 29.02	2.47	0.99	IV.	4	43.478	15 52.09	5.24	2.41	31 25.56	19 59.74
14	9	..	..	..	..	48.	6.	..	31 30.97	2.47	1.05	V.	4	38.216	21 22.00	5.24	3.03	31 27.45	25 30.27
15	9	..	41.3	0.7	18.5	35.2	..	..	34 17.47	2.47	1.00	IV.	4	42.448	16 56.68	5.66	2.54	34 14.00	21 4.88
16	9	..	35.	..	12.	28.2	..	..	36 10.62	2.46	1.26	IV.	2	19.172	41 20.46	5.95	5.26	36 6.90	45 31.67
17	9	..	46.3	4.8	..	39.5	..	..	37 21.82	2.46	1.24	IV.	2	20.029	40 26.54	6.13	5.18	37 18.12	44 37.85
18	9	..	51.	..	27.4	..	1.1	..	39 26.39	2.46	1.01	IV.	4	41.008	18 26.89	6.44	2.71	39 22.92	22 36.04
19	8.9	..	51.2	..	27.7	..	1.6	19.	39 26.79	2.46	0.99	IV.	4	42.402	16 59.64	6.44	2.54	39 23.34	21 8.62
20	9	..	..	..	..	21.2	..	56.3	46 3.93	2.44	1.13	V.	3	29.371	30 39.90	7.38	4.07	46 0.36	34 51.35
21	9	..	51.3	..	28.	..	..	..	10 48 26.85	− 2.44	−0.91	IV.	4	49.329	− 9 45.22	− 7.72	−1.76	10 48 23.50	−27 13 54.70

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 109	April 13,	9 40	..	..	..	..	..	..	..	30.132	55.8	50.5			
		10 20	{68 17 26.2	36.1	25.0	36.2	15.8	32.2	}28.39{	30.138	54.5	49.8	53.7	53.5	59.8
			24.8	34.8	25.6	36.7	15.8	31.5		..	..	50.7			
Zone 110	April 16,	10 5	66 24 56.3	70.1	56.9	69.9	49.9	63.6	61.12	..	..	45.7	..	56.7	53.5
		10 20	..	..	..	..	..	..	..	30.038	54.0	45.5	..	53.7	
		10 40	..	..	..	..	..	..	..	..	..	45.3			
		10 50	56.1	70.9	57.7	69.9	50.3	63.6	61.42	30.035	52.5	45.2	..	52.6	51.4

ZONE 110. APRIL 16. C. $D_0 = -27° 4' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	8.9	. .	22.	40.2	58.2	14.8	. .	. .	10 49 57.30	− 2.43	−1.18	IV.	3	23.942	−36 20.04	− 7.96	−4.70	10 49 53.69	−27 40 32.70
23	8.9	. .	. .	35.	52.8	9.7	. .	. .	50 52.23	2.43	1.08	IV.	3	33.201	26 39.31	8.07	3.62	50 48.72	30 51.00
24	9.	. .	. .	43.5	1.5	18.7	35.7	. .	10 52 0.90	− 2.43	−1.16	IV.	3	25.317	−34 54.02	− 8.24	−4.55	10 51 57.31	−27 39 6.81

ZONE 111. APRIL 21. C. $D_0 = -26° 26' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	. .	20.5	37.3	55.	12.	29.7	. .	10 26 54.85	− 5.01	−0.59	IV.	4	50.846	− 8 9.84	− 3.08	−0.80	10 26 49.25	−26 34 33.72
2	5	54.	10.8	28.2	46.	. .	22.5	37.7	29 45.96	5.01	0.58	IV.	3	33.431	26 24.93	3.51	2.62	29 40.37	52 51.06
3	4	. .	42.6	. .	17.5	34.	51.7	. .	30 17.09	5.01	0.60	IV.	4	47.329	11 50.64	3.58	1.17	30 11.48	38 15.39
4	8	. .	9.7	27.	44.7	. .	. .	. .	38 44.23	5.00	0.60	IV.	4	42.255	17 8.80	4.77	1.68	38 38.63	26 43 35.25
5	7	. .	21.5	39.5	37.	13.8	31.	. .	10 41 56.38	− 5.00	−0.60	IV.	2	19.381	−41 7.39	− 5.23	−4.14	10 41 50.78	−27 7 36.76

ZONE 112. MAY 4. P. $D_0 = -26° 26' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	15.	32.5	50.3	. .	. .	. .	11 47 49.68	−11.72	−0.75	IV.	3	32.534	−27 21.14	− 0.75	−2.72	11 47 37.21	−26 54 4.61
2	8	. .	. .	. .	. .	. .	. .	59.	48 6.82	11.72	0.66	VII.	1	9.153	51 48.42	0.78	5.37	47 54.44	27 18 34.57
3	6.7	. .	8.	25.5	43.3	. .	. .	. .	50 42.69	11.71	0.75	IV.	3	35.730	24 0.53	1.04	2.36	50 30.23	26 50 43.93
4	8.9	. .	. .	. .	. .	. .	. .	10.	51 18.38	11.71	0.81	VII.	4	49.630	9 25.53	1.10	0.82	51 5.86	36 7.45
5	8	. .	. .	. .	18.5	. .	. .	. .	53 18.26	11.70	0.82	IV.	4	52.615	6 19.04	1.29	0.48	53 5.74	33 0.81
6	8	. .	. .	. .	46.	. .	. .	. .	54 45.47	11.70	0.76	IV.	3	37.704	21 56.69	1.42	2.14	54 33.01	48 40.25
7	8	. .	. .	. .	59.	. .	. .	. .	11 59 58.58	11.69	0.77	IV.	4	43.465	15 52.91	1.92	1.50	11 59 46.12	26 42 36.33
8	7.8	. .	. .	. .	. .	. .	. .	52.	12 1 59.93	11.68	0.66	VII.	2	16.170	44 28.61	2.09	4.58	12 1 47.59	27 11 15.28
9	8	. .	. .	. .	. .	. .	. .	43.	2 50.96	11.68	0.67	VII.	2	18.410	42 8.08	2.16	4.34	2 38.61	8 54.58
10	7	. .	. .	. .	22.	38.	. .	. .	3 20.78	11.68	0.65	IV.	2	13.640	47 7.58	2.20	4.85	3 8.45	27 13 54.63
11	6.7	. .	33.	50.5	8.	. .	. .	. .	6 7.62	11.67	0.81	IV.	4	56.305	2 27.79	2.43	0.08	5 55.14	26 29 10.30
12	8	. .	20.	. .	55.3	. .	. .	. .	7 54.72	11.66	0.74	IV.	4	38.580	20 59.24	2.58	2.05	7 42.32	26 47 43.87
13	8	. .	. .	. .	. .	1.3	. .	. .	8 43.91	11.66	0.67	V.	2	20.170	40 17.82	2.65	4.12	8 31.58	27 7 4.59
14	7.8	. .	25.	42.5	. .	17.	. .	. .	13 59.70	11.65	0.69	V.	3	28.016	32 4.73	3.04	3.24	13 47.36	26 58 51.01
15	8	. .	31.	48.	6.	. .	. .	. .	15 5.41	11.64	0.70	IV.	3	30.950	29 0.33	3.11	2.89	14 53.07	55 46.33
16	5.6	48.3	5.3	. .	40.5	. .	. .	. .	17 39.96	11.63	0.71	IV.	3	31.662	28 15.79	3.29	2.82	17 27.62	55 1.90
17	7	. .	54.	. .	29.	. .	. .	. .	19 28.55	11.63	0.70	IV.	3	34.380	25 25.40	3.42	2.52	19 16.22	26 52 11.34
18	8	41.	. .	16.3	34.	. .	. .	. .	23 33.16	11.62	0.67	IV.	3	26.096	34 5.01	3.62	3.45	23 20.87	27 0 52.08
19	6	. .	. .	. .	. .	46.	3.	. .	24 28.64	11.62	0.74	V.	4	41.905	17 30.44	3.66	1.67	24 16.28	26 44 15.77
20	8.9	. .	. .	. .	. .	. .	. .	59.5	26 7.44	11.61	0.64	VII.	2	16.825	43 47.31	3.74	4.51	25 55.19	27 10 35.56
21	8	. .	. .	. .	34.	. .	. .	. .	28 33.71	11.60	0.76	IV.	4	49.770	9 17.32	3.86	0.80	28 21.35	26 36 1.98
22	7	15.	32.	49.	. .	. .	. .	. .	33 6.52	11.58	0.69	III.	3	33.333	26 31.34	4.02	2.63	32 54.25	26 53 17.99
23	6.7	. .	. .	. .	29.5	. .	3.3	. .	33 28.66	11.58	0.65	IV.	2	22.153	38 13.32	4.03	3.90	33 16.43	27 5 1.25
24	8	. .	. .	. .	. .	. .	. .	20.	35 28.41	11.58	0.76	VII.	4	52.897	6 0.53	4.09	0.46	35 16.07	26 32 45.08
25	7.8	16.	32.5	50.3	. .	. .	. .	. .	40 7.37	11.56	0.72	III.	4	41.665	17 45.67	4.22	1.70	39 55.09	44 31.59
26	5	. .	. .	. .	40.	56.7	. .	. .	40 39.47	11.56	0.71	IV.	4	39.770	19 44.48	4.22	1.91	40 27.20	46 30.61
27	8	. .	. .	. .	7.5	. .	. .	. .	42 6.82	11.55	0.66	IV.	3	30.447	29 32.14	4.24	2.95	41 54.61	26 56 19.33
28	7	. .	. .	. .	53.	. .	. .	. .	42 52.21	11.55	0.64	IV.	3	25.093	35 7.95	4.25	3.56	42 40.02	27 1 55.76
29	7	. .	17.7	35.	52.3	. .	. .	. .	45 52.11	11.54	0.74	IV.	4	50.614	8 24.51	4.27	0.70	45 39.83	26 35 9.48
30	8.9	. .	. .	. .	. .	36.	. .	. .	46 18.73	11.54	0.70	V.	4	41.320	18 7.39	4.27	1.74	46 6.49	26 44 53.40
31	8	. .	. .	. .	. .	. .	. .	15.	47 22.91	11.53	0.60	VII.	2	14.635	46 4.88	4.28	4.75	47 10.78	27 12 53.91
32	7	. .	. .	. .	. .	11.	28.	. .	48 53.72	11.53	0.75	V.	4	51.610	7 21.93	4.30	0.59	48 41.44	26 34 6.82
33	7	. .	3.	. .	38.	. .	. .	. .	53 37.63	11.51	0.74	IV.	4	52.333	6 36.85	4.32	0.52	53 25.38	33 21.69
34	7.8	. .	. .	. .	7.	23.5	. .	. .	12 55 6.43	−11.50	−0.71	IV.	4	44.333	−14 58.54	− 4.32	−1.40	12 54 54.[illegible]	−26 41 44.26

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 111	April 21, 10 26	65 47 28.1	38.8	22.9	35.9	20.1	35.4	30.53	. .	. .	74.6			
		28.1	38.3	23.9	38.2	20.7	36.0							
	30	. .	. .	. .	. .	. .	. .	. .	30.092	70.6	70.6			
	40	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.4	. .	69.5	59.5
Zone 112	May 4, 11 47	. .	. .	. .	. .	. .	. .	. .	30.064	51.4	44.2			
		65 47 34.3	43.4	30.6	44.5	19.4	37.8	34.96	30.218	60.4	54.0	60.0	60.0	
		34.0	42.0	31.0	45.6	19.6	37.4							
	12 30	. .	. .	. .	. .	. .	. .	. .	30.224	59.0	51.4			
	13 00	. .	. .	. .	. .	. .	. .	. .	30.228	58.0	53.0			

ZONE 112. MAY 4. P. $D_0 = -26° 26' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	8	. .	43.	1.	. .	. .	. .	. .	12 58 17.98	−11.49	−0.63	III.	3	27.400	−32 42.93	− 4.33	−3.29	12 58 5.86	−26 59 30.55
36	8	. .	1.	18.5	. .	. .	. .	. .	13 0 35.80	11.48	0.59	III.	2	17.243	43 21.33	4.33	4.47	13 0 23.73	27 10 10.13
37	7	. .	. .	. .	23.2	. .	. .	14.3	1 22.48	11.48	0.64	IV.	3	31.190	28 45.47	4.34	2.87	1 10.36	26 55 32.68
38	7.8	. .	13.5	31.	. .	. .	. .	. .	5 48.16	11.46	0.66	III.	3	36.577	23 7.08	4.39	2.27	5 36.04	49 53.74
39	8	. .	. .	. .	6.	. .	40.	. .	6 5.41	11.46	0.64	V.	3	31.693	28 14.04	4.40	2.82	5 53.31	55 1.26
40	8	. .	. .	. .	31.	. .	. .	. .	7 30.65	11.45	0.70	IV.	4	46.930	12 15.40	4.41	1.10	7 18.50	26 39 0.91
41	8	. .	. .	. .	. .	. .	1.	. .	8 26.25	11.45	0.55	VI.	1	11.403	49 27.24	4.42	5.12	8 14.25	27 16 16.78
42	7	36.	53.3	10.3	. .	. .	. .	. .	12 27.58	11.43	0.70	III.	4	48.716	10 23.40	4.47	0.92	12 15.45	26 37 8.79
43	9	. .	56.	. .	. .	. .	. .	. .	17 30.72	11.41	0.63	II.	3	32.010	27 53.01	4.54	2.78	17 18.68	54 40.33
44	7.8	. .	. .	. .	55.	. .	29.5	. .	17 54.85	11.41	0.68	VI.	4	44.925	14 20.83	4.54	1.32	17 42.74	41 6.69
45	6.7	. .	52.7	10.3	28.	. .	. .	. .	20 27.44	11.40	0.68	IV.	4	48.628	10 29.05	4.58	0.92	20 15.36	37 14.55
46	7	. .	. .	. .	25.	42.	. .	. .	21 24.74	11.39	0.69	IV.	4	49.217	9 52.18	4.59	0.86	21 12.66	36 37.63
47	7	. .	. .	. .	43.5	. .	. .	. .	22 42.93	11.38	0.63	IV.	3	36.465	23 14.60	4.61	2.28	22 30.92	26 50 1.49
48	5.6	. .	. .	. .	. .	43.5	0.5	. .	23 25.88	11.38	0.52	V.	1	7.623	53 24.34	4.63	5.56	23 13.98	27 20 14.53
49	9	. .	. .	. .	. .	8.	. .	. .	24 50.79	11.38	0.69	V.	4	51.113	7 53.09	4.65	0.65	24 38.72	26 34 38.39
50	7	5.5	22.3	40.	57.7	. .	. .	. .	28 57.11	11.36	0.61	IV.	3	33.733	26 5.80	4.72	2.60	28 45.14	52 53.12
51	7	. .	. .	. .	. .	52.	. .	. .	30 34.81	11.35	0.70	V.	4	55.895	2 53.12	4.75	0.12	30 22.76	29 37.99
52	8	. .	. .	. .	. .	2.	. .	. .	31 44.73	11.34	0.65	V.	3	41.670	17 48.25	4.77	1.70	31 32.74	44 34.72
53	5.6	. .	. .	. .	. .	. .	. .	50.3	32 58.52	11.34	0.63	VII.	3	37.627	22 1.98	4.80	2.15	32 46.55	48 48.93
54	8.9	. .	. .	. .	. .	. .	. .	15.	33 23.19	11.34	0.62	VII.	3	35.550	24 12.31	4.80	2.38	33 11.23	26 50 59.49
55	9	. .	. .	24.	. .	. .	. .	. .	35 41.19	11.32	0.58	III.	3	26.707	33 26.23	4.85	3.39	35 29.29	27 0 14.47
56	8	. .	. .	. .	. .	56.	. .	. .	36 38.68	11.32	0.60	V.	3	33.315	26 32.47	4.86	2.64	36 26.76	26 53 19.97
57	7	. .	. .	. .	. .	. .	56.3	. .	37 21.65	11.32	0.56	VI.	2	21.345	39 4.08	4.88	3.99	37 9.77	27 5 52.95
58	7.8	47.7	4.5	22.	40.	. .	. .	. .	42 39.29	11.29	0.59	IV.	3	29.240	30 47.81	4.93	3.10	42 27.41	26 57 35.84
59	8	. .	. .	. .	. .	27.	. .	. .	43 9.68	11.29	0.59	V.	3	33.427	26 25.43	4.93	2.62	42 57.80	53 12.98
60	6	. .	38.5	56.	. .	. .	. .	. .	48 13.19	11.26	0.59	III.	3	32.627	27 14.87	4.94	2.71	48 1.34	54 2.52
61	7	. .	. .	. .	36.5	. .	. .	. .	48 35.83	11.26	0.59	IV.	3	31.400	28 32.35	4.95	2.85	48 23.98	55 20.15
62	7.8	. .	. .	. .	. .	7.5	1.	42.5	48 50.48	11.26	0.62	V.	3	39.293	20 17.45	4.95	1.97	48 38.60	26 47 4.37
63	8	. .	. .	41.	. .	. .	. .	. .	50 58.22	11.25	0.52	III.	2	18.333	42 12.98	4.94	4.34	50 46.45	27 9 2.26
64	7	. .	. .	. .	. .	36.3	. .	. .	51 18.91	11.25	0.53	V.	2	21.140	39 16.94	4.94	4.02	51 7.13	6 5.90
65	9	. .	. .	. .	. .	. .	. .	22.5	51 30.55	11.25	0.55	VII.	2	25.480	34 44.42	4.94	3.52	51 18.75	27 1 32.88
66	5	. .	. .	. .	4.	20.7	. .	. .	54 3.45	11.24	0.61	IV.	3	38.985	15 22.64	4.91	1.21	53 51.60	26 42 8.76
67	6.7	49.	5.5	23.3	40.7	. .	. .	. .	58 40.34	11.21	0.63	IV.	4	47.837	11 18.52	4.87	1.02	58 28.50	38 4.41
68	8	. .	. .	. .	34.5	. .	. .	. .	13 59 34.17	11.21	0.63	IV.	4	48.345	10 46.92	4.86	0.95	13 59 22.33	37 32.73
69	7	. .	52.	10.	28.	. .	. .	. .	14 1 27.11	11.20	0.62	IV.	4	45.983	13 14.85	4.82	1.21	14 1 15.29	40 0.88
70	5	. .	. .	. .	23.	40.	57.3	. .	4 22.84	11.18	0.65	IV.	4	52.593	6 20.42	4.75	0.49	4 11.01	26 33 5.66
71	7	. .	43.3	1.	19.	. .	. .	. .	6 18.17	11.18	0.52	IV.	2	23.723	36 34.73	4.70	3.73	6 6.47	27 3 23.16
72	8	. .	. .	. .	. .	. .	29.	. .	7 54.32	11.17	0.50	VI.	2	18.323	42 13.73	4.66	4.35	7 42.65	27 9 2.74
73	8	. .	. .	. .	. .	. .	21.	. .	9 46.50	11.16	0.58	VI.	3	37.050	22 38.10	4.62	2.22	9 34.76	26 49 24.94
74	6	. .	. .	24.	. .	58.3	. .	. .	11 41.05	11.14	0.46	III.	1	6.560	54 30.50	4.55	5.68	11 29.45	27 21 20.73
75	7	. .	. .	58.	15.	. .	. .	. .	13 14.89	11.14	0.61	IV.	4	48.075	11 3.67	4.50	0.98	13 3.14	26 37 49.15
76	4.5	. .	5.	22.8	40.7	. .	. .	. .	14 39.90	11.13	0.51	IV.	3	23.396	36 54.57	4.44	3.77	14 28.26	27 3 42.78
77	7.8	. .	. .	. .	. .	. .	32.0	. .	15 57.34	11.12	0.51	VI.	3	19.783	40 41.41	4.40	4.19	15 45.72	7 30.00
78	8	. .	. .	. .	. .	. .	. .	22.	15 30.03	11.12	0.56	VII.	3	23.530	36 46.47	4.41	3.75	15 18.40	3 34.63
79	8.9	. .	. .	. .	. .	22.	. .	. .	17 4.63	11.12	0.52	V.	3	25.340	34 52.83	4.36	3.53	16 52.99	27 1 40.72
80	7	. .	. .	. .	. .	. .	. .	26.	17 34.42	11.11	0.63	VII.	4	53.080	5 49.13	4.34	0.43	17 22.68	26 32 33.90
81	7	. .	. .	14.	. .	. .	. .	. .	19 31.11	11.10	0.60	III.	4	48.083	11 3.16	4.27	0.98	19 19.41	26 39 48.41
82	7	. .	. .	. .	4.5	. .	. .	. .	20 3.47	11.10	0.46	IV.	2	12.987	47 48.50	4.25	4.93	19 51.91	27 14 37.68
83	6.7	. .	19.5	. .	56.	. .	. .	. .	21 54.67	11.09	0.44	IV.	1	7.317	53 43.42	4.16	4.59	21 43.14	20 32.17
84	6.7	43.	0.5	17.5	36.	. .	. .	. .	14 23 34.99	−11.08	−0.51	IV.	3	24.790	−35 26.83	− 4.07	−3.59	23 23.40	−27 2 14.49

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(112) 35. Minutes assumed as 59 instead of 58.

(112) 66. Micrometer reading assumed as $43^r.985$ instead of $38^r.985$.

(112) 80. Transit time is evidently 1^s in error.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 112	May 4,	14 00	. .	. .	. .	. .	. .	. .	. .	30.230	56.5	47.5			
		14 23	65 47 31.5	44.7	32.0	46.2	20.5	34.7	34.93[a]	30.236	55.0	46.0	60.	57.5	55.5

[a] Corr. for runs, +0″.11.

ZONE 113. MAY 6. P. $D_0 = -25° 48' 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	. .	. .	1.5	18.	. .	. .	11 32 1.01	−12.77	−0.57	IV.	4	47.403	−11 45.99	−33.83	−1.21	11 31 47.67	−26 0 51.03
2	8.9	. .	. .	21.	39.	. .	. .	. .	33 38.35	12.77	0.57	IV.	4	49.433	9 38.69	33.97	1.01	33 25.01	25 58 43.67
3	9	. .	. .	. .	. .	. .	. .	25.5	33 34.14	12.77	0.57	VII.	4	48.613	10 29.30	33.96	1.09	33 20.80	25 59 34.35
4	8	. .	. .	. .	. .	33.5	. .	. .	35 16.15	12.76	0.64	V.	1	9.273	51 40.81	34.11	5.20	35 2.75	26 40 50.12
5	8	. .	. .	. .	45.5	. .	. .	35.5	36 44.60	12.76	0.57	IV.	4	45.297	13 58.07	34.24	1.42	36 31.27	3 3.73
6	9	8.3	. .	42.7	. .	. .	. .	51.3	38 59.73	12.76	0.59	III.	3	34.973	24 47.63	34.43	2.48	38 46.38	26 13 54.54
7	4.5	32.7	49.7	7.	. .	. .	. .	. .	41 23.96	12.75	0.54	III.	4	53.033	5 52.76	34.63	0.64	41 10.67	25 54 58.03
8	8	. .	. .	. .	. .	53.3	. .	. .	41 35.95	12.75	0.63	V.	1	9.475	51 28.14	34.64	5.16	41 22.57	26 40 37.94
9	6.7	. .	41.3	59.	. .	. .	. .	. .	43 16.02	12.75	0.61	III.	3	22.800	37 31.33	34.77	3.75	43 2.66	26 39.85
10	7	. .	. .	. .	44.	0.7	. .	. .	43 43.44	12.75	0.59	IV.	3	34.178	25 38.01	34.81	2.54	43 30.10	14 45.36
11	9	53.	10.	27.3	45.3	. .	. .	. .	45 44.51	12.75	0.60	IV.	2	21.170	39 15.06	34.96	3.92	45 31.16	28 23.94
12	8	. .	. .	. .	. .	. .	45.	. .	46 10.79	12.75	0.54	VI.	4	47.733	11 24.74	35.00	1.18	45 57.50	0 30.92
13	6.7	15.	32.	49.5	7.	23.8	40.7	58.	50 6.47	12.74	0.56	IV.	3	35.752	23 59.15	35.31	2.41	49 53.17	13 6.87
14	8	. .	8.3	26.	43.7	. .	. .	. .	52 42.98	12.73	0.56	IV.	3	32.983	26 52.85	35.49	2.67	52 29.69	16 1.01
15	8	. .	. .	. .	. .	. .	53.	. .	53 18.50	12.73	0.59	VI.	2	16.750	43 52.26	35.53	4.39	53 5.18	33 2.18
16	8.9	. .	. .	32.	. .	6.5	. .	. .	54 49.17	12.73	0.56	IV.	3	30.740	29 13.57	35.64	2.92	54 35.88	18 22.13
17	9	34.3	51.	9.	. .	. .	. .	. .	58 25.86	12.72	0.57	III.	3	22.325	38 1.39	35.90	3.80	58 12.57	27 11.09
18	8.9	59.	16.	33.3	. .	. .	. .	. .	11 59 50.56	12.72	0.58	III.	2	16.487	44 8.77	36.00	4.42	11 59 37.26	33 19.19
19	8	0.0	17.	34.7	. .	. .	. .	. .	12 2 51.48	12.71	0.52	III.	4	42.587	16 47.92	36.19	1.69	12 2 38.25	5 55.80
20	7.8	. .	27.5	45.	3.	. .	. .	. .	4 2.15	12.71	0.54	IV.	3	34.730	25 3.26	36.27	2.48	3 48.90	14 12.01
21	7	16.7	34.	51.5	9.7	25.5	. .	. .	6 8.51	12.70	0.56	IV.	2	20.410	40 2.82	36.40	4.03	5 55.25	29 13.25
22	7	. .	10.7	28.	. .	. .	. .	. .	8 45.14	12.70	0.53	III.	3	32.893	26 58.05	36.57	2.69	8 31.91	16 7.31
23	7	. .	. .	. .	. .	. .	15.	. .	8 40.47	12.70	0.57	VI.	2	13.930	46 49.24	36.56	4.67	8 27.20	36 0.47
24	8	. .	. .	. .	. .	. .	. .	24.	9 32.39	12.69	0.53	VII.	3	29.910	30 6.02	36.62	3.01	9 19.17	26 19 15.65
25	6	29.7	46.7	3.8	21.	. .	. .	. .	12 20.86	12.69	0.48	IV.	4	53.810	5 3.99	36.78	0.53	12 7.69	25 54 11.30
26	7	. .	. .	24.	. .	. .	. .	. .	13 40.99	12.68	0.48	III.	4	54.020	4 50.87	36.86	0.51	13 27.83	25 53 58.24
27	7	. .	. .	. .	3.7	21.	. .	. .	14 3.30	12.68	0.54	IV.	3	23.067	37 15.08	36.88	3.73	13 50.08	26 26 25.69
28	9	. .	. .	27.5	. .	. .	. .	. .	15 44.52	12.68	0.49	III.	4	46.943	12 14.59	36.98	1.21	15 31.35	26 1 22.78
29	9	. .	26.	43.	. .	. .	. .	. .	18 0.18	12.67	0.47	III.	4	49.337	9 44.65	37.11	0.95	17 47.04	25 58 52.71
30	7	. .	26.	43.3	1.7	. .	. .	. .	19 0.64	12.67	0.52	IV.	3	28.214	31 52.18	37.16	3.18	18 47.45	26 21 2.52
31	8.9	. .	34.3	. .	9.5	. .	. .	. .	21 8.85	12.66	0.50	IV.	3	33.064	26 47.84	37.28	2.66	20 55.69	15 57.78
32	7.8	. .	. .	27.	44.3	. .	. .	. .	22 43.88	12.66	0.49	IV.	3	33.613	26 13.40	37.36	2.60	22 30.73	15 23.36
33	5.6	. .	54.5	12.3	30.7	. .	. .	. .	24 29.44	12.65	0.55	IV.	1	6.027	55 4.21	37.45	5.58	24 16.24	44 17.24
34	7	40.5	. .	15.3	. .	. .	. .	. .	26 32.17	12.65	0.51	III.	3	28.043	32 2.41	37.56	3.20	26 19.01	21 13.17
35	8	. .	. .	. .	48.3	. .	22.3	. .	26 47.86	12.65	0.49	IV.	3	36.193	23 31.61	37.57	2.35	26 34.72	26 12 41.53
36	7	. .	. .	. .	. .	. .	. .	11.	27 19.72	12.64	0.45	VII.	4	54.887	3 55.76	37.60	0.42	27 6.63	25 53 3.78
37	8	. .	. .	. .	. .	6.5	. .	. .	28 49.38	12.64	0.45	V.	4	52.040	6 54.97	37.68	0.71	28 36.29	25 56 3.36
38	4.5	. .	. .	. .	59.3	15.5	32.7	. .	29 58.41	12.64	0.49	IV.	3	30.633	29 20.35	37.74	2.93	29 45.28	26 18 31.02
39	9	. .	. .	. .	30.5	. .	. .	. .	31 30.05	12.63	0.46	IV.	4	42.250	17 9.12	37.81	1.73	31 16.96	6 18.66
40	9	. .	. .	. .	. .	20.5	. .	. .	32 3.33	12.63	0.46	V.	4	43.243	16 6.71	37.84	1.63	31 50.24	5 16.18
41	8	. .	. .	. .	. .	. .	34.	. .	33 59.79	12.62	0.45	VI.	4	47.940	11 11.75	37.89	1.14	33 46.72	0 20.78
42	8	. .	. .	. .	. .	. .	. .	32.	33 40.11	12.62	0.53	VII.	1	8.853	52 7.05	37.91	5.27	33 26.96	41 20.23
43	9	. .	. .	. .	30.	. .	. .	. .	35 29.15	12.62	0.50	IV.	2	21.975	38 24.41	38.01	3.85	35 16.03	27 36.27
44	8	. .	. .	. .	50.	6.5	. .	. .	36 49.46	12.61	0.45	IV.	4	43.675	15 39.62	38.06	1.58	36 36.40	4 49.26
45	9	. .	. .	. .	. .	. .	20.7	. .	38 46.23	12.61	0.50	VI.	2	20.293	40 10.10	38.15	4.04	38 33.12	26 29 22.29
46	5.6	19.	36.2	53.3	10.5	. .	. .	. .	44 10.32	12.59	0.41	IV.	4	52.742	6 10.94	38.37	0.64	43 57.32	25 55 19.95
47	9.10	. .	. .	. .	. .	. .	. .	0.0	44 8.66	12.59	0.42	VII.	4	49.720	9 19.82	38.37	0.96	43 55.65	25 58 29.15
48	7	. .	. .	. .	53.3	10.3	. .	. .	45 52.65	12.59	0.49	IV.	2	14.727	45 59.28	38.44	4.62	45 39.57	26 35 12.34
49	9	. .	18.	36.	. .	. .	. .	. .	12 47 52.94	−12.58	−0.48	III.	2	13.673	−47 5.33	−38.52	−4.74	12 47 39.88	−26 36 18.59

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(113) 41. Minutes assumed as 32 instead of 33.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 113	May 6,	11 31	65 9 62.5	72.2	60.8	73.5	48.8	67.5	64.22	30.074	63.0	59.5	62.5	61.	
		12 14	. .	. .	. .	. .	. .	. .	. .	30.070	61.8	58.8			
		13 00	. .	. .	. .	. .	. .	. .	. .	30.058	61.0	55.5			
		13 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	54.0			
		13 27	. .	. .	. .	. .	. .	. .	. .	30.050	60.5				
		15 00	61.4	72.2	60.8	73.5	49.5	64.6	63.67	30.014	57.0	47.6			
		16 00	. .	. .	. .	. .	. .	. .	. .	29.992	55.0	45.2	56.	53.5	60.
		18 20	. .	. .	. .	. .	. .	. .	. .	29.956	52.0	44.0			

ZONE 113. MAY 6. P. $D_0 = -25° 48' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8.9	. .	8.	. .	. .	. .	. .	. .	12 48 42.70	−12.58	−0.48	II.	2	16.482	−44 8.77	−38.55	−4.44	12 48 29.64	−26 33 21.76
51	6.7	. .	. .	. .	55.5	. .	29.	. .	48 54.51	12.58	0.48	IV.	2	15.713	44 57.41	38.56	4.52	48 41.45	34 10.49
52	8.9	. .	. .	. .	. .	28.	. .	. .	50 10.76	12.57	0.45	V.	3	31.370	28 34.49	38.61	2.85	49 57.74	17 45.95
53	9	. .	. .	. .	28.5	. .	. .	. .	52 27.81	12.56	0.45	IV.	3	30.200	29 47.58	38.67	2.98	52 14.80	18 59.23
54	8	. .	. .	. .	39.5	. .	12.7	. .	53 38.36	12.56	0.47	IV.	2	16.443	44 11.78	38.70	4.44	53 25.33	26 33 24.92
55	7.8	. .	. .	. .	. .	. .	3.3	. .	54 29.11	12.56	0.40	VI.	4	49.998	9 2.76	38.73	0.91	54 16.15	25 58 12.40
56	7	. .	. .	. .	. .	45.5	. .	. .	56 28.39	12.55	0.38	V.	4	55.290	3 31.31	38.78	0.36	56 15.46	25 52 40.45
57	8	. .	. .	. .	. .	. .	56.	. .	12 57 21.63	12.55	0.43	VII.	3	31.335	28 36.81	38.81	2.86	12 57 8.65	26 17 48.48
58	9	. .	. .	. .	. .	. .	50.	. .	13 10 15.76	12.50	0.38	VI.	4	45.450	13 48.16	39.02	1.36	13 10 2.88	2 58.54
59	7	. .	. .	. .	29.	. .	. .	. .	12 27.97	12.49	0.44	IV.	2	12.880	47 55.16	39.04	4.85	12 15.04	37 9.05
60	9	. .	. .	. .	. .	. .	. .	17.5	12 25.79	12.49	0.42	VII.	3	22.285	38 4.65	39.04	3.83	12 12.88	27 17.52
61	9	32.	47.7	6.	23.5	. .	. .	. .	15 22.88	12.48	0.39	IV.	3	37.403	22 15.76	39.07	2.21	15 10.01	11 27.04
62	9	. .	. .	. .	. .	11.3	. .	. .	16 54.05	12.47	0.41	V.	3	27.300	32 49.84	39.08	3.29	16 41.17	22 2.21
63	8	. .	. .	. .	. .	13.5	. .	. .	17 56.15	12.47	0.43	V.	1	9.017	51 56.76	39.09	5.28	17 43.25	41 11.13
64	6.7	36.5	53.5	10.7	29.3	. .	. .	. .	20 28.12	12.46	0.42	IV.	2	12.773	48 1.87	39.11	4.87	20 15.24	37 15.85
65	7.8	. .	. .	9.	27.	43.	. .	. .	21 25.93	12.45	0.42	IV.	2	13.370	47 24.65	39.11	4.80	21 13.06	36 38.56
66	9	. .	58.5	. .	34.	. .	. .	. .	24 33.22	12.44	0.37	IV.	3	38.733	20 52.14	39.11	2.06	23 20.41	10 3.31
67	7.8	. .	. .	. .	. .	15.	32.	. .	24 57.73	12.44	0.37	V.	3	35.160	24 36.66	39.11	2.45	24 44.92	13 48.22
68	9	. .	. .	24.3	. .	. .	. .	. .	26 41.41	12.43	0.41	III.	2	18.550	41 59.30	39.10	4.23	26 28.57	31 12.63
69	8	. .	. .	29.5	. .	. .	20.7	. .	27 46.47	12.43	0.37	IV.	3	36.597	23 6.20	39.10	2.30	27 33.67	12 17.60
70	8	. .	. .	9.7	27.	. .	. .	. .	29 26.54	12.42	0.37	IV.	3	31.660	28 15.92	39.10	2.82	29 13.75	17 27.84
71	7.8	. .	. .	. .	. .	23.	. .	. .	30 5.81	12.42	0.35	V.	4	40.310	19 10.73	39.10	1.91	29 53.04	8 21.74
72	7	. .	. .	. .	. .	. .	10.	. .	30 35.53	12.41	0.39	VI.	2	20.000	40 28.35	39.10	4.08	30 22.70	29 41.53
73	8.9	. .	. .	. .	. .	1.5	. .	. .	31 44.23	12.41	0.38	V.	3	26.150	34 1.88	39.08	3.42	31 31.44	23 14.38
74	7	. .	45.	2.3	20.3	. .	. .	. .	33 19.50	12.40	0.38	IV.	3	21.340	39 3.58	39.06	3.95	33 6.72	28 16.59
75	9	. .	. .	. .	. .	55.5	. .	. .	33 38.20	12.40	0.38	V.	3	19.055	41 27.10	39.06	4.18	33 25.42	30 40.34
76	8	. .	53.	10.3	27.7	. .	. .	. .	36 27.34	12.39	0.33	IV.	4	46.983	12 12.14	39.03	1.19	36 14.62	1 22.36
77	9	. .	. .	. .	. .	. .	. .	40.5	36 48.77	12.39	0.38	VII.	2	21.035	39 23.21	39.03	3.97	36 36.00	28 36.21
78	9	. .	. .	39.	. .	. .	. .	. .	41 56.11	12.37	0.37	III.	2	19.410	41 5.39	38.96	4.14	41 43.37	26 30 18.49
79	6.7	36.7	53.7	11.	28.	. .	. .	. .	45 27.92	12.35	0.30	IV.	4	50.313	8 43.51	38.89	0.85	45 15.27	25 57 53.25
80	8.9	. .	. .	. .	37.	. .	. .	. .	48 35.20	12.34	0.34	IV.	3	24.387	35 52.38	38.84	3.60	48 23.52	26 25 4.82
81	8	. .	. .	11.	. .	. .	. .	. .	50 28.00	12.33	0.29	III.	4	51.910	7 3.12	38.80	0.69	50 15.38	25 56 12.61
82	8.9	. .	42.3	. .	. .	. .	. .	. .	53 16.77	12.32	0.31	II.	3	36.633	23 3.06	38.73	2.29	53 4.14	26 12 14.08
83	7	. .	46.5	. .	21.3	. .	. .	. .	54 20.88	12.32	0.30	IV.	4	41.382	18 3.62	38.70	1.79	54 8.26	26 57 14.11
84	8	. .	47.	. .	. .	. .	. .	. .	57 21.27	12.30	0.26	II.	4	54.570	4 16.26	38.63	0.42	57 8.71	25 53 25.31
85	3.4	. .	29.	46.	2.3	. .	. .	. .	58 2.78	12.30	0.27	IV.	4	50.773	8 14.41	38.61	0.80	57 50.21	57 23.82
86	8	. .	. .	. .	. .	. .	34.5	51.5	58 0.30	12.30	0.26	VI.	4	56.453	2 18.13	38.61	0.22	7 47.74	25 51 26.96
87	8	. .	. .	. .	. .	52.5	. .	. .	13 59 35.16	12.29	0.34	V.	1	12.320	48 29.56	38.57	4.92	13 59 22.53	26 37 43.05
88	7	. .	. .	. .	. .	0.0	. .	. .	14 0 42.70	12.27	0.33	V.	2	20.825	39 36.58	38.54	4.00	14 0 30.10	28 49.12
89	8.9	. .	. .	. .	. .	3.5	. .	. .	0 46.20	12.27	0.33	V.	2	20.825	39 36.58	38.54	4.00	0 33.60	28 49.12
90	7	. .	. .	. .	. .	. .	. .	57.	2 5.51	12.27	0.30	VII.	3	38.644	20 58.17	38.49	2.06	1 52.94	10 8.72
91	5.6	. .	49.	6.7	25.	. .	. .	. .	4 23.85	12.26	0.33	IV.	2	16.742	43 52.82	38.41	4.45	4 11.26	33 5.68
92	6.7	. .	. .	. .	. .	9.3	26.5	. .	4 52.26	12.26	0.25	V.	4	53.760	5 7.05	38.39	0.47	4 39.75	54 15.91
93	8	. .	. .	. .	45.5	. .	. .	. .	6 44.57	12.26	0.33	IV.	2	18,130	42 25.79	38.33	4.30	6 31.98	31 38.42
94	8	. .	. .	. .	. .	45.5	. .	. .	7 28.15	12.25	0.34	IV.	1	11.297	49 33.77	38.31	5.06	7 15.56	38 47.14
95	7	. .	. .	54.	11.8	28.3	. .	. .	9 11.10	12.24	0.28	IV.	3	33.420	26 25.62	38.25	2.63	10 58.58	15 35.50
96	6.7	. .	8.3	25.5	44.	. .	. .	. .	10 42.90	12.23	0.30	IV.	3	22.762	37 34.10	38.19	3.79	10 30.37	26 46.08
97	8.9	. .	. .	. .	. .	. .	. .	33.	10 41.53	12.23	0.27	VII.	4	40.177	19 18.44	38.19	1.91	10 29.03	8 28.54
98	7	. .	41.	57.7	17.	. .	. .	. .	14 13 15.51	−12.22	−0.32	IV.	1	12.183	−48 37.91	−38.08	−4.96	14 13 2.97	−26 37 50.95

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 113. MAY 6. P. $D_0 = -25° 48' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	7.8	. .	. .	17.	33.5	50.5	. .	. .	14 14 16.39	−12.21	−0.25	IV.	4	42.585	−16 48.04	−38.03	−1.65	14 14 3.93	−26 5 57.72
100	7.8	. .	. .	41.	57.	14.3	. .	. .	15 57.25	12.21	0.25	IV.	4	44.043	15 16.53	37.97	1.49	15 44.79	4 25.99
101	7	. .	. .	3.5	. .	. .	. .	. .	17 20.52	12.20	0.24	III.	4	45.273	13 59.52	37.91	1.36	17 8.08	3 8.79
102	7	. .	. .	. .	. .	39.	56.	. .	17 21.76	12.20	0.26	V.	3	38.640	20 58.29	37.91	2.06	17 9.30	10 8.26
103	8	. .	. .	. .	. .	29.	. .	. .	18 11.80	12.20	0.26	V.	3	38.080	21 33.42	37.88	2.12	17 59.34	10 43.42
104	9	. .	. .	. .	. .	. .	. .	16.	18 24.27	12.20	0.29	VII.	2	20.930	39 29.74	37.87	3.99	18 11.78	28 41.60
105	7.8	. .	. .	. .	. .	. .	7.	. .	19 32.46	12.19	0.30	VI.	1	12.110	48 42.75	37.83	4.97	19 19.97	37 55.55
106	7	. .	42.3	0.	17.5	. .	. .	. .	22 16.93	12.18	0.26	IV.	3	38.850	20 44.75	37.69	2.04	22 4.49	9 54.48
107	8	. .	. .	. .	. .	. .	57.	. .	22 22.58	12.18	0.28	VI.	3	26.350	33 49.58	37.68	3.40	22 10.12	23 0.66
108	7.8	. .	. .	. .	. .	1.	18.	. .	23 43.78	12.17	0.24	V.	4	41.660	17 45.93	37.62	1.75	23 31.37	6 55.30
109	7	18.3	. .	52.3	. .	. .	. .	. .	31 9.45	12.13	0.22	III.	4	44.170	15 8.62	37.24	1.47	30 57.10	4 17.33
110	7	. .	. .	. .	. .	. .	0.5	. .	31 26.03	12.13	0.27	VI.	3	20.788	39 38.33	37.22	4.01	31 13.63	28 49.56
111	9	56.	. .	. .	. .	. .	. .	. .	36 47.59	12.10	0.27	I.	2	15.624	45 2.12	36.90	4.57	36 35.22	34 13.59
112	7.8	. .	. .	. .	0.5	. .	33.7	. .	36 59.58	12.10	0.24	IV.	3	30.845	29 6.92	36.89	2.91	36 47.24	18 16.72
113	8	. .	. .	20.	. .	. .	. .	. .	38 18.98	12.09	0.27	III.	2	13.320	47 27.61	36.79	4.84	38 6.52	36 39.24
114	5.6	. .	. .	. .	. .	41.	58.	. .	39 23.82	12.09	0.20	V.	4	47.460	11 42.30	36.75	1.12	39 11.53	0 50.17
115	7.8	. .	4.	21.3	. .	. .	. .	. .	43 38.33	12.07	0.20	III.	4	48.155	10 58.71	36.49	1.04	43 26.06	0 6.24
116	9	. .	. .	31.	. .	. .	. .	. .	44 48.14	12.06	0.25	III.	1	12.185	48 37.41	36.39	4.96	44 35.83	37 48.76
117	8.9	. .	. .	. .	. .	10.	. .	. .	44 52.65	12.06	0.26	V.	1	10.973	49 53.91	36.39	5.09	44 40.33	39 5.39
118	8.9	. .	. .	. .	. .	. .	. .	13.	45 21.55	12.06	0.20	VII.	4	41.720	17 41.53	36.36	1.74	45 9.29	6 49.63
119	8.9	. .	. .	. .	19.5	. .	. .	. .	47 18.59	12.05	0.24	IV.	2	18.803	41 43.41	36.22	4.22	47 6.30	30 53.85
120	8	. .	. .	. .	23.	. .	. .	. .	48 22.45	12.04	0.20	IV.	3	37.383	22 17.02	36.15	2.20	48 10.21	11 25.37
121	9	. .	. .	. .	. .	. .	38.5	. .	49 4.07	12.04	0.22	VI.	3	24.380	35 53.20	36.11	3.61	48 51.81	25 2.92
122	8	8.	. .	42.5	. .	. .	. .	. .	55 59.58	12.00	0.22	III.	2	20.902	39 31.50	35.59	3.99	55 47.36	28 41.08
123	7.8	. .	. .	. .	44.2	. .	18.	. .	56 43.61	12.00	0.19	IV.	3	33.280	26 34.41	35.53	2.64	56 31.42	15 42.58
124	7	. .	. .	54.	11.	. .	. .	. .	58 10.74	11.99	0.18	IV.	3	34.525	25 16.24	35.42	2.50	57 58.57	14 24.16
125	7	. .	8.	25.5	43.	. .	. .	. .	14 59 42.50	−11.98	−0.17	IV.	3	40.570	−18 57.05	−35.30	−1.87	14 59 30.35	−26 8 4.22

ZONE 114. MAY 6. P. $D_0 = -25° 48' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	33.	. .	. .	. .	. .	16 0 50.02	−11.64	−0.32	III.	4	45.890	−13 20.56	−28.68	−1.24	16 0 38.06	−26 2 20.48
2	7	. .	. .	. .	19.	35.7	. .	10.	1 18.25	11.64	0.27	IV.	2	19.090	41 25.53	28.61	4.24	1 6.34	30 28.38
3	9	. .	. .	. .	. .	. .	6.5	. .	2 32.11	11.63	0.29	VI.	3	28.750	31 18.80	28.44	3.15	2 20.19	26 20 20.39
4	9	. .	. .	. .	. .	15.	. .	. .	4 57.89	11.62	0.34	V.	4	53.857	5 0.91	28.10	0.38	4 45.93	25 53 59.39
5	8	. .	. .	23.5	. .	. .	. .	. .	15 40.60	11.56	0.28	III.	2	22.210	38 9.61	26.57	3.88	15 28.76	26 27 10.06
6	7.8	. .	16.7	34.	51.7	. .	. .	. .	16 51.12	11.55	0.31	IV.	3	35.588	24 9.49	26.40	2.38	16 39.26	26 13 8.27
7	8	. .	. .	51.7	. .	. .	. .	. .	18 8.70	11.54	0.34	III.	4	53.135	5 46.42	26.22	0.46	17 56.82	25 54 43.10
8	1	33.5	50.7	7.3	25.5	42.	. .	. .	20 24.83	11.53	0.32	IV.	4	42.712	16 40.00	25.88	1.59	20 12.98	26 5 37.47
9	6	. .	48.3	5.3	23.	. .	. .	. .	22 22.52	11.52	0.31	IV.	3	36.328	23 23.20	25.58	2.30	22 10.69	12 21.08
10	7.8	. .	40.	57.	. .	. .	. .	. .	26 14.25	11.50	0.32	III.	4	38.843	20 42.47	25.00	2.02	26 2.43	9 39.49
11	7	. .	58.	. .	. .	. .	. .	. .	29 32.78	11.48	0.27	II.	1	8.843	52 6.56	24.50	5.40	29 21.03	41 6.46
12	8	18.3	. .	53.	. .	. .	. .	. .	31 9.84	11.47	0.33	III.	4	39.360	20 10.37	24.26	1.98	30 58.04	9 6.61
13	7	. .	. .	. .	. .	. .	46.	. .	31 11.78	11.47	0.34	VI.	4	46.890	12 17.60	24.26	1.13	30 59.97	1 12.99
14	7.8	12.	29.	46.3	. .	. .	. .	. .	34 3.38	11.45	0.33	III.	3	38.570	21 2.12	23.79	2.05	33 51.60	9 57.96
15	6.7	. .	. .	31.	49.	. .	. .	. .	34 48.10	11.45	0.29	IV.	2	18.543	41 59.93	23.67	4.30	34 36.36	30 57.90
16	8	. .	. .	. .	. .	36.5	. .	. .	35 19.34	11.44	0.34	V.	4	45.910	13 19.24	23.59	1.24	35 7.56	2 14.07
17	7	. .	. .	28.	46.	. .	. .	. .	36 45.17	11.44	0.31	IV.	3	27.087	33 2.83	23.37	3.33	36 33.42	21 59 53
18	7	14.7	31.5	49.3	7.	. .	. .	. .	16 41 6.23	−11.41	−0.29	IV.	2	20.917	−39 30.74	−22.67	−4.02	16 40 54.53	−26 28 27.43

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(113) 99. Transits over T.'s IV, V, and VI assumed as recorded over T.'s III, IV, and V.

(113) 113. Transit over T. IV assumed as recorded over T. III.

ZONE 114. MAY 6. P. $D_0 = -25° 48' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	7	54.2	11.5	29.2	47.2	. .	. .	. .	16 42 46.15	−11.40	−0.28	IV.	2	13.010	−47 47.06	−22.39	−4.92	16 42 34.47	−26 36 44.37
20	8	. .	. .	. .	. .	. .	42.	. .	43 7.44	11.40	0.28	VI.	1	10.310	50 35.85	22.34	5.22	42 55.76	39 33.41
21	9	. .	. .	. .	. .	. .	25.	. .	43 50.53	11.40	0.29	VI.	2	19.894	40 34.95	22.23	4.11	43 38.84	29 31.29
22	7.8	. .	. .	29.	46.5	3.5	. .	. .	45 46.11	11.38	0.33	IV.	4	38.733	20 49.50	21.90	2.03	45 34.40	9 43.43
23	9	30.7	. .	5.	. .	. .	. .	. .	48 22.16	11.37	0.30	III.	2	22.720	37 37.48	21.48	3.82	48 10.49	26 32.78
24	9	. .	. .	. .	24.	. .	. .	. .	49 23.53	11.36	0.33	IV.	4	41.243	18 12.27	21.31	1.76	49 11.84	7 5.34
25	8	. .	. .	. .	. .	40.3	. .	. .	50 23.11	11.36	0.33	V.	4	40.073	19 25.47	21.14	1.88	50 11.42	8 18.49
26	8	. .	. .	2.	20.	. .	. .	. .	52 19.14	11.35	0.30	IV.	3	24.285	35 58.77	20.82	3.65	52 7.49	24 53.24
27	8	39.3	. .	13.7	. .	. .	. .	. .	55 30.65	11.33	0.35	III.	4	45.172	14 5.78	20.28	1.32	55 18.97	2 57.38
28	7.8	. .	25.	42.3	0.5	. .	. .	. .	56 59.57	11.32	0.31	IV.	3	26.860	33 16.95	20.02	3.36	56 47.94	22 10.33
29	6.7	. .	. .	. .	48.2	4.7	. .	. .	57 47.50	11.32	0.32	IV.	3	30.610	29 21.80	19.88	2.94	57 35.86	18 14.62
30	9	. .	. .	. .	30.5	. .	. .	. .	16 59 29.45	11.31	0.29	IV.	1	11.683	49 9.17	19.60	5.07	16 59 17.85	38 3.84
31	8	. .	53.	. .	. .	. .	. .	. .	17 1 27.38	11.29	0.35	II.	4	45.273	13 59.33	19.25	1.28	17 1 15.74	2 49.86
32	8	. .	. .	. .	46.5	. .	. .	. .	1 45.87	11.29	0.33	IV.	3	33.248	26 36.35	19.20	2.65	1 34.25	15 28.20
33	7.8	. .	. .	. .	31.	47.	4.3	. .	2 29.87	11.29	0.30	IV.	2	18.863	41 39.65	19.07	4.29	2 18.28	30 33.01
34	8.9	. .	32.	. .	. .	. .	. .	. .	6 6.57	11.27	0.32	II.	3	27.790	32 17.72	18.44	3.26	5 54.98	21 9.42
35	7	. .	. .	2.5	20.	. .	. .	. .	6 19.41	11.27	0.31	IV.	3	26.462	33 42.17	18.41	3.40	6 7.83	22 33.98
36	7	. .	. .	. .	. .	. .	54.	. .	6 19.59	11.27	0.31	VI.	3	26.547	33 37.15	18.41	3.39	6 8.01	22 28.95
37	7	. .	. .	. .	. .	29.3	. .	. .	7 12.06	11.26	0.32	V.	3	29.490	30 32.37	18.25	3.07	7 0.48	19 23.69
38	7	. .	. .	15.	33.	. .	6.5	. .	8 32.10	11.26	0.30	IV.	3	21.800	38 34.47	18.02	3.94	8 20.54	27 26.43
39	8	. .	19.	. .	. .	. .	. .	. .	10 53.63	11.24	0.31	II.	3	22.530	37 47.96	17.60	3.86	10 42.08	26 39.42
40	7	. .	. .	6.5	24.5	. .	. .	. .	11 23.66	11.24	0.32	IV.	3	25.677	34 31.30	17.51	3.49	11 12.10	23 22.30
41	7	. .	. .	. .	. .	36.	. .	. .	12 18.75	11.24	0.32	V.	3	28.350	31 43.96	17.35	3.19	12 7.19	20 34.50
42	7.8	. .	. .	. .	. .	. .	. .	9.	12 17.42	11.24	0.33	VII.	3	32.080	27 49.94	17.35	2.77	12 5.85	16 40.06
43	8	. .	. .	. .	. .	. .	50.5	. .	13 16.26	11.23	0.36	VI.	4	44.514	14 46.80	17.17	1.37	13 4.67	3 35.34
44	7	52.	9.	26.5	44.	. .	. .	35.	17 43.46	11.20	0.35	IV.	3	36.855	22 49.90	16.37	2.24	17 31.91	11 38.51
45	9	. .	. .	. .	24.	. .	. .	. .	19 41.13	11.20	0.30	IV.	2	13.770	46 59.28	16.00	4.87	19 29.63	35 50.15
46	6.7	46.	2.5	20.	37.7	. .	. .	28.5	22 37.11	11.18	0.35	IV.	4	39.353	20 10.88	15.48	1.96	22 25.58	8 58.32
47	7.8	. .	. .	. .	38.0	. .	. .	. .	25 36.95	11.16	0.30	IV.	2	11.817	49 1.88	14.93	5.08	25 25.49	37 51.89
48	8.9	. .	14.0	31.0	. .	. .	. .	. .	34 48.28	11.11	0.35	III.	3	34.730	25 2.87	13.20	2.48	34 36.82	13 48.55
49	9	. .	. .	. .	56.0	. .	. .	. .	35 55.07	11.11	0.32	V.	2	18.438	42 6.57	13.01	4.33	35 43.64	30 53.91
50	9	. .	. .	. .	34.3	. .	. .	. .	37 33.81	11.10	0.36	V.	3	40.313	19 13.49	12.69	1.84	37 22.35	7 58.02
51	7.8	18.3	35.	52.5	10.2	. .	. .	. .	41 9.59	11.08	0.34	IV.	3	32.265	27 38.08	12.02	2.75	40 58.17	16 22.85
52	9	. .	. .	. .	. .	. .	27.0	. .	43 52.63	11.06	0.34	VI.	3	31.230	28 43.33	11.49	2.87	43 41.13	17 27.69
53	9	. .	. .	. .	. .	33.3	. .	. .	45 16.09	11.06	0.35	V.	3	36.600	23 6.27	11.22	2.26	45 4.68	11 49.75
54	9	. .	. .	. .	. .	. .	35.5	. .	46 1.15	11.05	0.35	VI.	3	32.550	27 20.51	11.09	2.72	45 49.75	16 4.32
55	6.7	. .	. .	. .	. .	. .	. .	5.5	47 13.57	11.04	0.30	VII.	1	5.483	55 38.80	10.86	5.80	47 2.23	44 25.46
56	7.8	. .	. .	. .	. .	36.3	53.	. .	49 18.94	11.03	0.37	VI.	4	43.816	15 30.40	10.45	1.45	49 7.54	4 12.30
57	7.8	. .	14.	. .	49.	. .	. .	. .	51 48.46	11.02	0.34	IV.	3	35.912	23 49.04	9.97	2.34	51 37.10	12 31.35
58	7	23.5	40.5	58.	15.7	. .	. .	. .	54 15.02	11.01	0.35	IV.	3	29.870	30 8.10	9.49	3.04	54 3.66	26 18 50.63
59	8	. .	. .	. .	. .	. .	. .	6.0	54 14.69	11.01	0.40	VII.	4	53.013	5 53.32	9.49	0.44	54 3.28	25 54 33.25
60	9	. .	. .	. .	11.5	. .	. .	. .	17 57 10.83	10.99	0.35	IV.	3	31.330	28 36.50	9.92	2.86	56 59.49	26 17 19.28
61	7.8	. .	33.	50.	7.7	. .	. .	. .	18 0 7.23	10.98	0.37	IV.	4	40.983	18 28.45	8.36	1.75	17 59 55.88	7 8.56
62	7	. .	51.3	8.5	26.	. .	. .	. .	1 25.60	10.97	0.38	IV.	4	44.715	14 34.38	8.10	1.34	18 1 14.25	3 13.82
63	8	. .	. .	38.5	. .	. .	. .	. .	2 55.59	10.96	0.34	III.	3	23.610	36 40.64	7.84	3.72	2 44.29	25 22.20
64	8	. .	. .	2.7	. .	. .	. .	. .	5 19.76	10.95	0.36	III.	3	34.435	25 21.57	7.34	2.51	5 8.45	14 1.42
65	7	. .	. .	. .	2.5	. .	. .	. .	6 1.77	10.95	0.34	IV.	3	27.767	32 20.03	7.20	3.27	5 50.48	21 0.50
66	9	. .	. .	. .	. .	. .	5.0	. .	6 30.59	10.94	0.34	VI.	3	26.877	33 16.26	7.11	3.37	6 19.31	21 56.74
67	7.8	24.7	42.	59.3	. .	. .	. .	. .	18 10 16.39	−10.92	−0.34	III.	3	26.213	−33 57.35	− 6.35	−3.44	18 10 5.13	−26 22 37.14

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(114) 45. Transit over T. III assumed as recorded over T. IV.

(114) 49. Transit evidently noted 15^s too late.

INSTRUMENT READINGS.

Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 114. MAY 6. P. $D_0 = -25° 48' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
68	9	..	..	..	57.	..	..	..	18 10 56.41	−10.92	−0.36	IV.	3	34.710	−25 4.50	− 6.22	−2.48	18 10 45.13	−26 13 43.20
69	7	..	..	47.5	5.	..	..	..	12 4.52	10.92	0.38	IV.	3	39.455	20 7.05	6.01	1.94	11 53.22	8 45.00
70	7	..	..	..	12.3	..	..	..	13 11.41	10.91	0.34	IV.	2	20.270	40 11.54	5.77	4.12	13 0.16	28 51.43
71	9	..	..	..	25.7	..	..	..	14 25.09	10.91	0.37	IV.	3	34.138	25 40.46	5.53	2.55	14 13.81	14 18.54
72	7	..	..	..	..	18.	..	..	15 0.69	10.90	0.34	V.	2	18.100	42 27.73	5.41	4.36	14 49.45	31 7.50
73	8	..	..	..	..	..	5.	..	15 30.48	10.90	0.33	VI.	2	15.430	45 15.29	5.31	4.68	15 19.25	26 33 55.28
74	8.9	..	..	15.	..	..	..	..	17 32.01	10.89	0.40	III.	4	48.040	11 5.86	4.90	0.97	17 20.72	25 59 41.73
75	9	..	25.	..	1.	..	..	..	18 18 59.94	−10.88	−0.36	IV.	3	32.553	−27 19.95	− 4.60	−2.72	18 18 48.70	−26 15 57.27

ZONE 115. MAY 17. P. $D_0 = -28° 41' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	..	..	..	30.	..	4.7	..	12 8 29.78	..	..	IV.	4	53.353	− 5 32.88	+ 0.09	−0.87	....	−28 47 23.66
2	7	..	37.7	55.5	13.3	..	..	..	11 12.98	..	..	IV.	3	34.174	25 38.26	− 0.08	3.34	....	29 7 31.68
3	7	..	12.	30.	48.	..	..	..	13 47.46	..	..	IV.	4	47.574	11 35.15	0.24	1.61	....	28 53 27.00
4	6	17.2	34.5	52.5	11.	28.	45.5	3.	16 10.05	..	..	IV.	2	12.634	48 10.73	0.39	6.18	....	29 30 7.30
5	8	..	..	..	..	..	22.5	..	17 47.20	..	..	VI.	3	30.265	29 43.87	0.49	3.85	....	11 38.21
6	7	..	14.	32.3	50.5	..	..	..	19 49.68	..	..	IV.	3	26.830	33 18.84	0.61	4.30	....	29 15 13.75
7	8	..	..	..	..	..	..	41.	19 48.23	..	..	VII.	4	44.063	15 14.53	0.61	2.05	....	28 57 7.19
8	6	15.2	32.7	50.5	8.7	26.	..	1.	25 8.10	..	..	IV.	3	29.040	31 0.23	0.91	2.01	....	29 12 53.15
9	8	58.7	16.	34.	52.3	..	..	..	27 51.52	..	..	IV.	3	26.685	33 28.00	1.06	4.31	....	15 23.37
10	4.5	25.3	42.7	1.	19.5	36.3	54.	11.5	31 18.40	..	..	IV.	1	7.247	53 47.74	1.24	6.90	....	29 35 45.88
11	8.9	..	57.2	..	33.	..	..	..	37 32.56	..	..	IV.	4	43.645	15 41.56	1.53	2.11	....	28 57 35.20
12	8	0.	17.3	35.	53.	..	..	..	39 52.59	..	..	IV.	4	42.825	16 32.87	1.61	2.22	....	28 58 26.70
13	8	32.	49.5	7.7	..	..	..	..	45 25.00	..	..	IV.	3	30.010	29 59.37	1.85	3.88	....	29 11 55.10
14	7	..	..	21.3	39.7	56.5	..	..	47 38.85	..	..	IV.	3	26.790	33 21.34	1.94	4.31	....	15 17.59
15	7	9.7	27.	45.	3.	..	..	..	51 2.44	..	..	IV.	3	30.674	29 17.72	2.06	3.79	....	29 11 13.57
16	8	..	..	..	27.	..	..	..	12 55 26.71	..	..	IV.	4	49.560	9 30.61	2.19	1.35	....	28 51 24.15
17	7	..	26.	44.	..	19.3	..	..	13 7 1.55	..	..	V.	2	19.377	41 7.66	2.48	5.28	13 6 48.	29 23 5.42
18	7.8	..	..	..	39.	..	..	..	11 37.88	..	..	IV.	1	10.377	50 31.33	2.56	6.47	11 25.	32 30.36
19	5.6	17.5	34.7	53.	11.	..	..	..	13 30 10.32	..	..	IV.	3	36.590	−23 6.64	− 2.67	−3.03	13 29 57.	−29 5 2.34

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″							in.	°	°	°	°	
Zone 115	May 17,	12	68 2 31.2	39.4	30.3	43.8	15.7	36.6	32.83[a]	..	..	..	66.0		
		12 8	..	..	..	..	..	..	..	29.936	65.0	57.5			
		13 7	..	..	..	..	..	..	..	29.936	63.5	55.0			
		13 30	..	..	..	..	..	..	..	29.936	63.0	53.7			

REMARKS.

May 17, 12h. Night poor; only slight illumination possible; circle reading noted at 67°, but evidently should have been 68°.

(115) 19. Declination about 38″ too large by Mer. C., 1846; Trans., 1849; and Arg. Z. 383 and 404.

[a] Corr. for runs, +0″.07.

ZONE 116. MAY 29. P. $D_{\circ} = -27° 4' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7.8	. .	. .	. .	. .	. .	52.	8.	13 0 16.65	−15.28	−0.82	VI.	4	39.575	−19 56.52	− 6.93	−1.94	13 0 0.55	−27 24 5.39
2	8	45.	2.	19.5	38.	54.3	. .	. .	6 36.98	15.26	0.92	IV.	2	20.315	40 8.78	7.00	4.10	6 20.80	44 19.88
3	9.10	. .	. .	13.	. .	. .	. .	. .	8 30.20	15.26	0.78	III.	4	47.115	12 3.87	7.01	1.11	8 14.16	16 11.99
4	6.7	. .	50.7	8.3	26.2	43.	. .	. .	10 25.57	15.26	0.87	IV.	3	31.857	28 3.43	7.03	2.80	10 9.44	32 13.26
5	10	. .	. .	. .	. .	. .	. .	38.	10 45.57	15.25	0.97	VII.	1	12.153	48 39.98	7.03	5.03	10 29.35	52 52.04
6	9.10	. .	. .	41.	. .	. .	. .	. .	12 58.23	15.25	0.83	III.	4	40.665	18 48.39	7.03	1.82	12 42.15	22 57.24
7	9.10	. .	. .	7.5	. .	. .	. .	. .	14 24.78	15.25	0.87	III.	3	28.383	31 41.26	7.03	3.19	14 8.66	35 51.48
8	7	4.	21.	38.5	. .	13.	. .	. .	15 55.82	15.24	0.88	V.	3	29.083	30 57.85	7.03	3.11	15 39.70	35 7.99
9	8	. .	. .	. .	. .	21.	. .	. .	17 3.47	15.24	0.96	V.	2	13.430	47 20.88	7.03	4.90	16 47.27	51 32.81
10	8	. .	. .	. .	. .	. .	. .	8.	17 15.68	15.24	0.93	VII.	2	19.620	40 52.03	7.03	4.20	16 59.51	45 3.26
11	6	. .	55.2	12.5	30.3	47.2	4.3	. .	23 29.82	15.22	0.81	IV.	4	43.244	16 6.77	7.00	1.54	23 13.79	20 15.31
12	5.6	. .	. .	. .	. .	48.	6.5	. .	24 31.00	15.22	0.98	V.	1	10.036	50 52.80	6.99	5.27	24 14.80	55 5.06
13	8.9	48.	5.2	22.7	41.	57.5	. .	. .	26 40.10	15.21	0.93	IV.	2	20.090	40 22.77	6.98	4.12	26 23.96	44 33.87
14	7	16.3	33.3	51.3	9.7	26.	. .	. .	29 8.54	15.21	0.98	IV.	1	9.660	51 16.21	6.96	5.31	28 52.35	55 28.48
15	7	47.5	5.	. .	40.2	56.8	. .	. .	32 39.58	15.20	0.86	IV.	3	35.168	24 35.91	6.91	2.42	32 23.52	28 45.24
16	8.9	. .	. .	. .	. .	53.7	11.	. .	33 36.32	15.20	0.85	VI.	4	38.650	20 54.47	6.89	2.04	33 20.27	25 3.40
17	7	. .	. .	. .	47.5	. .	20.	. .	35 45.74	15.19	0.99	V.	1	10.607	50 17.02	6.86	5.20	35 29.56	54 29.08
18	9	. .	. .	. .	. .	47.	. .	. .	37 29.47	15.19	0.97	V.	2	13.845	46 54.65	6.83	4.85	37 13.31	51 6.33
19	7	58.5	15.7	33.3	51.2	. .	. .	. .	40 50.56	15.18	0.90	IV.	3	27.362	32 45.71	6.77	3.30	40 34.48	36 55.78
20	7	. .	. .	. .	42.5	. .	. .	. .	41 41.96	15.18	0.85	IV.	3	37.587	22 4.16	6.75	2.16	41 25.93	26 13.07
21	9	. .	. .	. .	. .	. .	23.5	. .	41 48.82	15.18	0.85	VI.	3	37.716	21 56.32	6.75	2.14	41 32.79	26 5.21
22	8	. .	. .	. .	. .	. .	8.	. .	42 33.25	15.17	0.89	VI.	3	30.513	29 28.32	6.73	2.95	42 17.19	33 38.00
23	8	. .	. .	. .	. .	. .	. .	39.	42 46.85	15.17	0.87	VII.	3	33.230	26 37.86	6.72	2.65	42 30.81	30 47.23
24	8	. .	. .	. .	. .	. .	. .	26.5	43 34.32	15.16	0.89	VII.	3	30.015	29 59.37	6.65	3.00	43 18.27	34 9.02
25	8	. .	. .	. .	30.	. .	. .	. .	45 29.48	15.16	0.85	IV.	4	39.035	20 30.64	6.65	2.00	45 13.47	24 39.29
26	8	. .	. .	. .	. .	5.	. .	. .	45 47.62	15.16	0.84	V.	4	39.600	19 55.20	6.65	1.93	45 31.62	24 3.78
27	6	. .	. .	. .	. .	. .	. .	56.5	46 4.18	15.16	0.94	VII.	2	20.340	45 19.77	6.64	4.67	45 48.08	49 31.08
28	7	. .	. .	44.3	3.	19.2	. .	. .	49 1.74	15.15	0.99	IV.	1	11.117	49 44.76	6.56	5.15	48 45.60	53 56.47
29	8.9	. .	. .	26.	44.	0.5	. .	. .	50 43.24	15.15	0.88	IV.	3	34.095	25 43.15	6.52	2.55	50 27.21	29 52.22
30	7.8	11.	28.2	46.	4.2	. .	. .	. .	56 3.25	15.13	0.97	IV.	2	17.423	48 23.97	6.34	5.04	55 47.15	52 35.35
31	7.8	. .	. .	. .	47.3	. .	21.2	. .	56 46.33	15.13	0.96	V.	2	17.070	43 32.31	6.32	4.47	56 30.24	47 43.10
32	8.9	. .	0.5	18.	35.5	. .	. .	. .	13 59 35.18	15.12	0.86	IV.	3	38.584	21 1.62	6.21	2.05	13 59 19.20	25 9.88
33	8	45.5	2.3	20.	38.2	55.	12.2	. .	14 2 37.41	15.11	0.92	IV.	3	25.903	34 16.99	6.09	3.46	14 2 21.38	38 26.54
34	9	. .	46.	3.2	21.5	. .	. .	. .	7 20.71	15.10	0.98	IV.	2	14.495	46 13.97	5.90	4.78	7 4.63	50 24.65
35	8	. .	. .	. .	. .	16.	. .	. .	7 58.71	15.10	0.78	V.	4	53.920	4 56.95	5.88	0.36	7 42.83	9 3.19
36	9	. .	. .	. .	. .	11.	. .	. .	8 53.71	15.09	0.78	V.	4	53.680	5 12.07	5.84	0.39	8 37.84	9 18.30
37	9	. .	. .	. .	. .	. .	. .	3.	9 11.16	15.09	0.78	VII.	4	55.070	3 44.35	5.82	0.24	8 55.29	7 50.41
38	7	53.	10.	27.5	45.2	2.3	19.3	. .	10 44.79	15.09	0.85	IV.	4	42.210	17 11.63	5.76	1.65	10 28.85	21 19.04
39	6.7	. .	2.2	20.	38.3	55.	. .	. .	13 37.38	15.08	0.92	IV.	3	27.137	32 59.70	5.61	3.33	13 21.38	37 8.64
40	8	33.5	51.	8.5	26.	43.	. .	. .	15 25.62	15.08	0.88	IV.	3	35.952	23 46.53	5.53	2.34	15 9.66	27 54.40
41	7	. .	12.	30.	47.8	4.3	. .	. .	16 47.06	15.07	0.87	IV.	3	36.943	22 44.37	5.46	2.23	16 31.12	26 52.06
42	9	2.	19.	. .	54.	. .	. .	. .	18 53.73	15.06	0.82	IV.	4	48.710	10 23.84	5.34	0.94	18 37.85	14 30.12
43	7.8	. .	28.	45.5	. .	. .	37.2	. .	19 2.68	15.06	0.81	VI.	4	49.613	9 26.97	5.35	0.83	18 46.81	13 33.15
44	7	. .	. .	. .	. .	25.3	. .	. .	20 7.97	15.06	0.82	V.	4	48.580	10 32.00	5.30	0.95	19 52.09	14 38.25
45	9	. .	. .	. .	. .	23.	. .	. .	21 5.61	15.06	0.87	V.	3	38.135	21 29.98	5.24	2.10	20 49.68	25 37.32
46	7.8	. .	. .	. .	59.	. .	33.2	. .	21 58.57	15.05	0.84	IV.	4	43.140	16 13.23	5.19	1.55	21 42.68	20 20.97
47	9	. .	. .	. .	39.5	. .	. .	. .	23 39.02	15.05	0.85	IV.	4	41.417	18 1.42	5.10	1.74	23 23.12	22 8.26
48	9	. .	. .	. .	. .	. .	. .	41.	23 49.11	15.05	0.80	VII.	4	52.055	6 53.40	5.08	0.57	23 33.26	10 59.05
49	8	12.5	30.	47.2	5.2	22.	. .	. .	14 27 4.59	−15.04	−0.84	IV.	4	41.673	−17 45.18	− 4.90	−1.71	14 26 48.71	−27 21 51.79

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 116	May 29,	13 0	66 24 66.7	67.0	63.2	72.2	43.3	69.0	63.57	29.936	72.5	74.0	67.0	63.0	62.0
		13 59	. .	. .	. .	. .	. .	. .	. .	29.940	74.0	72.5			
		15 0	. .	. .	. .	. .	. .	. .	. .	29.944	73.2	71.0			

REMARKS.

(116) 24. Minutes assumed as 43 instead of 45.

(116) 27. Micrometer reading assumed as 15ʳ.340 instead of 20ʳ.340.

(116) 30. Micrometer reading assumed as 12ʳ.423 instead of 17ʳ.423, to agree with Arg. Z. 302, 67.

ZONE 116. MAY 29. P. $D_o = -27° 4' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	. .	. .	. .	0.7	. .	35.2	. .	14 28 0.20	−15.03	−0.92	IV.	3	28.350	−31 43.71	− 4.84	−3.19	14 27 44.25	−27 35 51.74
51	9	. .	. .	. .	. .	. .	. .	37.	28 44.76	15.03	0.94	VII.	3	25.633	34 34.39	4.81	3.49	28 28.79	38 42.69
52	9	. .	. .	. .	. .	10.	. .	. .	31 52.59	15.02	0.90	V.	3	34.510	25 17.43	4.62	2.51	31 36.67	29 24.56
53	7	. .	50.2	8.	25.5	42.3	. .	. .	33 25.04	15.02	0.88	IV.	3	38.522	21 5.51	4.51	2.05	33 9.14	25 12.07
54	7	. .	. .	. .	. .	. .	29.	. .	33 54.48	15.02	0.80	VI.	4	54.410	4 26.23	4.48	0.31	33 38.66	8 31.02
55	7.8	. .	. .	17.	35.	51.5	. .	. .	35 34.15	15.01	0.95	IV.	3	21.822	38 33.08	4.38	2.93	35 18.19	42 40.39
56	8	. .	. .	. .	. .	. .	0.7	17.5	36 25.74	15.01	0.87	VI.	4	39.045	20 29.69	4.32	2.00	36 9.86	24 36.01
57	8.9	. .	. .	. .	39.	. .	. .	. .	38 38.17	15.00	0.95	IV.	3	23.495	36 48.29	4.18	3.75	38 22.22	40 56.22
58	8	56.	. .	30.5	48.3	. .	. .	. .	40 47.81	14.99	0.89	IV.	3	35.923	23 48.35	4.03	2.34	40 31.93	27 54.72
59	4	. .	. .	. .	45.5	3.	. .	. .	41 45.36	14.99	0.85	IV.	4	43.520	15 49.46	3.96	1.51	41 29.52	19 54.93
60	7.8	. .	. .	. .	. .	36.	54.	. .	42 18.85	14.99	0.96	V.	3	22.540	37 48.47	3.93	3.85	42 2.90	41 56.25
61	7	17.	35.	52.5	. .	. .	. .	. .	45 9.69	14.98	0.98	III.	2	17.460	43 7.70	3.72	3.43	44 53.73	47 14.85
62	6.7	. .	. .	27.	44.7	1.8	. .	. .	45 44.15	14.98	0.97	III.	2	20.672	39 46.00	3.68	4.06	45 28.20	43 53.74
63	9	. .	. .	. .	. .	. .	. .	51.5	46 59.25	14.97	0.95	VII.	3	24.850	35 23.45	3.59	3.60	46 43.33	39 30.64
64	8	59.	. .	34.	. .	. .	. .	. .	48 51.09	14.96	0.89	III.	3	36.950	22 43.55	3.46	2.23	48 35.24	26 49.24
65	9	32.	. .	6.	. .	. .	. .	. .	53 23.64	14.95	0.92	III.	3	31.435	28 29.78	3.11	2.85	53 7.77	32 35.74
66	6.7	35.	51.7	. .	. .	44.	. .	. .	53 26.70	14.95	0.90	V.	3	36.083	23 38.70	3.11	2.32	53 10.85	27 44.13
67	7.8	. .	47.3	4.5	22.5	. .	. .	. .	55 21.95	14.94	0.90	IV.	3	35.670	24 4.30	2.95	2.37	55 6.11	28 9.62
68	7	. .	. .	. .	. .	4.5	27.	. .	55 52.16	14.94	0.97	V.	2	22.052	38 19.65	2.93	3.91	55 36.25	42 26.49
69	9	. .	. .	. .	27.	. .	. .	. .	14 57 26.16	14.94	0.97	IV.	2	22.590	37 45.89	2.78	3.85	14 57 10.25	41 52.52
70	7	30.	47.	5.	23.	39.5	. .	. .	15 0 22.12	−14.93	−0.99	IV.	2	17.693	−42 53.15	− 2.54	−4.41	15 0 6.20	−27 47 0.10

ZONE 117. JUNE 11. P. $D_o = -27° 41' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	9.	26.5	44.	2.	19.	. .	. .	14 17 1.42	−17.50	−0.57	IV.	3	29.057	−30 59.25	−36.16	−4.09	14 16 43.35	−28 12 39.48
2	7	. .	6.7	24.5	43.	59.7	. .	. .	20 42.02	17.50	0.63	V.	2	20.900	39 31.87	35.96	5.05	20 23.89	28 21 12.88
3	8.9	. .	31.5	49.	. .	. .	. .	. .	23 6.40	17.49	0.46	III.	4	43.567	15 46.45	35.81	2.42	22 48.45	27 57 24.68
4	8	. .	. .	. .	. .	. .	17.	. .	23 41.82	17.49	0.75	VI.	1	8.000	53 0.67	35.77	6.57	23 23.58	28 34 43.01
5	9	. .	28.5	. .	4.	. .	. .	. .	28 3.47	17.48	0.59	IV.	3	29.270	30 45.99	35.50	4.06	27 45.40	12 25.55
6	7.8	. .	. .	. .	. .	49.	. .	24.5	28 31.82	17.48	0.53	V.	3	37.430	22 19.97	35.47	3.15	28 13.81	28 3 58.59
7	8	. .	. .	. .	14.5	. .	. .	. .	31 14.06	17.48	0.49	IV.	4	42.923	16 26.71	35.30	2.50	30 56.09	27 58 4.51
8	7	36.3	53.3	11.	. .	. .	. .	. .	33 28.47	17.47	0.59	III.	3	30.665	29 17.97	35.17	3.92	33 10.41	28 10 57.06
9	8	. .	. .	. .	40.5	. .	. .	. .	33 39.77	17.47	0.61	IV.	3	28.610	31 27.28	35.16	4.14	33 21.69	13 6.58
10	8.9	. .	. .	. .	. .	. .	. .	27.	33 34.46	17.47	0.61	VII.	3	25.855	34 20.32	35.17	4.47	33 16.38	15 59.96
11	8.9	. .	. .	. .	. .	. .	. .	47.5	35 54.87	17.47	0.68	VII.	2	19.700	40 46.94	35.00	5.18	35 36.72	22 27.12
12	8	. .	17.	34.7	. .	. .	. .	. .	40 52.13	17.46	0.64	III.	3	27.495	32 36.91	34.69	4.27	40 34.03	14 15.87
13	7	. .	. .	. .	24.	40.5	. .	. .	41 22.98	17.46	0.70	IV.	2	17.718	42 51.58	34.66	5.41	41 4.82	24 31.65
14	7.8	22.	39.	56.7	15.	. .	. .	. .	44 14.21	17.45	0.66	IV.	3	24.333	35 55.77	34.48	4.64	43 56.10	28 17 34.89
15	6.7	. .	. .	. .	12.	29.5	. .	. .	45 11.93	17.44	0.45	IV.	4	53.200	5 42.41	34.42	1.35	44 54.04	27 47 18.18
16	6	. .	. .	. .	. .	3.7	21.	. .	45 46.30	17.44	0.42	V.	4	56.423	2 20.27	34.39	0.99	45 28.44	27 43 55.65
17	5	42.7	59.8	18.3	37.	. .	. .	. .	48 35.52	17.44	0.80	IV.	1	9.728	51 11.88	34.22	6.37	48 17.28	28 32 52.47
18	7	. .	. .	37.	55.	11.5	. .	. .	49 54.25	17.44	0.58	IV.	3	35.387	24 22.23	34.14	3.39	49 36.23	5 59.76
19	8	9.3	26.	44.5	. .	. .	. .	. .	54 1.65	17.43	0.75	III.	2	17.650	42 55.73	33.87	5.43	53 43.47	24 35.03
20	8	. .	. .	47.5	4.	. .	. .	. .	55 46.44	17.43	0.77	IV.	2	15.057	45 38.58	33.81	5.74	54 28.24	27 18.13
21	9	. .	. .	. .	. .	25.	. .	. .	56 7.39	17.42	0.75	V.	2	16.723	43 54.09	33.74	5.54	55 49.22	25 33.37
22	8.9	. .	. .	. .	. .	18.	. .	. .	57 0.49	17.42	0.64	V.	3	33.763	26 4.11	33.68	3.55	56 42.43	7 41.34
23	7.8	. .	. .	9.	26.5	. .	. .	. .	58 26.06	17.42	0.69	IV.	3	27.427	32 41.61	33.59	4.28	58 7.95	14 19.48
24	8	. .	. .	. .	. .	. .	18.	. .	14 58 42.98	−17.42	−0.72	VI.	3	23.673	−36 37.38	−33.57	−4.72	14 58 24.84	−28 18 15.67

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847..	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 117	June 11, 14 15	67 2 34.3	36.0	30.5	44.0	10.5	36.7	32.00[a]	29.756	74.7	71.5	75.0	. .	75.0
	14 40	. .	. .	. .	. .	. .	. .	. .	29.762	74.2	71.4			
	15 18	. .	. .	. .	. .	. .	. .	. .	29.774	74.0	69.0			
	16 24	. .	. .	. .	. .	. .	. .	. .	29.800	73.0	67.7			
	16 47	. .	. .	. .	. .	. .	. .	. .	29.808	72.6	67.5			
	17 29	. .	. .	. .	. .	. .	. .	. .	29.820	72.5	66.5			
	18 14	. .	. .	. .	. .	. .	. .	. .	29.826	72.0	64.2			

REMARKS.

(116) 63. Right ascension 1^m discordant from Arg. 373, 24.

(116) 68. Transits discordant; that over T. V rejected.

(117) 8. Declination 30′ discordant from Arg. Z. 383, 126; and Mural, 1848, May 3.

(117) 20. Transits over T.'s IV and V assumed as recorded over T.'s III and IV; and minutes as 54, not 55.

[a] Corr. for runs, +0″.06.

ZONE 117. JUNE 11. P. $D_0 = -27° 41' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
25	7	. .	. .	. .	. .	. .	59.	16.	15 1 24.06	−17.41	−0.49	VI.	4	53.450	− 5 26.42	−33.38	−1.28	15 1 6.16	−27 47 1.08
26	9	. .	. .	. .	. .	. .	4.	. .	4 29.04	17.41	0.67	VI.	3	29.982	30 1.50	33.15	4.00	4 10.96	28 11 38.65
27	8	. .	. .	. .	. .	. .	. .	50.5	5 57.75	17.40	0.82	VII.	2	11.820	49 1.44	33.04	6.15	5 39.53	30 40.63
28	7	. .	59.5	17.3	35.5	52.3	. .	. .	10 34.69	17.39	0.79	IV.	2	16.880	43 44.11	32.68	5.55	10 16.51	28 25 22.34
29	6	. .	. .	. .	48.5	. .	23.	. .	11 48.30	17.39	0.48	IV.	4	56.055	2 43.28	32.58	1.00	11 30.43	27 44 16.86
30	8	. .	. .	. .	. .	. .	22.	. .	12 47.07	17.39	0.66	VI.	3	33.317	26 32.40	32.49	3.60	12 29.02	28 8 8.49
31	9	. .	. .	. .	54.	. .	. .	. .	18 53.22	17.37	0.72	IV.	3	25.720	34 28.54	31.97	4.50	18 35.13	16 5.01
32	6	. .	. .	54.	12.	29.	. .	. .	20 11.32	17.37	0.76	IV.	3	21.577	38 48.64	31.86	4.98	19 53.19	20 25.48
33	8	. .	. .	. .	. .	57.	. .	. .	20 39.43	17.37	0.75	V.	3	22.590	37 45.27	31.82	4.86	20 21.31	28 19 21.95
34	7	. .	22.	39.5	57.3	14.3	. .	. .	22 56.89	17.36	0.57	IV.	4	47.345	11 49.63	31.60	1.98	22 38.96	27 53 23.21
35	7	33.	50.	7.5	. .	. .	. .	. .	26 24.99	17.36	0.60	3.	4	43.025	16 20.32	31.27	2.48	26 7.03	27 57 54.07
36	7	. .	. .	. .	. .	48.3	. .	. .	26 30.65	17.35	0.86	V.	2	9.920	51 1.01	31.26	6.38	26 12.44	28 32 38.65
37	6	. .	. .	. .	. .	40.	57.7	. .	27 22.47	17.35	0.84	V.	2	12.705	48 6.27	31.17	6.05	27 4.28	28 29 43.49
38	6.7	. .	. .	. .	27.	. .	2.	. .	29 27.09	17.35	0.48	IV.	4	57.750	0 56.96	30.97	0.79	29 9.26	27 42 28.72
39	9	25.	. .	0.	. .	. .	. .	. .	33 17.44	17.34	0.80	III.	2	18.115	42 26.54	30.57	5.40	34 59.30	28 24 2.51
40	7	. .	. .	28.5	46.5	4.	. .	. .	34 46.09	17.33	0.66	IV.	3	36.105	23 37.07	30.42	3.29	34 28.10	5 10.78
41	7	29.5	46.7	4.5	. .	. .	. .	14.	36 21.73	17.33	0.64	III.	3	37.885	21 44.91	30.26	3.08	35 3.76	3 18.25
42	7	37.5	54.	12.3	30.5	. .	. .	. .	39 29.62	17.32	0.77	IV.	3	22.688	37 38.81	29.92	4.85	39 11.53	19 13.58
43	8	. .	. .	17.5	. .	. .	. .	. .	40 34.93	17.32	0.84	III.	2	15.653	45 1.06	29.81	5.70	40 16.77	26 36.57
44	8	. .	. .	. .	. .	7.	. .	. .	40 49.38	17.32	0.83	V.	2	15.678	44 59.68	29.78	5.70	40 31.23	26 35.16
45	8	. .	. .	. .	. .	. .	. .	10.5	41 17.98	17.32	0.75	VII.	3	27.175	32 57.69	29.73	4.32	40 59.91	14 31.74
46	7.8	. .	56.	. .	32.5	. .	. .	. .	44 31.39	17.31	0.88	IV.	1	10.417	50 28.82	29.37	6.32	44 13.20	28 32 4.51
47	7.8	59.	16.3	34.	51.5	. .	. .	. .	46 51.20	17.31	0.59	IV.	4	45.867	13 22.07	29.11	2.16	46 33.30	27 54 53.34
48	8	. .	. .	54.3	. .	29.	. .	. .	48 11.57	17.30	0.75	V.	3	27.403	32 43.38	28.95	4.29	47 53.52	28 14 16.62
49	8	. .	. .	. .	40.	. .	. .	. .	49 39.68	17.30	0.57	IV.	4	48.772	10 19.89	28.79	1.81	49 21.81	27 51 50.49
50	7.8	. .	. .	. .	. .	55.	. .	. .	50 37.35	17.30	0.90	V.	1	9.190	51 45.97	28.68	6.47	50 19.15	28 33 21.12
51	8	. .	. .	. .	. .	34.	. .	. .	52 16.56	17.29	0.60	V.	4	46.446	12 45.87	28.48	2.09	51 58.67	27 54 16.44
52	8.9	. .	. .	. .	. .	. .	31.5	. .	52 56.68	17.29	0.62	VI.	4	43.980	15 20.11	28.41	2.36	52 38.77	27 56 50.88
53	8	. .	. .	. .	. .	. .	33.5	. .	53 58.62	17.29	0.66	VI.	4	38.135	21 26.84	28.28	3.05	53 40.67	28 2 58.17
54	9	. .	. .	. .	. .	. .	. .	24.5	54 32.12	17.29	0.68	VII.	4	36.590	23 3.38	28.21	3.23	54 14.15	4 34.82
55	7	. .	. .	. .	. .	. .	. .	25.	55 32.25	17.29	0.88	VII.	2	11.617	49 14.31	28.09	6.18	55 14.08	30 48.58
56	8	. .	. .	. .	. .	. .	14.	. .	56 39.06	17.28	0.72	VI.	3	31.820	28 6.13	27.96	3.78	56 21.06	9 37.87
57	9	. .	. .	. .	. .	43.	. .	. .	58 25.38	17.28	0.86	V.	2	14.780	45 55.97	27.75	5.80	58 7.24	27 29.52
58	8	. .	. .	. .	. .	. .	. .	23.	15 59 30.21	17.28	0.91	VII.	1	8.630	52 21.13	27.62	6.54	15 59 12.02	33 55.29
59	5	26.	42.3	1.	19.	. .	. .	. .	16 3 18.09	17.27	0.66	IV.	4	39.667	19 50.98	27.15	2.85	16 3 0.16	28 1 20.98
60	7	. .	. .	. .	. .	18.	35.5	. .	5 0.65	17.27	0.59	V.	4	48.753	10 21.02	26.93	1.79	4 42.79	27 51 49.74
61	4	26.	43.3	1.	19.	36.	. .	. .	9 18.38	17.26	0.77	IV.	3	27.453	32 39.99	26.39	4.30	9 0.35	28 14 10.68
62	8	. .	. .	. .	9.3	26.5	. .	. .	10 8.99	17.25	0.61	V.	4	45.960	13 16.17	26.29	2.12	9 51.13	27 54 44.58
63	9	. .	. .	. .	. .	. .	50.	. .	11 14.94	17.25	0.82	VI.	2	20.070	39 21.23	26.14	5.18	10 56.87	28 20 52.55
64	7.8	. .	37.5	. .	12.5	. .	. .	. .	24 12.32	17.22	0.56	IV.	4	52.935	5 58.84	24.40	1.32	23 54.54	27 47 24.56
65	3	59.	16.	33.8	51.5	. .	. .	. .	26 51.07	17.21	0.61	IV.	4	46.640	12 33.72	24.04	2.05	26 33.25	27 53 59.81
66	8	. .	. .	. .	. .	. .	35.	. .	27 0.12	17.21	0.67	VI.	4	38.395	21 10.58	24.01	3.00	26 42.24	28 2 37.59
67	9	. .	. .	. .	. .	. .	9.	. .	28 33.97	17.21	0.79	VI.	3	23.450	36 51.48	23.81	4.78	28 15.97	18 20.07
68	8.9	. .	. .	14.	. .	49.	. .	. .	32 31.42	17.20	0.78	V.	3	24.335	35 55.89	23.25	4.67	32 13.44	17 23.81
69	8	. .	. .	5.	23.5	. .	. .	. .	34 22.67	17.20	0.66	IV.	4	39.715	19 47.99	22.98	2.85	34 4.81	1 13.82
70	6	. .	20.7	38.2	56.5	. .	31.	. .	35 55.81	17.19	0.76	IV.	3	28.043	32 2.78	22.76	4.23	35 37.86	13 29.77
71	7	. .	. .	. .	. .	. .	3.5	. .	36 28.33	17.19	0.90	VI.	1	8.975	51 59.45	22.68	6.53	36 10.24	33 28.66
72	7	0.5	17.7	35.5	53.3	. .	. .	. .	38 52.77	17.18	0.69	IV.	3	34.880	24 53.79	22.34	3.42	38 34.90	28 6 19.55
73	7	. .	. .	44.5	. .	. .	. .	. .	16 42 1.78	−17.18	−0.53	III.	4	57.140	− 1 35.32	−21.89	−0.83	16 41 44.07	−27 42 58.04

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ' "	r.

REMARKS.

(117) 41. Minutes assumed as 35 instead of 36.

(117) 63. Micrometer reading assumed as $21^r.070$ instead of $20^r.070$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.			B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	°	'	"						"	in.	°	°	°	°	°

ZONE 117. JUNE 11. P. $D_0 = -27° 41' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
74	7	. .	. .	. .	. .	38.	. .	. .	16 42 20.60	−17.18	−0.53	V.	4	54.727	− 4 6.42	−21.84	−1.10	16 42 2.89	−27 45 29.36
75	8	. .	. .	. .	56.	. .	. .	. .	43 55.53	17.17	0.64	IV.	4	41.510	17 55.53	21.61	2.64	43 37.72	27 59 19.78
76	7.8	. .	. .	. .	. .	. .	. .	59.5	44 7.02	17.17	0.73	VII.	3	29.965	30 2.51	21.58	4.00	43 49.12	28 11 28.09
77	9	. .	. .	. .	. .	. .	. .	16.	45 23.41	17.17	0.79	VII.	3	23.113	37 12.51	21.39	4.82	45 5.45	28 18 38.72
78	8	. .	. .	. .	. .	. .	. .	3.5	47 11.21	17.17	0.61	VII.	4	44.127	9 56.87	21.12	1.76	46 53.43	27 51 19.75
79	8	. .	. .	24.	. .	. .	. .	. .	49 41.34	17.16	0.66	III.	3	37.830	21 48.36	20.75	3.07	49 23.52	28 3 12.18
80	7.8	. .	. .	. .	. .	13.	. .	. .	49 55.42	17.16	0.80	V.	3	22.230	38 7.91	20.72	4.93	49 37.46	19 33.56
81	7.8	. .	. .	. .	. .	. .	46.5	. .	50 11.52	17.16	0.74	VI.	3	27.983	32 6.86	20.68	4.33	49 53.62	13 31.87
82	7	. .	. .	. .	. .	39.	. .	. .	51 21.40	17.16	0.82	V.	2	17.865	42 42.35	20.51	5.45	51 3.42	24 8.31
83	7	. .	. .	. .	. .	13.5	. .	. .	51 55.92	17.15	0.80	V.	2	22.403	37 57.75	20.41	4.90	51 37.97	19 23.06
84	9	. .	. .	. .	. .	. .	5.	. .	53 30.04	17.15	0.73	VI.	3	30.312	29 40.93	20.18	3.96	53 12.16	11 5.07
85	7	. .	. .	. .	53.	. .	. .	. .	54 52.48	17.15	0.66	IV.	3	38.743	20 51.52	19.97	2.96	54 34.67	2 14.45
86	6	. .	. .	. .	. .	36.	. .	11.5	55 18.65	17.15	0.80	V.	2	20.580	39 52.08	19.91	5.12	55 0.70	21 17.11
87	8.9	49.	6.	24.	. .	. .	. .	. .	58 41.37	17.14	0.81	III.	2	19.430	41 4.13	19.40	5.23	58 23.42	28 22 28.76
88	8	. .	. .	. .	. .	30.	. .	. .	59 12.56	17.14	0.60	V.	4	46.585	12 37.11	19.32	2.05	58 54.82	27 53 58.48
89	8	. .	. .	. .	. .	. .	17.	. .	16 59 42.14	17.13	0.65	VI.	4	39.920	19 34.68	19.24	2.83	16 59 24.36	28 0 56.75
90	8	35.	52.	10.	28.3	. .	. .	. .	17 5 27.36	17.12	0.73	IV.	3	27.780	32 19.22	18.36	4.27	17 5 9.51	13 41.85
91	9	. .	. .	59.	. .	. .	. .	. .	10 16.41	17.11	0.80	III.	2	20.760	39 40.40	17.64	5.12	9 58.50	21 3.16
92	8	. .	. .	. .	4.5	. .	38.5	. .	11 3.82	17.11	0.64	VI.	4	39.660	19 51.11	17.52	2.84	10 46.07	28 1 11.47
93	8.9	. .	33.5	51.5	9.5	. .	. .	. .	13 8.80	17.10	0.55	IV.	4	49.485	9 39.81	17.21	1.69	12 51.15	27 50 58.71
94	4	. .	. .	56.	13.3	30.5	. .	. .	14 13.06	17.10	0.62	IV.	4	41.273	18 10.40	17.04	2.65	13 55.34	27 59 30.09
95	8	. .	. .	. .	. .	30.5	. .	. .	15 12.86	17.10	0.83	V.	2	11.830	49 1.13	16.88	6.22	14 54.93	28 30 24.23
96	9	. .	. .	23.	. .	. .	. .	. .	16 40.44	17.09	0.85	III.	2	11.605	49 15.13	16.66	6.24	16 22.50	30 38.03
97	7	. .	. .	. .	59.	. .	. .	. .	16 58.06	17.09	0.79	IV.	2	18.003	42 33.69	16.61	5.45	16 40.18	23 55.75
98	7	. .	. .	. .	. .	. .	41.	58.5	17 5.97	17.09	0.74	VI.	3	25.070	35 9.70	16.60	4.59	16 48.14	16 30.89
99	7.8	. .	. .	. .	. .	54.	. .	. .	18 36.46	17.09	0.71	V.	3	28.003	32 5.54	16.36	4.24	18 18.66	28 13 26.14
100	8	. .	. .	. .	. .	. .	33.	. .	22 58.15	17.08	0.60	VI.	4	40.940	18 30.77	15.69	2.69	22 40.47	27 59 49.15
101	8	. .	26.	43.5	1.5	. .	. .	. .	26 0.94	17.07	0.65	IV.	3	35.345	24 24.86	15.19	3.36	25 43.22	28 5 43.41
102	7.8	41.5	58.	16.5	35.	. .	. .	. .	28 33.80	17.07	0.76	IV.	2	21.415	38 59.75	14.81	5.04	28 15.97	20 19.60
103	7	. .	15.5	33.	51.5	8.5	. .	. .	29 50.68	17.07	0.75	IV.	2	22.712	37 38.17	14.62	4.89	29 32.86	28 18 57.68
104	7.8	. .	. .	17.	34.5	. .	. .	. .	31 34.27	17.06	0.51	IV.	4	51.955	7 0.29	14.34	1.39	31 16.70	27 48 16.02
105	8	30.	47.3	5.3	23.	. .	. .	. .	33 22.44	17.06	0.70	IV.	3	27.488	32 37.79	14.06	4.30	33 4.68	28 13 56.15
106	6	. .	. .	. .	9.	26.3	44.	. .	34 8.96	17.06	0.50	V.	4	51.880	7 4.87	13.95	1.41	33 51.40	27 48 20.23
107	8	. .	. .	. .	27.	. .	. .	. .	35 26.40	17.05	0.64	IV.	3	34.780	25 0.06	13.74	3.42	35 8.71	28 6 17.22
108	8	. .	. .	. .	. .	44.	. .	. .	36 26.42	17.05	0.75	V.	2	21.563	38 50.40	13.58	5.02	36 8.62	28 20 9.00
109	4.5	. .	. .	7.3	. .	42.3	. .	. .	38 24.74	17.05	0.48	III.	4	54.020	4 50.81	13.27	1.15	38 7.21	27 46 5.23
110	8	. .	. .	. .	. .	58.	. .	33.	39 40.50	17.04	0.67	VII.	3	29.976	30 1.82	13.07	4.00	39 22.79	28 11 18.89
111	9	. .	24.	. .	. .	. .	. .	. .	42 59.28	17.04	0.77	II.	2	17.550	43 1.68	12.54	5.51	42 41.47	24 19.73
112	8	. .	. .	. .	. .	20.	. .	. .	43 2.38	17.04	0.78	V.	2	15.915	44 44.73	12.54	5.70	42 44.56	26 2.97
113	7.8	. .	. .	. .	11.5	. .	. .	. .	44 11.00	17.03	0.59	IV.	3	39.840	19 42.66	12.35	2.82	43 53.38	0 57.83
114	5.6	39.3	56.7	14.	32.	. .	. .	. .	47 31.51	17.03	0.59	IV.	3	38.707	20 53.77	11.83	2.96	47 13.89	2 8.56
115	8	. .	. .	41.	. .	. .	. .	. .	48 58.36	17.02	0.64	III.	3	32.810	27 3.26	11.59	3.66	48 40.70	8 18.51
116	8	. .	. .	. .	. .	17.	. .	. .	48 59.50	17.02	0.63	V.	3	34.000	25 49.30	11.59	3.52	48 41.85	7 4.41
117	8	3.5	21.	38.5	. .	. .	. .	. .	52 56.04	17.01	0.74	III.	2	18.960	41 33.37	10.96	5.31	52 38.29	28 22 49.64
118	8	. .	. .	. .	. .	. .	. .	34.	52 41.77	17.01	0.50	VII.	4	48.320	10 47.74	11.00	1.82	52 24.26	27 52 0.56
119	7	. .	. .	. .	. .	. .	19.5	37.5	53 45.03	17.01	0.48	VI.	4	50.983	8 0.93	10.83	1.51	53 27.54	49 13.27
120	8	. .	. .	. .	32.3	. .	. .	. .	55 31.97	17.01	0.48	IV.	4	48.465	10 39.33	10.54	1.81	55 49.48	51 51.68
121	8	. .	. .	. .	12.	. .	46.5	. .	56 11.72	17.01	0.49	IV.	4	50.083	8 57.74	10.43	1.62	55 54.22	27 50 9.79
122	8	. .	. .	. .	24.5	. .	. .	. .	17 57 23.40	−17.00	−0.80	IV.	1	9.880	−51 2.27	−10.24	−6.44	17 57 5.60	−28 32 18.95

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(117) 78. Micrometer reading assumed as $49^r.127$, not $44^r.127$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 117. JUNE 11. P. $D_0 = -27° 41' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
123	7	. .	. .	. .	. .	. .	9.3	. .	17 57 34.24	−17.00	−0.72	VI.	2	19.503	−40 59.67	−10.21	−5.27	17 57 16.52	−28 22 15.15
124	4	. .	. .	. .	54.	10.5	. .	. .	58 52.93	17.00	0.77	IV.	2	13.928	46 49.37	10.01	5.96	58 35.16	28 28 5.34
125	7	. .	. .	. .	. .	0.0	. .	. .	59 25.22	17.00	0.50	V.	4	47.690	11 27.68	9.92	1.90	59 7.72	27 52 38.50
126	9	. .	. .	. .	. .	. .	. .	37.	17 59 44.83	17.00	0.46	VII.	4	52.170	6 46.25	9.87	1.37	59 27.37	47 57.49
127	7	. .	. .	. .	. .	. .	. .	1.5	18 0 9.37	17.00	0.44	VII.	4	54.970	3 50.56	9.80	1.00	17 59 51.93	27 45 1.36
128	7	. .	. .	. .	. .	. .	. .	14.	1 21.53	17.00	0.63	VII.	3	30.730	29 14.51	9.61	3.92	18 1 3.90	28 10 28.04
129	7	. .	. .	. .	. .	52.	. .	. .	2 34.51	16.99	0.57	V.	3	37.482	22 10.99	9.40	3.09	2 16.95	3 23.48
130	7	. .	. .	. .	27.5	. .	. .	. .	3 26.70	16.99	0.67	IV.	3	25.340	34 52.58	9.27	4.57	3 9.04	16 6.42
131	8	34.5	51.7	9.3	. .	. .	. .	. .	5 26.68	16.99	0.54	III.	4	39.750	19 45.73	8.95	2.83	5 9.15	0 57.51
132	7.8	. .	. .	11.5	29.3	. .	. .	. .	6 28.77	16.98	0.59	IV.	3	33.847	25 58.59	8.78	3.54	6 11.20	7 10.91
133	9	. .	. .	. .	19.	. .	. .	. .	7 18.12	16.98	0.69	IV.	2	20.803	39 37.89	8.65	5.12	7 0.45	20 51.66
134	6	. .	. .	. .	12.	28.3	. .	. .	8 10.93	16.98	0.69	IV.	2	21.915	38 28.12	8.50	5.00	7 53.26	19 41.62
135	8	. .	. .	. .	. .	. .	. .	19.3	8 26.85	16.98	0.60	VII.	3	32.715	27 9.97	8.47	3.68	8 9.27	8 22.12
136	9	. .	. .	. .	. .	. .	27.7	. .	9 52.69	16.98	0.65	VI.	3	25.423	34 47.68	8.23	4.56	9 35.06	16 0.47
137	8	. .	10.5	28.	. .	. .	. .	. .	11 45.50	16.97	0.60	III.	3	30.517	29 27.31	7.93	3.94	11 27.93	10 39.18
138	5.6	. .	13.	31.3	. .	. .	. .	. .	12 48.54	16.97	0.75	III.	2	12.485	48 19.95	7.76	6.17	12 30.82	29 33.88
139	8.9	. .	28.	46.	. .	. .	. .	. .	18 14 3.39	−16.97	−0.74	III.	2	13.330	−47 26.98	−7.56	−6.07	18 13 45.68	−28 28 40.61

ZONE 118. JUNE 14. P. $D_0 = -27° 3' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	30.5	48.2	5.	. .	. .	16 0 47.64	−18.88	−1.06	IV.	3	34.344	−25 27.66	−54.97	−2.48	16 0 27.70	−27 29 25.11
2	7	7.	23.7	41.	. .	. .	. .	. .	2 58.43	18.88	0.97	III.	4	53.434	5 27.74	54.71	0.31	2 38.58	9 22.76
3	4	. .	. .	. .	25.	41.8	59.	. .	3 24.32	18.88	1.08	IV.	3	31.940	27 58.22	54.65	2.77	3 4.36	31 55.64
4	8	. .	. .	. .	. .	. .	31.5	. .	3 56.64	18.87	1.15	VI.	2	19.995	40 28.61	54.59	4.16	3 36.62	44 27.36
5	7	. .	. .	. .	. .	20.3	37.8	. .	5 2.82	18.87	1.20	V.	2	12.910	47 53.34	54.45	4.99	4 42.75	51 52.78
6	8.9	. .	. .	9.	27.5	. .	. .	. .	7 26.44	18.87	1.17	IV.	2	17.567	43 1.18	54.14	4.44	7 6.40	46 59.76
7	6.7	28.5	45.3	3.3	21.5	38.	. .	. .	9 20.54	18.87	1.15	IV.	3	24.207	36 3.61	53.91	3.66	9 0.52	40 1.18
8	7	. .	. .	. .	28.7	45.7	. .	. .	10 10.94	18.86	1.22	IV.	1	10.110	50 47.97	53.80	5.33	9 50.86	54 47.10
9	8	48.5	5.5	23.3	41.	. .	. .	. .	12 40.46	18.86	1.12	IV.	3	29.924	30 4.70	53.49	3.00	12 20.48	34 1.19
10	7	. .	. .	51.3	9.	. .	. .	. .	14 8.46	18.86	1.12	IV.	3	32.515	27 22.33	53.30	2.70	13 48.48	31 18.33
11	7.8	24.2	41.	58.7	. .	. .	. .	. .	16 15.91	18.85	1.06	III.	4	44.353	14 57.22	53.02	1.33	15 56.00	18 51.57
12	7.8	. .	. .	. .	. .	38.3	. .	. .	16 20.93	18.85	1.10	V.	4	41.170	18 16.72	53.02	1.72	16 0.98	22 11.46
13	8	. .	. .	. .	. .	. .	28.	. .	16 53.29	18.85	1.12	VI.	3	35.505	24 15.13	52.93	2.36	16 33.32	28 10.42
14	7.8	. .	. .	. .	. .	. .	8.3	. .	17 33.67	18.85	1.07	VI.	4	42.807	16 33.61	52.86	1.51	17 13.75	20 27.98
15	6	26.	43.3	1.	19.	35.7	53.	10.3	21 18.21	18.84	1.15	IV.	3	29.104	30 56.28	52.37	3.09	20 58.22	34 51.74
16	7	22.3	. .	57.3	. .	. .	49.	. .	24 14.40	18.84	1.23	VI.	2	17.105	43 30.05	51.98	4.50	23 54.33	47 26.53
17	3	1.	18.	36.	54.3	10.7	27.8	. .	26 53.16	18.83	1.28	V.	1	10.838	50 2.33	51.62	5.24	26 33.05	53 59.19
18	7	. .	. .	48.	. .	23.	. .	. .	30 5.41	18.83	1.22	V.	3	23.615	36 40.95	51.19	3.73	29 45.36	40 35.87
19	7	. .	. .	. .	. .	. .	13.	. .	32 38.27	18.82	1.18	VI.	3	33.020	26 50.91	50.84	2.64	32 18.27	30 44.39
20	6	. .	44.5	2.	. .	. .	. .	. .	35 19.18	18.82	1.09	III.	4	52.643	6 17.22	50.46	0.41	34 59.27	10 8.09
21	7	. .	. .	. .	52.	. .	26.3	. .	35 51.76	18.82	1.09	IV.	4	52.564	6 22.24	50.38	0.41	35 31.85	10 13.03
22	7	. .	. .	. .	37.5	. .	12.	. .	37 37.33	18.81	1.10	V.	4	50.740	8 16.41	50.13	0.63	37 17.42	12 7.17
23	7	17.	34.	52.	. .	. .	. .	. .	40 8.98	18.81	1.16	III	4	40.045	19 27.28	49.80	1.85	39 49.01	23 18.93
24	8	. .	10.	. .	. .	. .	. .	. .	41 44.87	18.81	1.19	II.	3	35.890	34 16.95	49.57	2.79	41 24.87	38 9.31
25	6.7	. .	. .	. .	5.	22.	. .	. .	42 4.32	18.80	1.26	IV.	3	21.340	39 3.58	49.52	4.00	41 44.26	42 57.10
26	7.8	. .	. .	. .	. .	. .	37.5	. .	42 22.62	18.80	1.28	VI.	2	18.920	41 36.07	49.52	4.28	42 2.54	45 29.87
27	8	. .	22.	. .	. .	. .	. .	. .	44 56.80	18.80	1.16	II.	4	42.080	17 19.46	49.09	1.60	44 36.84	21 10.15
28	7	. .	. .	. .	27.	. .	. .	. .	16 45 26.58	−18.80	−1.16	IV.	4	44.177	−15 8.18	−49.02	−1.35	16 45 6.62	−27 18 58.55

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 118	June 14,	16 0	*66 24 62.0	65.5	62.3	72.5	38.0	64.8	60.85	29.804	68.0	59.0	69.0	69.0	72.5
		17 24	. .	. .	. .	. .	. .	. .	. .	29.804	67.0	57.0			
		18 0	60.2	67.0	62.5	72.3	40.0	63.0	60.83						
		18 10	. .	. .	. .	. .	. .	. .	. .	29.798	66.0	56.0			
		19 14	. .	. .	. .	. .	. .	. .	. .	29.796	65.0	55.0			
		19 59	. .	. .	. .	. .	. .	. .	. .	29.790	64.0	53.5			
		20 58	. .	. .	. .	. .	. .	. .	. .	29.782	64.0	56.0			

REMARKS.

(117) 127. a $1^s.4$ in error by Arg. Z. 223, 46, and Mural Circle, 1846, Aug. 13.

(118) 8. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.

(118) 24. Micrometer reading assumed as $25^r.890$, not $35^r.890$.

(118) 26. Transit over T. VI assumed as $57^s.5$, not $37^s.5$, to agree with Mural Circle, 1846, July 7, and Arg. Z. 214, 46.

*This reading has been assumed as too small by 1°, the intervals of the transit threads affording sufficient evidence of the fact. The reading 66° 25′ is adopted, and the correction made in all the subsidiary computations. [Observing book has 66° 24′.]

ZONE 118. JUNE 14. P. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
29	6.7	. .	. .	. .	. .	6.	23.	. .	16 45 48.43	−18.80	−1.21	V.	3	33.803	−26 1.60	−48.98	−2.54	16 45 28.42	−27 29 53.12
30	7	. .	. .	. .	14.5	. .	. .	. .	47 13.47	18.79	1.33	IV.	1	13.465	47 17.50	48.77	4.93	46 53.35	51 11.20
31	6	. .	. .	. .	54.	. .	. .	. .	48 53.52	18.79	1.18	IV.	4	41.170	18 16.78	48.53	1.71	48 33.55	22 7.02
32	7	. .	. .	. .	. .	. .	53.	. .	50 18.23	18.79	1.25	VI.	3	28.580	31 29.53	48.33	3.15	49 58.19	35 21.01
33	7	. .	. .	. .	. .	. .	41.	. .	51 6.09	18.79	1.33	VI.	2	15.230	45 27.85	48.21	4.73	50 45.97	49 20.79
34	6	. .	. .	. .	. .	11.	. .	. .	52 53.52	18.78	1.30	V.	2	21.545	38 51.66	47.95	3.98	52 33.44	42 43.59
35	8	. .	. .	. .	. .	. .	3.	. .	55 45.66	18.78	1.18	VI.	4	46.310	12 54.16	47.56	1.12	55 25.70	16 42.84
36	8	. .	. .	. .	. .	. .	. .	44.	55 52.13	18.78	1.15	VII.	4	52.770	6 8.50	47.50	0.39	55 32.20	9 56.39
37	7	. .	58.5	. .	34.4	. .	. .	. .	58 33.58	18.77	1.27	IV.	3	32.260	27 38.39	47.10	2.73	58 13.54	31 28.22
38	8	. .	. .	. .	. .	. .	. .	30.	16 58 37.87	18.77	1.27	VII.	3	33.940	25 53.12	47.10	2.53	58 17.83	29 42.75
39	7	. .	. .	. .	. .	17.5	. .	. .	17 0 0.02	18.77	1.34	V.	3	22.628	37 42.89	46.89	3.87	16 59 39.91	41 33.65
40	7	. .	. .	. .	. .	23.	. .	. .	1 5.56	18.77	1.29	V.	3	29.423	30 36.64	46.72	3.07	17 0 45.50	34 26.43
41	6	. .	46.5	4.3	22.5	. .	. .	. .	3 21.60	18.76	1.30	IV.	3	29.597	30 25.35	46.39	3.05	3 1.54	34 14.79
42	6.7	. .	23.2	40.6	58.7	. .	. .	. .	4 58.00	18.76	1.31	IV.	3	27.185	32 56.75	46.13	3.32	4 37.93	36 46.20
43	7.8	. .	42.	. .	18.5	. .	. .	. .	6 17.33	18.76	1.36	IV.	2	22.040	43 33.04	45.93	4.50	5 57.21	47 24.47
44	7	. .	. .	. .	. .	45.	. .	. .	7 27.62	18.76	1.25	V.	4	40.160	19 20.07	45.75	1.81	7 7.61	23 7.63
45	6	. .	. .	. .	24.5	41.3	. .	. .	8 23.80	18.75	1.33	IV.	3	28.153	31 56.01	45.61	3.20	8 3.72	35 44.82
46	8	. .	. .	. .	. .	. .	24.	. .	8 49.22	18.75	1.33	VI.	3	27.890	32 12.70	45.54	3.23	8 29.14	36 1.47
47	7.8	11.	28.5	46.	. .	. .	. .	. .	11 3.26	18.75	1.35	III.	3	27.315	32 48.28	45.20	3.30	10 43.16	36 36.78
48	8	. .	. .	. .	. .	. .	41.	. .	11 6.03	18.75	1.44	VI.	1	8.860	52 6.62	45.19	5.51	10 45.84	55 57.32
49	8	. .	36.	54.	. .	. .	. .	. .	13 11.22	18.75	1.42	III.	2	13.820	46 55.96	44.86	4.91	12 51.05	50 45.73
50	7.8	. .	. .	. .	. .	59.	. .	. .	13 41.57	18.74	1.32	V.	3	32.340	27 33.63	44.79	2.72	13 21.51	31 21.14
51	3	. .	. .	. .	. .	. .	50.7	8.	14 15.59	18.74	1.47	VI.	1	5.495	55 38.05	44.69	5.91	13 55.38	59 28.65
52	6	9.7	27.	44.	2.3	. .	. .	53.7	17 1.61	18.74	1.32	IV.	3	36.075	23 38.95	44.27	2.29	16 41.35	27 25.51
53	7	. .	. .	. .	15.	. .	. .	. .	17 24 14.54	−18.73	−1.31	IV.	4	41.970	−17 26.49	−43.13	−1.59	17 23 54.50	−27 21 11.21

ZONE 119. JUNE 14. P. $D_0 = -27° 3' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	. .	30.	18 10 37.82	−18.64	−1.30	VII.	3	30.093	−29 54.54	−35.38	−2.99	18 10 17.88	−27 33 32.91
2	7	. .	. .	. .	. .	. .	. .	8.	11 15.89	18.64	1.30	VII.	3	35.597	24 9.30	35.26	2.34	10 55.95	27 46.90
3	7	29.	46.	3.5	. .	38.5	. .	. .	14 20.95	18.64	1.30	IV.	3	29.463	30 33.88	34.74	3.06	14 1.01	34 11.68
4	8	. .	57.3	. .	. .	. .	. .	. .	16 32.19	18.63	1.29	II.	3	34.090	25 42.59	34.36	2.52	16 12.27	29 19.47
5	7	. .	. .	. .	40.3	. .	. .	. .	16 39.65	18.63	1.29	IV.	3	32.475	27 24.90	34.32	2.71	16 19.73	31 1.93
6	8	. .	. .	. .	. .	. .	29.5	. .	16 54.83	18.63	1.29	VI.	3	38.700	20 54.59	34.29	1.97	16 34.91	24 30.85
7	8	. .	. .	. .	. .	7.5	. .	. .	19 50.13	18.63	1.29	V.	4	42.060	17 20.85	33.77	1.57	19 30.21	20 56.19
8	7	20.	37.	54.5	. .	. .	. .	. .	23 11.79	18.62	1.29	III.	4	43.453	15 53.66	33.19	1.41	22 51.88	19 28.26
9	8.9	. .	. .	. .	35.	. .	. .	. .	23 34.61	18.62	1.29	IV.	4	45.427	13 49.91	33.13	1.19	23 14.70	17 24.23
10	8	. .	. .	. .	. .	49.5	. .	. .	24 32.05	18.62	1.29	V.	3	28.160	31 55.76	32.97	3.21	24 12.14	35 31.94
11	8	. .	. .	. .	33.	. .	. .	. .	25 32.17	18.62	1.28	IV.	3	23.385	36 55.26	32.79	3.79	25 12.27	40 31.84
12	7	. .	. .	12.	28.	. .	. .	. .	26 28.34	18.62	1.28	IV.	3	36.114	23 36.50	32.62	2.28	26 8.44	27 11.40
13	8	. .	. .	. .	. .	22.	. .	. .	27 4.65	18.62	1.28	V.	4	44.670	14 37.08	32.53	1.30	26 44.75	18 10.91
14	7.8	37.	. .	12.	. .	. .	. .	. .	31 29.19	18.61	1.28	III.	3	23.637	36 38.94	31.75	3.76	31 9.30	40 14.45
15	7	. .	. .	25.5	44.	. .	. .	. .	32 43.03	18.61	1.28	IV.	3	28.970	31 4.62	31.54	3.11	32 23.14	34 39.27
16	8	. .	. .	. .	. .	. .	. .	35.3	32 43.45	18.61	1.28	VII.	4	54.160	4 41.47	31.54	0.16	32 23.56	8 13.17
17	8	. .	. .	. .	. .	. .	. .	41.5	33 49.21	18.61	1.28	VII.	2	22.013	43 35.48	31.34	4.52	33 29.32	47 11.34
18	3.4	. .	2.	19.7	. .	. .	. .	. .	36 36.77	18.60	1.27	III.	4	54.030	4 50.25	30.86	0.18	36 16.90	8 21.29
19	6.7	. .	. .	. .	59.5	16.5	. .	. .	36 58.86	18.60	1.27	VI.	3	24.810	35 25.96	30.79	3.61	36 38.99	39 0.36
20	7.8	. .	. .	. .	. .	. .	. .	5.	18 37 12.86	−18.60	−1.27	VII.	3	33.760	−26 4.42	−30.75	−2.45	18 36 52.99	−27 29 37.62

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ' ''	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ' ''						''	in.	°	°	°	°	°

REMARKS.

(118) 35. Transit over T. V assumed as recorded over T. VI, to agree with Mural Z., 1846, July 7, and Arg. Z.

(118) 43. Micrometer reading assumed as $17^r.040$ instead of $22^r.040$.

(119) 17. Micrometer reading assumed as $17^r.013$ instead of $22^r.013$.

ZONE 119. JUNE 14. P. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	7	. .	. .	. .	52.5	. .	. .	. .	18 38 52.16	−18.60	−1.27	IV.	4	48.195	−10 56.27	−30.46	−0.86	18 38 32.29	−27 14 27.59
22	8	. .	. .	. .	. .	27.	. .	. .	40 9.66	18.60	1.27	V.	4	46.685	12 30.71	30.24	1.04	39 49.79	16 1.99
23	7	. .	. .	. .	. .	. .	9.	. .	40 34.39	18.60	1.27	VI.	4	45.520	13 43.64	30.16	1.18	40 14.52	17 14.98
24	7	. .	49.5	6.3	24.5	. .	. .	. .	42 23.96	18.59	1.27	IV.	4	42.957	16 24.58	29.84	1.46	42 4.10	19 55.88
25	7	. .	28.	45.5	. .	. .	. .	. .	44 3.02	18.59	1.27	III.	1	8.620	52 21.18	29.55	5.58	43 43.16	55 56.31
26	9	. .	. .	. .	. .	. .	54.	. .	44 19.40	18.59	1.27	VI.	4	45.550	13 41.76	29.50	1.17	43 59.54	17 12.43
27	9	. .	. .	. .	. .	. .	53.5	. .	45 18.70	18.59	1.27	VI.	3	25.905	34 17.24	29.33	3.48	44 58.84	37 50.05
28	8.9	. .	. .	7.	. .	. .	. .	. .	47 24.30	18.59	1.26	III.	3	22.320	38 1.71	28.96	3.91	47 4.45	41 34.58
29	7	. .	. .	8.5	26.5	. .	. .	. .	48 25.75	18.59	1.26	IV.	3	25.070	35 9.39	28.78	3.58	48 5.90	38 41.75
30	8	. .	. .	. .	. .	. .	. .	19.5	48 27.56	18.59	1.26	VII.	4	47.890	11 14.45	28.78	0.89	48 7.71	14 44.12
31	8	. .	. .	. .	17.5	. .	. .	. .	50 17.01	18.58	1.26	IV.	4	40.560	18 55.11	28.45	1.76	49 57.17	22 25.32
32	8	. .	. .	11.5	. .	. .	. .	. .	51 28.84	18.58	1.26	III.	2	13.535	47 14.04	28.24	4.98	51 9.00	50 47.26
33	8	. .	. .	. .	13.5	. .	. .	. .	52 12.58	18.58	1.26	IV.	2	18.782	41 44.73	28.12	4.34	51 52.74	45 17.19
34	8	. .	. .	41.	59.	. .	. .	. .	53 58.29	18.58	1.26	IV.	3	29.707	30 18.38	27.80	3.03	53 38.45	33 49.21
35	8.9	. .	. .	20.	. .	. .	. .	. .	55 37.22	18.57	1.26	III.	4	42.140	17 15.95	27.52	1.57	55 17.39	20 45.04
36	8	. .	. .	. .	. .	17.5	. .	. .	56 0.01	18.57	1.26	V.	2	19.807	40 40.47	27.45	4.22	55 40.18	44 12.14
37	7	. .	. .	. .	0.	18.5	. .	. .	57 17.56	18.57	1.25	IV.	3	32.877	26 59.45	27.22	2.66	56 57.74	30 29.33
38	3	. .	. .	. .	55.3	. .	29.	. .	18 57 54.14	18.57	1.25	IV.	1	11.363	49 29.44	27.12	5.24	57 34.32	52 51.80
39	9	. .	28.	. .	. .	. .	. .	. .	19 0 2.87	18.57	1.25	II.	3	35.760	23 57.70	26.75	2.31	18 59 43.05	27 26.76
40	7	. .	8.5	2 .3	44.	1.	. .	. .	0 43.50	18.57	1.25	IV.	4	42.050	17 21.53	26.63	1.57	19 0 23.68	20 49.73
41	8	. .	. .	50.3	. .	. .	. .	. .	2 7.51	18.56	1.25	III.	4	45.430	13 49.66	26.38	1.17	1 47.70	17 17.21
42	7.8	. .	. .	. .	33.	49.7	. .	. .	2 32.46	18.56	1.25	V.	4	43.840	15 29.08	26.31	1.35	2 12.65	18 56.74
43	8	. .	. .	. .	59.5	. .	. .	. .	3 59.16	18.56	1.25	IV.	4	47.883	11 15.64	26.06	0.88	3 39.35	14 42.58
44	7	. .	. .	. .	57.7	. .	. .	. .	4 57.50	18.56	1.25	IV.	4	54.987	3 50.24	25.88	0.04	4 37.69	7 16.16
45	8	. .	. .	. .	. .	46.	. .	. .	5 28.53	18.56	1.25	V.	3	25.920	34 16.17	25.80	3.49	5 8.72	37 45.46
46	7.8	. .	. .	. .	. .	. .	. .	31.	5 38.81	18.56	1.25	VII.	3	29.265	30 46.61	25.77	3.08	5 19.00	34 15.46
47	9	. .	. .	31.5	. .	. .	. .	. .	7 48.73	18.56	1.24	III.	4	39.920	19 35.06	25.39	1.81	7 28.93	23 2.26
48	8	. .	. .	. .	41.5	. .	. .	. .	8 40.85	18.56	1.24	IV.	3	32.527	27 21.58	25.24	2.70	8 21.05	30 49.52
49	8	36.	53.	10.5	. .	. .	. .	. .	14 27.95	18.55	1.24	III.	3	24.910	35 18.92	24.23	3.61	14 8.16	38 46.76
50	8.9	. .	. .	17.3	. .	. .	. .	. .	15 34.51	18.55	1.24	III.	4	44.825	14 27.36	24.04	1.24	15 14.72	17 52.64
51	8	59.5	16.7	. .	. .	. .	. .	. .	20 51.70	18.54	1.24	II.	2	19.500	40 59.36	23.13	4.26	20 31.92	44 26.75
52	8.9	. .	. .	46.	. .	. .	. .	. .	21 3.29	18.54	1.23	III.	2	24.670	35 35.13	23.09	3.64	20 43.52	39 1.86
53	5.6	. .	. .	. .	. .	. .	29.	. .	20 54.39	18.54	1.23	VI.	4	45.415	13 50.29	23.12	1.17	20 34.62	17 14.58
54	8.9	13.5	31.	48.5	. .	. .	. .	. .	24 5.68	18.54	1.23	III.	3	37.210	22 27.43	22.57	2.14	23 45.91	25 52.14
55	9	. .	25.	. .	. .	. .	. .	. .	24 59.89	18.54	1.23	II.	3	34.483	25 17.99	22.41	2.46	24 40.12	28 42.86
56	8	. .	. .	11.	. .	. .	. .	. .	25 28.25	18.53	1.23	III.	3	34.965	24 48.07	22.33	2.40	25 8.49	28 12.80
57	9	. .	. .	. .	. .	53.3	. .	. .	25 35.89	18.53	1.23	V.	3	34.525	25 16.49	22.31	2.46	25 16.13	28 41.26
58	9	. .	. .	. .	. .	. .	45.5	. .	26 10.67	18.53	1.23	VI.	2	22.785	37 33.53	22.21	3.87	25 50.91	40 59.61
59	8	. .	. .	42.3	. .	. .	. .	. .	27 59.63	18.53	1.23	III.	2	14.580	46 8.46	21.90	4.86	27 39.87	49 35.22
60	8.9	34.	51.	. .	. .	. .	. .	. .	29 26.06	18.53	1.23	II.	2	22.365	37 59.64	21.65	3.92	29 6.30	41 25.21
61	8	. .	24.3	41.7	. .	. .	. .	. .	29 59.17	18.53	1.23	III.	2	21.590	38 48.46	21.56	4.01	29 39.41	42 14.03
62	8	. .	26.3	44.	. .	. .	. .	. .	31 1.39	18.53	1.22	III.	1	11.933	48 53.09	21.38	5.20	30 41.64	52 19.67
63	8	. .	. .	. .	35.5	. .	9.3	. .	31 34.60	18.53	1.22	IV.	3	25.483	34 43.54	21.29	3.54	31 14.85	38 8.37
64	8	. .	54.	. .	29.	. .	. .	. .	35 28.68	18.52	1.22	II.	4	44.940	14 20.02	20.62	1.23	35 8.94	17 41.87
65	8	. .	. .	. .	19.7	. .	. .	. .	36 18.78	18.52	1.22	IV.	2	18.880	41 38.59	20.49	4.34	35 59.04	45 3.42
66	7.8	. .	. .	. .	24.5	41.	. .	. .	37 23.63	18.52	1.22	IV.	3	26.045	34 8.15	20.30	3.48	37 3.89	37 31.93
67	8.9	. .	. .	. .	. .	. .	. .	29.	37 36.96	18.52	1.22	VII.	4	41.180	18 15.47	20.27	1.67	37 17.22	21 37.41
68	8	. .	. .	. .	. .	. .	. .	21.	38 29.17	18.52	1.22	VII.	4	56.120	7 52.28	20.11	0.50	38 9.43	11 12.89
69	8.9	. .	. .	. .	. .	. .	. .	24.5	19 39 32.39	−18.52	−1.22	VII.	3	35.703	−24 2.59	−19.94	−2.32	19 39 12.65	−27 27 24.85

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(119) 37. Transits over T.'s III and IV assumed as recorded over T.'s IV and V.

(119) 68. Micrometer reading assumed as 51ʳ.120 instead of 56ʳ.120.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 119. JUNE 14. P. $D_{o} = -27° \; 3' \; 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	9	. .	. .	. .	36.5	. .	. .	. .	19 41 35.68	−18.52	−1.22	IV.	3	24.205	−36 3.73	−19.59	−3.70	19 41 15.94	−27 39 27.02
71	8	. .	. .	. .	. .	9.	. .	. .	41 51.51	18.51	1.22	V.	3	20.410	40 2.18	19.55	4.15	41 31.78	43 25.88
72	7	. .	. .	. .	. .	. .	49.5	. .	42 14.57	18.51	1.22	VI.	2	13.415	47 21.77	19.49	5.02	41 54.84	50 46.28
73	7	. .	. .	. .	. .	. .	. .	38.5	42 46.39	18.51	1.22	VII.	3	35.635	24 6.86	19.39	2.33	42 26.66	27 28.58
74	9	. .	. .	. .	. .	. .	. .	43.	43 51.08	18.51	1.22	VII.	4	49.330	9 44.40	19.22	0.71	43 31.35	13 4.33
75	7	. .	. .	57.	15.	. .	. .	. .	46 14.31	18.51	1.21	IV.	3	33.430	26 25.00	18.81	2.59	45 54.59	29 46.40
76	4.5	11.7	. .	46.7	4.5	21.3	. .	. .	48 3.84	18.51	1.21	IV.	3	29.626	30 23.53	18.50	3.05	47 44.12	33 45.08
77	7	. .	. .	. .	1.5	. .	. .	. .	52 0.76	18.50	1.21	IV.	3	28.260	31 49.35	17.83	3.21	51 41.05	35 10.39
78	7	30.3	48.3	5.	22.5	39.3	. .	. .	56 22.29	18.50	1.20	IV.	4	48.460	10 39.64	17.08	0.80	56 2.59	13 57.52
79	7.8	. .	. .	46.7	5.	. .	. .	. .	58 4.09	18.50	1.20	IV.	3	24.605	35 38.58	16.80	3.65	57 44.39	38 59.03
80	8	. .	0.5	18.3	36.3	. .	. .	. .	19 59 35.55	18.50	1.20	IV.	3	36.873	22 48.77	16.54	2.18	19 59 15.85	26 7.49
81	8	. .	. .	31.	48.7	5.5	. .	. .	20 4 48.13	18.49	1.20	IV.	3	33.225	26 37.80	15.63	2.62	20 4 28.44	29 56.05
82	4.5	. .	. .	57.5	15.3	32.3	. .	. .	6 14.78	18.49	1.19	IV.	3	34.565	25 13.73	15.38	2.45	5 55.10	28 31.56
83	7	7.3	. .	42.0	0.	. .	. .	. .	10 59.30	18.48	1.19	IV.	3	31.043	28 54.56	14.71	2.88	9 39.63	32 12.15
84	8.9	6.	22.3	40.3	. .	. .	. .	. .	10 57.73	18.48	1.19	III.	2	15.710	44 57.42	14.37	4.75	11 38.06	48 16.54
85	7	56.3	13.7	31.	48.5	. .	. .	. .	14 48.22	18.48	1.19	IV.	4	49.670	9 23.64	13.86	0.64	14 28.55	12 38.14
86	8	. .	. .	22.	. .	. .	. .	. .	18 39.25	18.48	1.18	III.	3	36.137	23 34.68	13.18	2.27	18 19.59	26 50.13
87	8	. .	. .	21.3	. .	. .	. .	. .	19 38.62	18.48	1.18	III.	2	17.695	42 52.84	12.99	4.51	19 18.96	46 10.34
88	8	. .	. .	36.	54.3	. .	. .	. .	20 53.32	18.47	1.18	IV.	2	15.535	45 8.71	12.76	4.77	20 33.67	48 26.24
89	7	. .	. .	43.7	1.7	18.5	. .	. .	26 0.94	18.47	1.17	IV.	2	19.413	41 5.39	11.86	4.29	25 41.30	44 21.54
90	7	. .	. .	. .	11.5	28.3	45.5	. .	27 10.98	18.47	1.17	IV.	4	45.260	14 0.33	11.65	1.17	26 51.34	17 13.15
91	7	3.3	20.3	38.	55.	12.5	. .	. .	31 55.03	18.47	1.17	IV.	4	51.910	7 3.12	10.81	0.37	31 35.39	10 14.30
92	7	54.	10.7	28.7	. .	. .	. .	. .	35 45.97	18.46	1.17	III.	2	18.820	41 42.16	10.13	4.37	35 26.34	44 56.66
93	9	. .	. .	. .	. .	4.5	. .	. .	35 47.05	18.46	1.17	V.	3	28.090	32 0.15	10.13	3.23	35 27.42	35 13.51
94	7	. .	. .	. .	. .	49.5	6.7	. .	36 31.90	18.46	1.16	V.	2	16.670	43 57.42	9.98	4.63	36 12.28	47 12.03
95	7.8	. .	. .	42.	1.	. .	. .	. .	37 59.58	18.46	1.16	IV.	2	17.297	43 18.19	9.73	4.56	37 39.96	46 32.48
96	7.8	. .	. .	. .	. .	. .	39.	56.7	38 4.26	18.46	1.16	VI.	2	20.050	40 25.22	9.72	4.22	37 44.64	43 39.16
97	8	. .	. .	. .	. .	. .	29.	. .	39 54.25	18.46	1.16	VI.	3	30.753	29 13.07	9.39	2.91	39 34.63	32 25.37
98	8	. .	. .	. .	. .	. .	. .	5.	40 12.82	18.46	1.16	VII.	3	29.845	30 9.98	9.34	3.02	39 53.20	33 22.34
99	8	. .	. .	. .	. .	. .	. .	38.	40 45.87	18.46	1.16	VII.	3	34.120	25 41.96	9.24	2.51	40 26.25	28 53.71
100	7	. .	19.	37.	. .	. .	. .	. .	42 54.21	18.46	1.16	III.	2	15.895	44 45.74	8.85	4.73	42 34.59	47 59.32
101	4	. .	. .	. .	11.7	28.5	46.	. .	43 11.15	18.46	1.16	IV.	3	34.435	25 21.94	8.80	2.47	42 51.53	28 33.21
102	8	. .	. .	. .	. .	40.5	. .	15.3	44 23.00	18.46	1 16	V.	2	20.003	40 28.23	8.59	4.22	44 3.38	43 41.04
103	9	3.5	. .	. .	56.	. .	. .	. .	47 55.38	18.46	1.15	IV.	3	25.550	34 39.33	7.96	3.53	47 35.77	37 50.82
104	8	4.	21.	39.	55.5	. .	. .	. .	50 55.76	18.45	1.15	IV.	3	27.765	32 20.16	7.43	2.27	50 36.16	35 29.86
105	6	18.	35.3	52.8	10.5	27.5	. .	. .	53 10.04	18.45	1.15	IV.	3	35.105	24 39.80	7.02	2.39	52 50.44	27 49.21
106	8	. .	20.	. .	55.	. .	. .	. .	55 54.67	18.45	1.14	IV.	4	42.950	16 25.02	6.54	1.44	55 35.08	19 33.00
107	7	57.	13.	30.5	. .	. .	22.5	. .	20 58 48.20	−18.45	−1.14	IV.	1	10.790	−50 5.15	− 6.02	−5.37	20 58 28.61	−27 53 16.54

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(119) 83. Minutes assumed as 9 instead of 10.

(119) 84. Minutes assumed as 11 instead of 10.

(119) 95. The observed time of transit over T. IV is assumed to have been at $0^{s}.7$, not 7^{s}.

[Observing book has 1^{s}.]

ZONE 120. JUNE 17. P. $D_0 = -30°\ 10'\ 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	29.7	47.5	5.5	23.3	41.2	. .	. .	15 3 23.18	−20.75	−0.75	IV.	4	52.087	− 6 52.15	−59.99	−0.84	15 3 1.68	−30 18 42.98
2	9	. .	. .	. .	. .	. .	. .	37.	3 43.60	20.75	0.76	VII.	4	55.225	3 34.63	59.97	0.39	3 22.09	15 24.99
3	6	. .	. .	31.	50.	16.3	. .	42.5	5 48.64	20.75	0.69	IV.	2	15.308	45 23.01	59.81	6.18	5 27.20	57 19.00
4	8.9	56.	13.2	31.3	. .	. .	. .	. .	8 49.43	20.74	0.70	III.	2	18.330	42 13.17	59.57	5.72	8 27.99	54 8.46
5	6.7	. .	16.3	34.3	52.5	10.	. .	. .	9 52.07	20.74	0.71	IV.	3	32.413	27 28.79	59.50	3.64	9 30.62	39 21.93
6	8.9	. .	. .	. .	24.	. .	. .	. .	11 23.77	20.73	0.76	IV.	4	53.425	5 28.37	59.38	0.65	11 2.28	17 18.40
7	8	. .	. .	. .	. .	. .	48.	. .	13 11.98	20.73	0.69	VI.	2	13.215	47 34.25	59.23	6.48	12 50.56	59 29.96
8	7	41.2	58.7	16.7	35.	53.	. .	. .	17 34.67	20.72	0.71	IV.	3	24.908	35 19.43	58.87	4.74	17 13.24	47 13.04
9	7	58.7	16.2	34.7	. .	. .	. .	. .	19 52.49	20.71	0.69	III.	2	15.593	45 4.82	58.68	6.13	19 31.09	56 59.63
10	9	. .	. .	. .	. .	. .	26.	. .	19 50.12	20.71	0.71	VI.	3	25.893	34 17.94	58.69	4.61	19 28.70	46 11.24
11	8	. .	50.5	8.7	. .	44.3	. .	. .	23 26.43	20.71	0.72	V.	3	34.070	25 44.97	58.37	3.39	23 5.00	37 36.73
12	8	. .	. .	44.3	1.5	. .	. .	55.5	25 1.65	20.70	0.73	IV.	4	40.943	18 30.90	58.23	2.40	24 40.22	30 21.53
13	8	37.	54.3	12.3	. .	. .	. .	. .	28 30.54	20.70	0.63	III.	2	11.293	49 34.83	57.92	6.77	28 9.16	51 29.52
14	7	. .	. .	. .	57.	14.	32.	. .	28 56.12	20.70	0.71	IV.	3	26.874	33 16.07	57.88	4.46	28 34.71	45 8.41
15	8	. .	. .	45.	. .	. .	. .	. .	31 2.85	20.69	0.70	III.	2	18.883	41 38.21	57.69	5.64	30 41.46	53 31.54
16	7	. .	. .	. .	20.3	37.5	. .	. .	31 19.55	20.69	0.70	IV.	3	28.708	31 21.06	57.67	4.19	30 58.16	43 12.92
17	8.9	. .	. .	. .	30.3	47.	. .	. .	32 29.31	20.69	0.72	IV.	3	29.635	30 22.97	57.56	4.06	32 7.90	42 14.59
18	9	. .	27.	. .	4.	. .	. .	. .	35 3.18	20.68	0.73	IV.	3	37.023	22 39.42	57.31	2.97	34 41.77	30 34 29.70
19	6	. .	. .	. .	. .	. .	. .	59.	35 4.84	20.68	0.68	VII.	1	5.850	55 15.45	57.31	7.59	34 43.48	31 7 10.35
20	8	. .	. .	28.3	. .	4.	. .	. .	37 46.09	20.67	0.75	V.	4	45.960	13 16.11	57.04	1.68	37 24.67	30 25 4.83
21	8	37.5	55.3	13.3	. .	. .	. .	. .	40 31.13	20.67	0.74	III.	3	35.088	24 40.49	56.79	3.26	40 9.72	36 30.54
22	7.8	. .	. .	. .	. .	. .	11.	. .	42 35.45	20.66	0.77	VI.	4	55.920	2 51.30	56.58	0.25	42 14.02	14 38.13
23	7	. .	. .	. .	14.5	32.	. .	. .	44 14.19	20.66	0.76	IV.	4	51.312	7 40.86	56.42	0.95	43 52.77	19 28.23
24	7	36.	53.6	11.7	30.	47.3	. .	. .	46 29.47	20.66	0.73	IV.	3	33.364	26 29.14	56.18	3.50	46 8.08	38 18.82
25	9	. .	. .	. .	0.	. .	. .	. .	48 59.51	20.65	0.74	IV.	4	40.765	18 42.07	55.94	2.44	47 38.12	30 30.45
26	8	. .	. .	. .	. .	. .	54.	. .	48 18.38	20.65	0.76	VI.	4	50.135	8 54.18	56.00	1.11	47 56.97	20 41.29
27	8	. .	. .	. .	40.7	58.3	. .	. .	49 40.47	20.65	0.77	VI.	4	53.430	5 27.68	55.86	0.65	49 19.05	17 14.19
28	7	. .	. .	. .	. .	8.5	26.3	. .	50 50.48	20.65	0.72	V.	3	27.863	32 14.27	55.74	4.31	50 29.11	44 4.32
29	7.8	. .	. .	. .	51.3	. .	26.5	. .	53 50.78	20.64	0.74	IV.	4	40.220	19 16.44	55.42	2.52	53 29.40	30 31 4.38
30	6.7	26.	43.3	1.3	. .	. .	. .	. .	56 19.54	20.63	0.69	IV.	1	10.360	50 32.40	55.15	6.91	55 58.22	31 2 24.46
31	9	. .	. .	. .	. .	. .	. .	2.	56 7.90	20.63	0.69	VII.	1	10.343	50 33.65	55.17	6.91	55 46.58	31 2 25.73
32	9	. .	. .	31.	. .	. .	. .	. .	15 58 48.71	20.63	0.76	III.	4	52.384	5 30.83	54.88	0.80	15 58 27.32	30 17 16.51
33	7	30.	47.5	5.7	24.3	41.3	. .	. .	16 0 23.51	20.62	0.72	IV.	3	32.830	27 2.39	54.71	3.58	16 0 2.17	38 50.68
34	8	. .	. .	4.	21.5	. .	. .	. .	2 21.46	20.62	0.76	IV.	4	50.337	8 42.00	54.48	1.05	2 0.08	20 27.53
35	7	. .	. .	. .	59.5	. .	. .	. .	6 59.32	20.62	0.77	IV.	4	56.135	2 38.33	53.94	0.23	6 37.93	14 22.50
36	9	. .	. .	. .	. .	. .	15.5	. .	7 39.78	20.61	0.74	VI.	3	41.090	18 24.69	53.86	2.37	7 18.43	30 10.92
37	7.8	31.	48.3	6.3	. .	. .	. .	. .	10 24.25	20.60	0.74	III.	3	39.393	20 10.57	53.54	2.62	10 2.91	31 56.73
38	6.7	32.	49.3	7.3	. .	44.3	1.3	. .	10 25.54	20.60	0.74	V.	3	39.140	20 26.93	53.54	2.66	10 4.20	32 13.13
39	8	19.5	37.	. .	. .	. .	. .	. .	13 13.21	20.60	0.70	II.	2	18.940	41 34.25	53.19	5.64	12 51.91	53 23.08
40	7.8	. .	. .	. .	20.	37.3	. .	. .	13 19.21	20.60	0.71	IV.	3	22.840	37 29.20	53.17	5.07	12 57.90	49 17.44
41	9	. .	. .	. .	. .	. .	. .	39.	13 45.48	20.59	0.75	VII.	4	46.695	12 29.39	53.13	1.57	13 24.14	30 24 14.09
42	7	. .	. .	37.3	56.5	. .	. .	. .	15 55.27	20.59	0.69	IV.	1	8.635	52 20.55	52.86	7.21	15 33.99	31 4 10.62
43	8	. .	. .	34.	52.3	9.3	. .	. .	16 51.49	20.59	0.70	IV.	2	19.370	41 8.08	52.75	5.58	16 30.20	30 52 56.41
44	9	59.	. .	33.	. .	. .	. .	. .	18 51.71	20.58	0.72	III.	3	30.703	29 15.52	52.50	3.90	18 30.41	41 1.92
45	8	. .	. .	. .	13.5	. .	48.7	. .	19 12.75	20.58	0.71	IV.	3	25.055	35 10.33	52.45	4.74	18 51.46	46 57.52
46	8.9	. .	. .	. .	49.	. .	. .	. .	20 48.30	20.58	0.72	IV.	3	31.003	28 57.07	52.25	3.85	20 27.00	40 43.17
47	9	. .	20.	. .	. .	. .	. .	. .	22 56.16	20.57	0.70	II.	2	16.830	43 46.68	51.99	5.97	22 34.89	55 34.64
48	9	. .	. .	24.	. .	. .	. .	. .	23 41.77	20.57	0.73	III.	3	38.410	21 12.21	51.87	2.76	23 20.47	32 56.84
49	8	. .	. .	. .	31.	. .	. .	. .	16 24 29.97	−20.57	−0.69	IV.	2	14.670	−46 2.88	−51.77	−6.29	16 24 8.71	−30 57 50.94

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 120	June 17,	15 0	69 32 30.3	32.5	29.4	39.6	7.7	31.9	28.57[a]	30.208	71.5	64.5	71.0	70.0	70.0
		15 35	. .	. .	. .	. .	. .	. .	. .	30.210	70.2	63.0			
		16 0	. .	. .	. .	. .	. .	. .	. .	30.210	69.0	61.5			
		16 10	. .	. .	. .	. .	. .	. .	. .	30.214	69.0	61.4			
		16 57	. .	. .	. .	. .	. .	. .	. .	30.220	67.8	60.0			
		17 33	. .	. .	. .	. .	. .	. .	. .	30.230	67.0	59.3			
		18 0	. .	. .	. .	. .	. .	. .	. .	30.228	67.0	58.0			
		19 1	. .	. .	. .	. .	. .	. .	. .	30.230	65.5	58.2			
		19 47	. .	. .	. .	. .	. .	. .	. .	30.226	65.0	57.7			

REMARKS.

(120) 3. Time of transit over T. V assumed to have been at $6^s.3$ instead of $16^s.3$.

(120) 25. Minutes assumed as 47 instead of 48.

(120) 32. Micrometer reading assumed as $53^r.384$ instead of $52^r.384$.

[a] Corr. for runs $+0''.07$.

ZONE 120. JUNE 17. P. $D_0 = -30° 10' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	I I.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	18.	. .	. .	16 24 59.93	−20.57	−0.69	V.	2	14.786	−45 55.59	−51.71	−6.27	16 24 38.67	−30 57 43.57
51	8.9	. .	34.	52.	11.	. .	. .	. .	27 10.03	20.57	0.71	IV.	3	25.647	34 33.18	51.42	4.65	26 48.75	30 46 19.25
52	8	. .	. .	. .	. .	48.	. .	. .	29 29.90	20.56	0.69	V.	2	10.773	50 7.48	51.12	6.88	29 8.65	31 1 55.48
53	7.8	. .	56.7	14.7	33.	. .	. .	. .	31 32.51	20.56	0.75	IV.	4	39.375	20 9.49	50.86	2.62	31 11.20	30 31 52.97
54	7	. .	. .	38.	. .	. .	. .	. .	32 55.70	20.55	0.78	III.	4	56.410	2 21.15	50.68	0.18	32 34.37	30 14 2.01
55	7.8	. .	. .	37.7	. .	. .	. .	. .	33 55.59	20.55	0.69	III.	1	9.460	51 28.51	50.55	7.07	33 34.35	31 3 16.13
56	8	. .	. .	. .	22.3	. .	57.	. .	34 21.15	20.55	0.70	IV.	2	16.217	44 25.91	50.49	6.06	33 59.90	30 56 12.46
57	7.8	. .	. .	. .	. .	. .	34.3	. .	34 58.45	20.55	0.73	VI.	3	28.623	31 26.77	50.40	4.20	34 37.17	43 11.37
58	7	. .	. .	. .	8.7	. .	43.5	. .	36 7.98	20.54	0.75	IV.	4	39.820	19 41.34	50.25	2.56	35 46.69	31 24.15
59	8	. .	. .	28.	. .	. .	. .	. .	37 45.80	20.54	0.73	III.	3	28.725	31 19.62	50.03	4.18	37 24.53	43 3.83
60	7	17.3	35.	53.3	12.3	. .	. .	5.2	39 11.19	20.54	0.70	IV.	2	16.627	44 0.12	49.83	6.00	38 49.95	55 45.95
61	8.9	. .	. .	. .	. .	. .	. .	53.	39 59.38	20.54	0.75	VII.	4	40.565	18 53.98	49.73	2.45	39 38.09	30 36.16
62	7	. .	. .	42.	. .	17.3	. .	. .	41 59.59	20.54	0.76	IV.	4	46.407	12 48.45	49.46	1.61	41 38.29	24 29.52
63	8	. .	. .	56.	. .	. .	. .	. .	43 13.74	20.53	0.76	III.	4	44.830	14 27.05	49.28	1.84	42 52.45	26 8.17
64	8	20.	38.7	. .	. .	. .	. .	. .	45 14.00	20.53	0.76	II.	4	43.047	16 18.75	49.02	2.08	44 52.71	27 59.85
65	7	. .	. .	. .	24.	41.5	. .	. .	45 23.69	20.53	0.77	IV.	4	50.580	8 26.65	49.00	1.02	45 2.39	20 6.67
66	7	. .	. .	. .	. .	. .	8.3	. .	45 32.45	20.53	0.73	VI.	3	28.215	31 52.43	48.98	4.26	45 11.19	30 43 35.67
67	8	. .	. .	. .	. .	. .	. .	12.	46 17.87	20.52	0.69	VII.	1	7.890	53 7.40	48.87	7.32	45 56.66	31 4 53.59
68	7	. .	. .	. .	. .	. .	. .	56.	47 1.89	20.52	0.69	VII.	1	9.090	51 52.18	48.78	7.14	46 40.68	31 3 38.10
69	7.8	. .	44.3	3.7	22.	. .	. .	. .	49 21.04	20.52	0.74	IV.	3	35.050	24 43.18	48.46	3.27	48 59.78	30 36 24.91
70	9	. .	57.	. .	. .	. .	. .	. .	51 32.73	20.51	0.78	II.	4	53.760	5 6.86	48.16	0.58	51 11.44	16 45.60
71	8	. .	. .	. .	20.	. .	. .	. .	52 19.49	20.51	0.75	IV.	3	40.190	19 20.89	48.05	2.50	51 58.23	31 1.44
72	7	. .	. .	. .	. .	53.	10.5	28.7	52 34.96	20.51	0.75	V.	3	38.190	21 26.59	48.01	2.79	52 13.70	33 7.39
73	7.8	. .	. .	. .	. .	. .	. .	28.	53 34.09	20.50	0.71	VII.	2	21.920	38 27.49	47.87	5.20	53 12.88	50 10.56
74	8.9	. .	. .	42.	. .	. .	. .	. .	57 59.86	20.50	0.70	III.	2	17.010	43 35.82	47.25	5.94	57 38.66	55 19.01
75	7	. .	. .	. .	28.7	45.7	. .	. .	16 58 27.72	20.50	0.71	IV.	2	19.983	40 29.42	47.18	5.49	16 58 6.51	52 12.09
76	7	. .	14.5	. .	51.	. .	. .	. .	17 0 50.42	20.49	0.74	IV.	3	33.168	26 41.38	46.85	3.53	17 0 29.19	38 21.76
77	9	. .	. .	. .	. .	. .	42.	. .	1 6.12	20.49	0.72	VI.	3	25.515	34 41.84	46.82	4.68	0 44.91	46 23.34
78	8	. .	. .	36.	. .	. .	. .	. .	2 53.78	20.49	0.74	III.	3	36.463	23 14.29	46.55	3.04	2 32.55	34 53.88
79	9	. .	. .	. .	. .	. .	42.	. .	3 6.41	20.48	0.78	VI.	4	52.545	6 23.11	46.53	0.72	2 45.15	18 0.36
80	8	7.2	25.	43.	1.	. .	36.5	. .	6 0.72	20.48	0.77	IV.	4	49.255	9 49.79	46.09	1.20	5 39.47	21 27.08
81	8	. .	14.3	. .	. .	. .	. .	. .	7 50.24	20.48	0.74	II.	3	35.773	23 56.94	45.83	3.14	7 29.02	35 35.91
82	9	. .	. .	14.	. .	. .	. .	. .	8 31.76	20.48	0.75	III.	3	38.600	21 0.19	45.73	2.72	8 10.53	32 38.64
83	8	. .	. .	. .	. .	. .	4.	. .	8 28.23	20.48	0.74	VI.	3	35.543	24 12.69	45.73	3.18	8 7.01	30 35 51.60
84	8	. .	. .	. .	. .	0.5	. .	. .	9 42.40	20.48	0.69	V.	1	11.345	49 30.76	45.55	6.82	9 21.23	31 1 13.13
85	8	. .	. .	. .	. .	. .	. .	36.	9 41.99	20.48	0.70	VII.	2	15.577	45 5.70	45.55	6.18	9 20.81	30 56 47.43
86	7	0.5	18.	35.7	54.	. .	. .	. .	12 53.69	20.47	0.77	IV.	4	49.883	9 10.22	45.08	1.08	12 32.45	20 46.38
87	8	. .	. .	3.5	. .	. .	. .	. .	14 21.36	20.47	0.70	III.	2	17.463	43 7.51	44.86	5.89	14 0.19	54 48.26
88	8	. .	. .	. .	12.5	. .	. .	. .	15 12.16	20.46	0.77	IV.	4	47.820	11 19.59	44.73	1.40	14 50.93	22 55.72
89	8	. .	. .	. .	. .	42.5	. .	. .	16 24.57	20.46	0.74	V.	3	36.520	23 11.34	44.55	3.04	16 3.37	30 34 48.93
90	7	59.	16.5	35.	. .	. .	. .	. .	18 52.86	20.46	0.69	III.	1	8.285	52 42.28	44.18	7.29	18 31.71	31 4 23.75
91	7	. .	. .	. .	28.5	. .	3.5	. .	19 27.63	20.46	0.72	IV.	3	23.950	36 19.54	44.09	4.90	19 6.45	30 47 58.53
92	8	. .	5.	22.7	. .	. .	. .	. .	22 40.57	20.45	0.78	III.	4	53.585	5 18.21	43.61	0.57	22 19.34	16 52.39
93	8	. .	. .	. .	1.3	. .	. .	. .	23 1.00	20.45	0.77	IV.	4	50.155	8 53.29	43.56	1.05	22 39.78	20 27.90
94	7	. .	. .	. .	44.5	. .	. .	. .	23 44.30	20.45	0.78	IV.	4	54.760	4 4.42	43.46	0.41	23 23.07	15 39.29
95	7	. .	. .	28.	46.	3.7	. .	. .	24 45.78	20.45	0.78	IV.	4	52.560	6 22.55	43.30	0.71	24 24.55	17 56.56
96	8.9	. .	. .	38.5	. .	. .	. .	. .	26 56.24	20.44	0.76	III.	4	44.605	14 41.28	42.98	1.85	26 35.04	26 16.11
97	7.8	. .	56.5	14.5	33.5	50.3	. .	. .	28 32.47	20.44	0.72	IV.	3	23.343	36 57.89	42.73	5.00	28 11.31	48 35.62
98	8	. .	. .	. .	21.5	. .	. .	. .	17 33 20.85	−20.43	−0.74	IV.	3	33.305	−26 32.84	−42.01	−3.51	17 32 59.68	−30 38 8.36

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 120	June 17, 21 1	. .	. .	. .	. .	. .	. .	. .	30.228	64.0	56.0			

ZONE 120. JUNE 17. P. $D_0 = -30° 10' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	7.8	..	1.	..	38.	..	..	..	17 38 37.12	−20.42	−0.71	IV.	2	21.830	−38 33.45	−41.21	−5.23	17 38 15.99	−30 50 9.89
100	8	..	..	..	..	..	28.	..	38 10.20	20.42	0.78	VI.	4	55.910	2 51.93	41.17	0.22	38 49.05	14 23.32
101	7	..	..	..	..	17.	..	..	39 59.08	20.42	0.75	V.	3	38.840	20 45.63	41.00	2.69	39 37.91	32 19.32
102	7.8	..	..	..	..	7.5	..	..	40 49.45	20.42	0.71	V.	2	17.760	42 48.94	40.88	5.85	40 28.32	54 25.67
103	7	..	..	..	55.	..	..	..	41 54.51	20.41	0.75	IV.	4	40.610	18 51.91	40.71	2.43	41 33.35	30 25.05
104	8.9	..	..	..	..	..	..	48.5	41 54.87	20.41	0.75	VII.	4	40.403	19 4.20	40.71	2.46	41 33.71	30 37.37
105	8	..	..	..	50.	..	..	..	44 49.08	20.41	0.71	IV.	3	20.223	38 8.1	40.27	5.47	44 27.96	49 43.9
106	8	..	..	..	..	..	..	46.	44 52.11	20.41	0.71	VII.	3	22.610	37 44.02	40.27	5.11	44 30.99	49 19.40
107	8	..	..	..	..	..	..	51.	45 57.33	20.41	0.74	VII.	4	37.200	22 25.05	40.10	2.93	45 36.18	33 58.08
108	5.6	..	..	..	..	6.5	..	42.5	49 48.90	20.40	0.78	V.	4	56.340	2 25.48	39.50	0.07	49 27.72	13 55.05
109	8	32.5	..	..	..	..	..	..	53 26.31	20.39	0.71	I.	2	14.560	46 8.83	38.93	6.32	53 5.21	57 44.08
110	8	..	..	21.	..	..	..	..	53 38.87	20.39	0.71	III.	2	14.663	46 3.13	38.89	6.31	53 17.77	57 38.33
111	7.8	..	..	..	..	4.7	..	..	53 46.70	20.39	0.73	V.	3	25.193	35 1.87	38.87	4.72	53 25.58	46 35.46
112	7	..	..	..	32.	..	..	..	55 31.44	20.39	0.75	IV.	3	37.450	22 12.81	38.59	2.90	55 10.30	33 44.30
113	4.5	..	..	14.	32.	49.5	..	..	56 31.66	20.39	0.77	IV.	4	45.540	13 42.76	38.43	1.72	56 10.50	25 12.91
114	8	..	..	..	..	..	..	29.	56 35.24	20.39	0.74	VII.	3	31.687	28 14.41	38.42	3.75	56 14.11	39 46.58
115	8.9	..	..	..	..	..	..	27.	57 33.17	20.38	0.73	VII.	3	27.367	32 45.64	38.27	4.39	57 12.06	30 44 18.30
116	7.8	..	..	..	..	..	18.5	..	17 58 42.47	20.38	0.70	VI.	2	11.575	49 17.20	38.08	6.78	17 58 21.39	31 0 52.06
117	6.7	..	11.	29.	47.5	4.5	22.5	..	18 0 46.75	20.38	0.73	IV.	3	26.877	33 15.89	37.75	4.48	18 0 25.64	30 44 48.12
118	8.9	36.3	..	12.	..	..	..	..	3 30.00	20.37	0.71	III.	2	13.700	47 3.57	37.30	6.50	3 8.92	58 37.37
119	8.7	..	..	..	..	..	..	7.	7 13.43	20.37	0.77	VII.	4	43.960	15 20.92	36.69	1.91	6 52.29	26 49.52
120	8	..	..	..	..	..	..	57.7	9 3.85	20.36	0.73	VII.	3	25.963	34 13.54	36.38	4.61	8 42.76	30 45 44.53
121	6.7	3.	..	39.3	..	..	..	..	11 57.02	20.36	0.70	III.	2	12.317	48 30.56	35.89	6.71	11 35.96	31 0 3.16
122	7.8	..	..	..	7.	..	..	..	15 6.20	20.36	0.73	IV.	3	26.086	34 5.64	35.34	4.60	14 45.11	30 45 35.58
123	6.7	..	..	..	..	2.5	20.3	..	15 44.43	20.35	0.72	V.	3	22.225	38 8.23	35.23	5.18	15 23.36	49 38.64
124	7	..	..	..	..	42.	59.5	..	17 23.96	20.35	0.76	V.	4	42.587	16 47.79	34.95	2.12	17 2.85	30 28 14.86
125	7	6.	..	42.7	..	..	..	..	21 0.25	20.35	0.70	III.	1	9.250	51 41.69	34.31	7.18	20 39.20	31 3 13.18
126	7.8	..	..	..	..	34.	..	10.	21 15.98	20.35	0.71	V.	2	16.920	43 41.65	34.27	6.00	20 54.92	30 55 11.92
127	7	3.7	21.3	39.7	..	..	..	..	24 57.55	20.34	0.71	III.	2	12.910	47 53.08	33.62	6.62	24 36.50	59 23.32
128	8	..	..	..	38.	..	..	..	25 37.10	20.34	0.72	IV.	2	21.460	38 56.92	33.51	5.29	25 16.04	50 25.72
129	8	14.	31.5	50.	..	..	..	..	28 7.75	20.34	0.72	III.	2	18.712	41 49.00	33.07	5.73	27 46.69	53 17.80
130	7.	42.	59.	17.3	36.	53.3	..	..	29 35.27	20.33	0.75	IV.	3	32.790	27 4.90	32.81	3.56	29 14.19	38 31.27
131	7	50.2	8.	26.	44.3	2.	..	..	31 43.85	20.33	0.74	IV.	3	31.677	28 14.79	32.45	3.75	31 22.78	39 40.99
132	9	..	..	..	..	54.	..	..	33 36.09	20.33	0.76	V.	4	39.830	19 40.59	32.12	2.54	33 15.00	31 5.25
133	8	..	..	..	14.	..	..	..	35 13.46	20.32	0.76	IV.	4	38.420	21 9.33	31.84	2.74	34 52.38	32 33.91
134	8	1.5	19.3	37.5	55.7	13.	31.	..	38 55.17	20.32	0.76	IV.	4	40.063	19 26.16	31.20	2.51	38 34.09	30 49.87
135	8	..	..	..	6.3	..	..	..	40 5.64	20.32	0.75	IV.	3	33.330	26 31.28	31.00	3.50	39 44.57	37 55.78
136	8.9	..	..	24.	..	0.3	..	..	41 42.05	20.32	0.71	V.	2	14.365	46 22.20	30.71	6.40	41 21.02	57 49.31
137	7	..	49.	7.	26.	..	..	..	43 25.02	20.31	0.72	IV.	2	17.615	42 58.11	30.42	5.89	43 3.99	30 54 24.42
138	7	56.3	..	32.	51.	8.	..	..	48 49.96	20.30	0.70	IV.	1	11.270	49 35.27	29.48	6.86	48 28.96	31 1 1.61
139	9	..	..	..	..	..	..	17.	49 22.94	20.30	0.71	VII.	2	12.943	47 52.77	29.37	6.62	49 1.93	30 59 18.76
140	9	..	6.	..	..	..	..	..	53 41.92	20.30	0.76	II.	3	37.680	21 57.26	28.62	2.85	53 20.86	33 18.73
141	9	..	25.	..	..	..	..	..	58 0.80	20.29	0.77	II.	4	47.395	11 46.24	27.87	1.44	57 39.74	23 5.55
142	7.8	0.	17.3	35.7	54.7	..	..	..	18 59 53.63	20.29	0.72	IV.	2	20.383	40 4.51	27.54	5.45	18 59 32.62	51 27.50
143	6.7	..	40.	57.5	15.5	33.3	..	..	19 1 15.43	−20.29	−0.79	IV.	4	55.640	−3 9.37	−27.30	−0.20	19 0 54.35	−30 14 26.87

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

June 17, $19^h\ 1^m$ to $19^h\ 45^m$, stopped to rest.

(120) 100. Transit over T. V assumed as recorded over T. VI.

(120) 105. Micrometer reading assumed as $22^r.223$ instead of $20^r.223$.

ZONE 121. JUNE 17. P. $D_0 = -30° 10' 50''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	7.3	25.7	44.5	1.3	. .	. .	19 47 43.44	−20.24	−0.96	IV.	2	14.275	−46 27.79	−19.38	−6.44	19 47 22.24	−30 57 43.61
2	6.7	57.	14.3	33.	51.7	9.	. .	. .	49 50.76	20.24	0.94	IV.	2	15.810	44 51.25	19.02	6.18	49 29.58	56 6.45
3	7	29.	46.	4.5	. .	40.5	58.3	. .	55 22.37	20.24	0.66	IV.	3	35.970	23 45.47	18.10	3.10	55 1.47	30 34 56.67
4	8.9	30.3	47.7	6.3	25.3	. .	. .	. .	19 59 24.12	20.23	0.97	IV.	1	11.960	48 51.77	17.43	6.78	19 59 2.92	31 0 5.98
5	6.7	58.3	. .	34.3	52.5	9.7	27.5	. .	20 6 51.89	20.23	0.52	IV.	4	43.010	16 21.32	16.23	2.03	20 6 31.14	30 27 29.58
6	8.9	27.5	45.	3.3	21.	. .	. .	. .	10 20.88	20.23	0.68	IV.	3	30.810	29 9.12	15.66	3.88	9 59.97	40 18.66
7	8.9	. .	21.	39.	57.	. .	. .	. .	12 56.92	20.23	0.82	IV.	2	20.585	39 51.71	15.25	5.45	12 35.87	51 2.41
8	8.9	19.3	37.	55.3	13.5	. .	. .	. .	15 12.99	20.22	0.89	IV.	1	13.910	46 49.31	14.89	6.49	14 51.88	58 0.69
9	8	. .	. .	. .	25.3	. .	1.	. .	16 25.08	20.22	0.51	V.	4	42.540	16 50.80	14.70	2.10	16 4.35	27 57.60
10	8	50.	7.5	26.	44.3	. .	. .	. .	24 43.63	20.22	0.66	IV.	3	29.807	30 12.05	13.40	4.03	24 22.75	41 19.48
11	7	. .	16.3	35.	54.	11.	. .	. .	25 52.82	20.22	0.88	IV.	2	13.083	47 42.54	13.22	6.64	25 31.72	30 58 52.40
12	7.8	. .	39.	. .	16.3	. .	. .	. .	29 15.21	20.22	0.94	IV.	1	7.553	53 28.54	12.69	7.50	28 54.05	31 4 38.73
13	7.8	53.	10.3	29.	47.3	4.3	. .	. .	34 46.53	20.22	0.69	IV.	3	25.545	34 39.64	11.85	4.69	34 25.62	30 45 46.18
14	7	. .	56.7	15.3	34.3	51.3	. .	26.7	36 33.03	20.22	0.87	IV.	1	11.003	49 51.85	11.59	6.95	36 11.94	31 1 0.39
15	7	34.5	52.	10.3	29.3	46.3	4.3	. .	40 28.26	20.22	0.65	IV.	3	26.800	33 20.72	10.99	4.50	40 7.39	30 44 26.21
16	7	0.3	18.	35.7	54.	. .	. .	. .	42 53.64	20.22	0.34	IV.	4	49.870	9 11.04	10.63	1.00	42 33.08	20 12.67
17	8	33.3	51.	9.3	28.	. .	. .	. .	46 27.08	20.21	0.61	IV.	3	28.830	31 13.35	10.10	4.20	46 6.26	30 42 17.65
18	7	. .	. .	. .	. .	57.	14.5	. .	50 38.65	20.21	0.87	V.	1	6.900	54 9.52	9.49	7.60	50 17.77	31 5 16.61
19	7	. .	. .	. .	20.	37.7	. .	. .	52 19.79	20.21	0.29	V.	4	51.490	7 29.52	9.25	1.78	51 59.29	30 18 30.55
20	6	. .	42.	0.3	18.7	. .	. .	11.7	20 57 17.99	20.21	0.59	IV.	3	28.113	31 58.46	8.53	4.31	20 56 57.19	43 1.30
21	7	32.3	50.	8.	26.3	43.5	1.3	19.2	21 1 25.74	−20.21	−0.29	IV.	4	50.457	− 8 34.41	− 7.94	−0.92	21 1 5.24	−30 19 33.27

ZONE 122. JUNE 24. P. $D_0 = -25° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	30.	47.3	4.7	22.5	39.	. .	. .	15 59 21.64	−19.30	−2.55	IV.	2	16.690	−43 56.10	−10.92	−3.76	15 58 59.79	−25 55 10.78
2	8.9	. .	. .	1.5	. .	. .	. .	. .	16 1 18.56	19.30	2.49	IV.	1	9.813	51 6.48	10.70	4.46	16 0 56.77	26 2 21.64
3	9	. .	. .	. .	. .	. .	10.	. .	1 35.65	19.30	2.52	IV.	2	13.660	41 52.63	10.66	3.56	1 13.83	25 53 6.85
4	8	. .	. .	. .	9.	26.	. .	. .	3 8.73	19.30	2.78	IV.	4	41.430	18 0.54	10.48	1.30	2 46.65	29 12.32
5	9	. .	. .	51.	9.	. .	. .	. .	5 8.06	19.30	2.56	IV.	2	17.790	42 47.00	10.24	3.65	4 46.20	54 0.89
6	7.8	15.	31.7	49.	6.3	. .	. .	. .	8 5.95	19.29	2.78	IV.	4	41.614	17 48.94	9.89	1.28	7 43.88	29 0.11
7	7	. .	. .	21.5	38.7	55.5	. .	. .	10 38.41	19.29	2.83	IV.	4	47.017	12 10.01	9.58	−0.75	10 16.29	23 20.34
8	4	. .	52.5	9.5	27.	44.	. .	. .	12 26.70	19.29	2.97	IV.	4	56.260	2 30.55	9.36	+0.16	12 4.50	13 39.75
9	9	. .	25.	42.5	. .	. .	. .	. .	14 59.52	19.29	2.54	III.	2	16.970	43 38.33	9.04	−3.73	14 37.69	54 51.10
10	8	28.3	45.	2.5	20.3	. .	53.3	. .	18 19.39	19.28	2.53	VI.	2	17.070	43 32.31	8.62	3.73	17 57.58	25 54 44.66
11	1	. .	0.5	18.	36.5	52.5	. .	. .	20 35.19	19.28	2.47	IV.	1	6.630	54 26.43	8.34	4.79	20 13.44	26 5 39.56
12	7.8	. .	32.	49.3	7.	23.	. .	. .	23 6.21	19.28	2.69	IV.	3	30.235	29 45.38	8.00	2.41	22 44.24	25 40 55.79
13	9	. .	. .	. .	. .	. .	53.	. .	27 18.94	19.27	2.83	VI.	4	44.190	15 7.12	7.45	1.03	26 56.84	26 15.60
14	7	25.	41.7	59.	16.7	32.3	. .	. .	31 15.88	19.27	2.66	IV.	3	25.800	34 23.46	6.91	2.85	30 53.95	25 45 33.22
15	8	. .	. .	. .	. .	. .	. .	13.3	31 21.72	19.27	2.52	VII.	2	10.805	50 5.22	6.90	4.36	30 59.93	26 1 16.48
16	9	. .	. .	. .	2.	. .	. .	. .	35 1.54	19.26	2.80	IV.	4	41.213	18 14.15	6.39	1.32	34 39.48	25 29 21.86
17	8	. .	. .	. .	. .	. .	. .	21.	35 29.41	19.26	2.51	VII.	1	9.820	51 6.35	6.32	−4.46	35 7.64	26 2 17.13
18	7	. .	28.7	. .	2.7	19.5	. .	. .	38 2.60	19.26	2.94	IV.	4	54.930	3 53.75	5.96	+0.02	37 40.40	25 14 59.69
19	8.9	. .	. .	. .	. .	12.	. .	. .	39 54.82	19.26	2.66	V.	3	23.700	36 35.55	5.69	−3.06	39 32.90	47 44.30
20	8	. .	. .	. .	. .	. .	38.	. .	40 4.04	19.26	2.96	VI.	4	55.740	3 2.65	5.67	+0.10	39 41.82	14. 8.22
21	8	. .	. .	. .	. .	8.	. .	. .	41 50.81	19.26	2.66	V.	3	22.210	38 9.17	5.41	−3.21	41 28.89	49 17.79
22	8.9	. .	. .	. .	. .	. .	. .	49.5	41 58.14	19.26	2.71	VII.	3	28.390	31 41.58	5.39	2.59	41 36.17	42 49.56
23	8	. .	. .	. .	. .	. .	. .	52.	43 0.98	19.25	2.94	VII.	4	53.580	5 17.90	5.24	0.10	42 38.79	16 23.24
24	7	. .	56.	13.	31.	. .	. .	. .	16 45 30.23	−19.25	−2.77	IV.	3	36.303	−23 24.77	− 4.87	−1.80	16 45 8.21	−25 34 31.44

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s,	° ′ ″	r.

REMARKS.

(121) 7. Transit over middle thread assumed to have been at $57^s.7$ instead of $5^s.7$.

(122) 3. Micrometer reading assumed as $18^r.660$ instead of $13^r.660$.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
		h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 122	1847. June 24,	16 0	64 32 31.6	31.2	29.0	40.2	6.3	30.9	28.20[a]	30.210	75.0	70.0	75.0	74.0	74.0
		16 35	. .	. .	. .	. .	. .	. .	. .	30.208	74.0	68.0			
		17 4	. .	. .	. .	. .	. .	. .	. .	30.208	73.2	67.8			

[a] Corr. for runs +0″·07.

ZONE 122. JUNE 24. P. $D_0 = -25° 11' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	8	. .	. .	. .	. .	58.3	. .	33.	16 45 41.48	−19.25	−2.78	V.	3	37.163	−22 31.01	− 4.84	−1.71	16 45 19.45	−25 33 37.56
26	8	. .	. .	. .	. .	. .	51.5	. .	47 17.27	19.25	2.68	VI.	3	25.840	34 21.32	4.60	2.85	46 55.34	45 28.77
27	7	. .	49.7	7.	25.	41.3	. .	. .	49 24.11	19.25	2.64	IV.	2	22.287	38 5.03	4.28	3.21	49 2.22	49 12.52
28	9	. .	. .	. .	1.3	. .	. .	. .	53 0.64	19.24	2.72	IV.	3	31.010	28 56.63	3.74	2.33	52 38.68	40 2.70
29	6:7	18.	35.	52.	9.	. .	. .	. .	55 8.95	19.24	2.84	IV.	4	41.793	17 37.59	3.41	1.26	54 46.87	28 42.26
30	7	. .	. .	. .	52.5	9.3	. .	. .	55 52.18	19.24	2.87	IV.	4	44.820	14 27.74	3.31	0.97	55 30.07	25 32.02
31	8	. .	. .	. .	. .	48.5	. .	. .	56 31.49	19.24	2.95	V.	3	54.127	4 47.05	3.20	0.05	56 9.30	15 50.30
32	8	. .	. .	. .	. .	. .	. .	37.	56 45.73	19.24	2.77	VII.	3	34.745	25 2.69	3.17	1.96	56 23.72	36 7.82
33	7	. .	. .	43.	. .	17.2	. .	. .	16 59 0.05	19.24	2.96	III.	4	54.720	4 6.92	2.81	0.00	16 58 37.85	15 9.73
34	8	. .	11.	. .	45.5	. .	. .	. .	17 0 45.18	19.24	2.91	IV.	4	49.597	9 28.29	2.55	0.50	17 0 23.03	20 31.34
35	8	47.	. .	21.3	. .	. .	. .	. .	2 38.28	19.23	2.66	III.	3	23.110	37 12.01	2.25	3.12	2 16.39	48 17.38
36	7	. .	. .	. .	9.	. .	. .	. .	3 8.54	19.23	2.83	IV.	4	41.173	18 16.59	2.17	1.32	2 46.48	29 20.08
37	8	. .	. .	. .	. .	. .	1.5	. .	3 27.43	19.23	2.85	VI.	4	42.665	16 42.65	2.12	1.17	3 5.35	27 45.94
38	7.8	. .	. .	. .	. .	45.	. .	. .	17 4 27.80	−19.23	−2.64	V.	3	20.980	−39 26.22	− 1.95	−3.33	17 4 5.93	−25 50 31.50

ZONE 123. JULY 17. P. $D_0 = -25° 10' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	. .	. .	15.	. .	49.	. .	17 3 14.72	−27.07	−1.01	IV.	4	41.053	−18 24.06	−43.35	−1.44	17 2 46.64	−25 29 28.85
2	8.9	. .	27.5	. .	3.	. .	. .	. .	11 2.06	27.08	1.02	IV.	3	24.564	40 54.90	42.14	3.55	10 33.96	25 52 0.59
3	7	42.	58.5	16.5	34.5	. .	. .	. .	13 33.36	27.08	1.05	IV.	1	8.467	52 31.22	41.75	4.60	13 5.23	26 3 37.57
4	4	15.3	32.	49.5	7.5	. .	. .	57.	18 6.35	27.09	1.01	IV.	3	23.023	37 17.78	41.02	3.17	17 38.25	25 48 21.97
5	6	. .	. .	. .	. .	8.7	25.5	42.7	19 51.57	27.09	0.97	V.	4	47.437	11 43.73	40.74	0.82	19 23.51	22 45.29
6	8	55.	. .	29.5	. .	. .	. .	. .	31 46.27	27.11	0.96	III.	4	38.400	21 10.58	38.82	1.67	31 18.20	32 11.07
7	8	. .	20.	. .	55.	. .	. .	. .	37 54.34	27.12	0.98	IV.	3	29.640	30 22.65	37.82	2.54	37 26.24	41 23.01
8	7.8	20.	37.	54.3	12.	. .	. .	. .	40 11.28	27.12	0.97	IV.	3	29.456	30 34.31	37.15	2.56	39 43.19	41 34.02
9	7	14.3	31.	48.5	6.3	22.5	. .	. .	43 5.45	27.13	0.97	IV.	3	27.523	32 35.53	36.97	2.74	42 37.35	43 35.24
10	8	. .	. .	. .	29.	. .	. .	. .	45 28.04	27.13	1.00	IV.	2	16.130	44 31.31	36.57	3.85	44 59.91	55 31.73
11	7	34.3	51.5	9.	26.5	43.	. .	. .	47 25.80	27.13	0.96	IV.	3	32.330	27 34.01	36.25	2.27	46 57.71	38 32.53
12	7	14.	31.3	48.3	. .	. .	. .	. .	50 5.42	27.14	0.97	V.	3	24.060	36 13.02	35.81	3.06	49 37.31	47 11.89
13	7	. .	. .	. .	. .	. .	. .	18.	50 26.57	27.14	0.97	VII.	3	23.320	36 59.71	35.75	3.14	49 58.46	47 58.60
14	7	40.8	57.	15.	. .	. .	. .	. .	54 31.88	27.14	0.96	III.	2	17.003	43 36.26	35.07	3.76	54 3.78	54 35.09
15	8	. .	. .	. .	9.3	. .	. .	. .	55 8.64	27.14	0.95	IV.	3	31.150	28 47.92	34.97	2.39	54 40.55	39 45.28
16	7	. .	. .	. .	. .	17.	34.	. .	55 59.86	27.15	0.94	V.	3	34.363	25 26.72	34.82	2.06	55 31.77	36 23.60
17	8	. .	. .	27.3	. .	. .	. .	. .	57 44.26	27.15	0.92	III.	4	41.410	18 1.80	34.53	1.40	57 16.19	28 57.73
18	8	. .	11.	. .	. .	. .	. .	. .	58 45.29	27.15	0.93	II.	3	35.820	23 53.94	34.37	1.93	58 17.21	34 50.24
19	7	. .	. .	. .	. .	6.	. .	. .	58 48.88	27.15	0.93	V.	3	34.415	25 23.45	34.36	2.06	58 20.80	36 19.87
20	8	. .	. .	. .	. .	. .	53.	. .	17 59 18.97	27.15	0.90	VI.	4	48.307	10 48.99	34.26	0.73	58 50.92	21 43.98
21	6	. .	. .	. .	. .	. .	40.	57.	18 0 5.86	27.15	0.92	VI.	4	41.060	18 23.31	34.13	1.41	17 59 37.79	25 29 18.85
22	7	. .	. .	. .	44.	. .	. .	. .	1 42.90	27.15	0.98	IV.	1	8.633	52 20.69	33.86	4.63	18 1 14.77	26 3 19.18
23	6.7	. .	. .	. .	. .	33.	50.	. .	2 15.79	27.16	0.95	V.	3	24.020	36 15.47	33.76	3.09	1 47.68	25 47 12.32
24	8	47.7	5.	23.	. .	. .	. .	. .	6 22.11	27.16	0.95	IV.	2	21.660	38 44.26	33.03	3.32	5 54.00	49 40.61
25	8	. .	. .	. .	25.5	. .	. .	. .	7 7.28	27.16	0.95	V.	3	25.987	34 12.03	32.90	2.89	6 39.17	45 7.82
26	7.8	. .	. .	31.	48.5	. .	. .	. .	8 48.05	27.17	0.91	IV.	4	46.720	12 28.63	32.66	0.87	8 19.97	23 22.16
27	6.7	. .	. .	36.	54.	10.3	. .	. .	9 53.17	27.17	0.94	IV.	3	31.533	28 23.95	32.48	2.35	9 25.06	39 18.78
28	8.9	. .	. .	. .	. .	. .	. .	11.	10 19.74	27.17	0.91	VII.	3	36.124	23 36.25	32.41	1.90	9 51.66	34 30.56
29	8	. .	. .	. .	. .	12.	. .	. .	11 54.91	27.17	0.91	V.	3	38.680	20 55.72	32.14	1.64	11 26.83	31 49.50
30	7.8	. .	. .	. .	. .	59.	. .	. .	12 41.93	27.17	0.90	V.	4	44.995	14 16.70	32.00	1.04	12 13.86	25 9.74
31	8	. .	. .	. .	. .	. .	3.	. .	18 13 28.98	−27.17	−0.89	VI.	4	49.325	− 9 45.15	−31.87	−0.61	18 13 0.92	−25 20 37.63

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 123	July 17,	17 0	64 32 35.4	32.2	30.7	43.6	5.6	34.6	30.35[a]	30.238	80.0	76.5	79.5		
		18 0	. .	. .	. .	. .	. .	. .	. .	30.230	79.0	75.3			
		19 14	. .	. .	. .	. .	. .	. .	. .	30.226	77.3	74.3			
		20 1	. .	. .	. .	. .	. .	. .	. .	30.226	77.0	73.0			
		21 24	. .	. .	. .	. .	. .	. .	. .	30.226	76.5	72.5			

REMARKS.

July 17. Work interrupted by lamp going out at $21^h 30^m$.

(123) 2. Micrometer reading assumed as $19^r.564$ instead of $24^r.564$.

(123) 24. Transits over T.'s II, III, and IV assumed to have been recorded as over T.'s I, II, and III.

(123) 25. Transit over T. V assumed to have been recorded as over T. IV.

[a] Corr. for runs +0″.07.

ZONE 123. JULY 17. P. $D_0 = -25° 10' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
32	7	. .	37.	. .	13.	. .	. .	. .	18 16 11.76	−27.18	−0.97	IV.	1	10.935	−49 56.05	−31.41	−4.39	18 15 43.61	−26 0 51.85
33	8	. .	. .	. .	. .	26.	. .	. .	17 8.79	27.18	0.95	V.	2	18.150	42 24.60	31.25	3.67	16 40.66	25 53 19.52
34	3.4	. .	36.5	53.7	11.	28.	. .	. .	19 10.71	27.18	0.91	IV.	4	40.415	19 4.26	30.90	1.48	18 42.62	29 56.64
35	6	. .	. .	17.7	. .	52.	. .	. .	20 34.79	27.18	0.89	IV.	4	49.136	9 57.19	30.66	0.63	20 6.72	20 48.48
36	8	. .	. .	. .	. .	. .	. .	46.	20 54.70	27.19	0.93	VII.	3	32.330	27 34.38	30.61	2.27	20 26.58	38 27.26
37	7	. .	. .	. .	. .	. .	. .	23.	21 31.70	27.19	0.93	VII.	3	32.162	27 44.86	30.51	2.28	21 3.58	38 37.65
38	7.8	. .	. .	. .	. .	8.7	. .	. .	22 51.52	27.19	0.94	V.	3	23.837	36 26.89	30.28	3.11	22 23.39	47 20.28
39	8	. .	. .	. .	18.	. .	. .	. .	24 17.78	27.19	0.88	IV.	4	52.630	6 18.10	30.03	0.31	23 49.71	17 8.44
40	7	. .	. .	. .	. .	14.5	. .	. .	24 57.39	27.19	0.91	V.	3	37.280	22 23.73	29.92	1.78	24 29.29	33 15.43
41	8	. .	. .	32.	. .	. .	. .	. .	27 48.94	27.20	0.89	III.	4	44.367	14 56.33	29.43	1.08	27 20.85	25 46.84
42	7	. .	. .	. .	23.5	39.7	. .	. .	28 22.62	27.20	0.93	IV.	3	24.460	35 47.79	29.33	3.04	27 54.49	46 40.16
43	7	. .	. .	. .	28.	. .	2.	. .	29 27.68	27.20	0.91	IV.	4	37.800	21 48.04	29.15	1.73	28 59.57	32 38.92
44	8	. .	. .	44.	. .	. .	. .	. .	31 0.98	27.20	0.91	III.	3	32.970	26 53.29	28.89	2.20	30 32.87	37 44.38
45	8	. .	. .	. .	. .	21.3	. .	56.	31 4.44	27.20	0.91	V.	3	32.757	27 7.27	28.88	2.23	30 36.33	37 58.38
46	8	. .	31.3	. .	6.	. .	. .	. .	34 5.50	27.21	0.91	IV.	3	32.545	27 20.45	28.36	2.25	33 37.39	38 11.06
47	7	5.	21.3	39.	. .	. .	. .	. .	35 56.06	27.21	0.95	III.	2	15.243	45 26.85	28.05	3.96	35 27.90	56 18.86
48	7.8	. .	. .	. .	. .	11.	. .	. .	35 53.91	27.21	0.90	V.	4	39.480	20 2.79	28.05	1.57	35 25.80	30 52.41
49	8	. .	. .	. .	32.	. .	. .	. .	38 31.68	27.21	0.89	IV.	4	47.695	11 27.49	27.61	0.77	38 3.58	22 15.87
50	8	1.	. .	35.5	53.	. .	. .	. .	40 52.32	27.22	0.92	IV.	3	24.490	35 45.91	27.20	3.04	40 24.18	46 36.15
51	8.9	. .	. .	. .	35.5	. .	. .	. .	42 35.18	27.22	0.87	IV.	4	48.163	10 58.21	26.92	0.72	42 7.09	21 45.85
52	7	. .	. .	. .	16.	32.	. .	. .	47 15.41	27.23	0.86	IV.	4	55.480	3 19.46	26.12	0.04	46 47.32	14 5.62
53	8	. .	. .	. .	23.	. .	57.3	. .	48 22.73	27.23	0.91	IV.	3	31.460	28 28.58	25.94	2.35	47 54.59	39 16.87
54	8	. .	. .	54.3	. .	. .	. .	. .	50 11.22	27.23	0.87	III.	4	50.055	8 59.50	25.63	0.57	49 43.12	19 45.70
55	7.8	. .	. .	. .	52.5	. .	. .	. .	50 51.88	27.23	0.90	IV.	3	32.993	26 52.23	25.52	2.20	50 23.75	37 39.95
56	7.8	. .	3.	. .	38.3	55.	. .	. .	53 37.55	27.24	0.94	IV.	2	17.530	43 3.50	25.05	3.73	53 9.37	53 52.28
57	8	. .	. .	. .	. .	. .	. .	52.	54 0.94	27.24	0.86	VII.	4	50.863	8 8.08	24.98	0.48	53 32.84	18 53.54
58	8.9	. .	. .	. .	28.3	. .	. .	. .	55 28.02	27.24	0.86	IV.	4	49.955	9 5.70	24.73	0.57	54 59.92	19 51.00
59	7	. .	. .	. .	. .	18.3	35.5	. .	56 1.33	27.24	0.89	V.	4	43.275	16 4.77	24.65	1.19	55 33.20	26 50.61
60	7	. .	34.	51.3	9.3	. .	. .	. .	18 59 8.40	27.25	0.93	IV.	2	15.650	45 1.43	24.12	3.92	58 40.22	55 49.47
61	6	. .	. .	. .	4.	. .	37.5	. .	19 0 3.62	27.25	0.86	IV.	4	51.107	7 53.59	23.96	0.43	18 59 35.51	18 37.98
62	9	. .	. .	. .	. .	. .	. .	24.	0 32.91	27.25	0.86	VII.	4	48.897	10 11.36	23.89	0.63	19 0 4.80	20 55.88
63	9	. .	. .	. .	39.5	. .	. .	. .	2 38.74	27.25	0.91	IV.	3	26.340	33 49.83	23.52	2.87	2 10.58	44 36.22
64	9	. .	. .	. .	59.	. .	. .	. .	3 58.05	27.26	0.93	IV.	2	16.567	44 3.94	23.30	3.84	3 29.86	54 51.08
65	4	57.	14.2	31.5	49.3	. .	22.7	. .	6 48.48	27.26	0.88	IV.	4	39.633	19 53.19	22.83	1.55	6 20.34	30 37.57
66	7	. .	. .	. .	. .	44.	0.7	. .	7 26.57	27.26	0.93	V.	2	16.070	44 35.07	22.73	3.89	6 58.38	55 21.69
67	9	. .	. .	. .	55.	. .	. .	. .	8 54.14	27.26	0.92	IV.	2	21.100	39 19.39	22.48	3.39	8 25.96	50 5.26
68	9	. .	. .	. .	. .	. .	54.	. .	9 19.99	27.27	0.86	VI.	4	49.765	9 17.32	22.41	0.56	8 51.86	20 0.29
69	7.8	23.	40.	57.	. .	. .	. .	. .	12 14.23	27.27	0.91	III.	3	22.533	37 29.46	21.92	3.25	11 46.05	48 14.63
70	7	. .	52.	9.7	27.	. .	. .	. .	14 26.45	27.27	0.91	IV.	3	25.785	34 24.39	21.56	2.92	13 58.27	45 8.87
71	8	. .	. .	. .	2.	. .	. .	. .	18 1.09	27.28	0.92	IV.	2	18.723	41 48.51	20.96	3.63	17 32.89	52 33.10
72	7.8	42.	59.	16.	34.	. .	. .	. .	20 33.22	27.28	0.91	IV.	3	24.807	35 25.77	20.54	3.02	20 5.03	46 9.33
73	7	. .	. .	. .	31.	. .	. .	. .	21 30.24	27.29	0.91	IV.	3	26.360	33 48.57	20.38	2.86	21 2.04	44 31.81
74	8	. .	. .	. .	. .	. .	. .	21.	21 29.56	27.29	0.92	VII.	3	21.797	38 35.02	20.38	3.32	21 1.35	49 18.72
75	7	. .	. .	. .	. .	. .	. .	25.	22 33.67	27.29	. .	.	.	. .	. . .	20.22	. .	22 (5)	
76	8.9	. .	. .	. .	. .	. .	. .	22.	26 30.83	27.30	0.87	VII.	4	43.260	16 5.15	19.56	−1.18	26 2.66	26 45.89
77	3.4	. .	. .	. .	. .	19.5	. .	53.3	28 2.41	27.30	0.85	V.	4	56.830	1 54.51	19.32	+0.12	27 34.26	12 33.71
78	7	. .	. .	. .	. .	1.	. .	35.5	33 44.27	27.31	0.86	V.	4	57.207	1 31.06	18.39	+0.16	33 16.10	12 9.29
79	9	. .	. .	. .	12.	. .	. .	. .	36 11.34	27.31	0.91	IV.	3	30.890	29 4.10	17.99	−2.41	35 43.12	39 44.50
80	8	. .	. .	. .	. .	. .	6.	. .	19 36 31.78	−27.31	−0.92	VI.	3	26.920	−33 13.56	−17.94	−2.81	19 36 3.55	−25 43 54.31

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(123) 69. Micrometer reading assumed as $22^r.833$ instead of $22^r.533$.

ZONE 123. JULY 17. P. $D_{\circ} = -25^{\circ}\ 10'\ 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
81	8.9	. .	. .	. .	43.	. .	. .	. .	19 39 0.05	−27.32	−0.95	IV.	2	12.090	−48 44.87	−17.58	−4.30	19 38 31.78	−25 59 26.75
82	7.8	10.3	27.	44.5	2.3	. .	. .	. .	42 1.48	27.32	0.91	IV.	3	29.930	30 4.33	17.05	2.51	41 33.25	40 43.89
83	7	. .	. .	. .	. .	55.	. .	29.	42 37.98	27.32	0.86	V.	4	53.033	5 52.63	16.96	0.24	42 9.80	16 29.83
84	7.8	. .	. .	. .	31.	47.3	. .	. .	44 30.12	27.33	0.93	IV.	2	20.630	39 48.90	16.66	3.44	44 1.86	50 29.00
85	8	39.	55.5	. .	. .	. .	. .	. .	48 29.91	27.33	0.89	II.	4	41.160	18 17.29	16.02	1.39	48 1.69	28 54.70
86	8	. .	. .	25.	. .	. .	. .	. .	48 41.95	27.33	0.89	III.	4	42.880	16 29.35	15.99	1.22	48 13.73	27 6.56
87	7.8	. .	. .	. .	. .	8.5	. .	. .	48 51.38	27.33	0.90	V.	4	35.920	23 45.84	15.97	1.91	48 23.15	34 23.72
88	9	. .	. .	. .	10.	. .	. .	. .	50 9.70	27.34	0.87	IV.	4	49.330	9 45.15	15.76	0.61	49 41.49	20 21.52
89	9	. .	. .	. .	. .	. .	. .	17.	50 25.81	27.34	0.89	VII.	4	40.560	18 54.42	15.72	1.45	49 57.58	29 31.59
90	9	. .	. .	23.	. .	. .	. .	. .	19 56 39.96	27.35	0.89	III.	4	41.315	18 7.76	14.74	1.38	19 56 11.72	28 43.88
91	7	41.	58.	15.	. .	. .	. .	. .	20 1 32.19	27.36	0.92	III.	3	27.530	32 34.72	13.99	2.76	20 1 3.91	43 11.47
92	8.9	. .	. .	. .	. .	50.	. .	24.	20 1 32.78	27.36	0.90	V.	3	32.767	27 6.58	13.99	2.22	20 1 4.52	37 42.79
93	7	. .	. .	. .	. .	. .	56.	. .	21 24 22.03	27.50	0.88	VI.	4	54.188	4 40.14	2.13	0.06	21 23 53.65	15 2.33
94	7.8	. .	31.7	49.	. .	. .	. .	. .	27 6.15	27.50	0.97	III.	2	12.187	48 38.67	1.78	4.35	26 37.68	59 4.80
95	7.8	55.	. .	29.	47.	. .	. .	. .	31 46.13	27.51	0.99	IV.	2	17.190	43 24.85	1.19	3.82	31 17.63	53 49.86
96	7	47.	4.	21.5	29.5	. .	. .	. .	21 33 38.46	−27.51	−0.96	IV.	3	23.780	−36 30.22	− 0.97	−3.15	21 33 9.99	−25 46 54.34

ZONE 124. JULY 19. P. $D_{\circ} = -28^{\circ}\ 18'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	19.5	. .	17 28 44.60	−28.06	−0.52	VI.	4	57.080	− 1 38.71	−13.03	+0.23	17 28 16.02	−28 20 21.51
2	7	29.	46.	4.3	22.5	. .	. .	14.3	31 21.60	28.07	0.64	IV.	3	28.743	31 18.86	12.61	−3.17	30 52.89	50 4.64
3	8	. .	35.2	. .	11.	. .	. .	. .	39 10.45	28.08	0.63	IV.	3	36.245	23 28.34	11.31	2.25	38 41.74	42 11.90
4	8	. .	. .	. .	. .	58.3	. .	. .	39 40.72	28.08	0.62	V.	4	41.345	18 5.82	11.23	1.64	39 12.02	36 48.69
5	8	. .	. .	44.3	. .	. .	. .	. .	42 1.72	28.08	0.62	III.	4	41.650	17 46.62	10.85	1.61	41 33.02	36 29.08
6	8	. .	. .	34.	. .	. .	. .	. .	42 51.41	28.08	0.61	III.	4	43.507	15 50.21	10.72	1.38	42 22.72	34 32.31
7	8	. .	. .	. .	. .	31.5	. .	. .	43 13.99	28.08	0.58	V.	4	51.660	7 18.80	10.65	0.41	42 45.33	35 59.86
8	8	. .	. .	. .	40.	. .	. .	. .	44 39.11	28.09	0.71	IV.	2	20.850	39 34.95	10.42	4.12	44 10.31	58 19.49
9	7.8	. .	. .	. .	. .	. .	. .	39.	44 46.34	28.09	0.62	VII.	3	39.443	20 8.11	10.39	1.87	44 17.63	38 50.37
10	9	. .	. .	25.	. .	. .	. .	. .	48 42.41	28.09	0.61	III.	4	45.215	14 3.08	9.75	1.18	48 13.71	32 44.01
11	9	. .	. .	. .	. .	. .	24.	. .	48 48.94	28.09	0.62	VI.	4	41.295	18 8.70	9.74	1.66	48 20.23	36 50.10
12	7	. .	. .	. .	. .	54.5	. .	29.5	49 36.83	28.09	0.66	V.	3	34.270	25 32.48	9.59	2.49	49 8.08	44 14.56
13	8.9	. .	. .	. .	42.	. .	. .	. .	51 41.43	28.10	0.67	IV.	3	36.605	23 5.70	9.25	2.21	51 12.66	41 47.16
14	9	. .	. .	49.3	. .	. .	. .	. .	53 6.67	28.10	0.59	III.	4	54.650	4 11.37	9.02	0.05	52 37.98	22 50.44
15	7.8	. .	9.7	27.5	45.5	. .	. .	. .	54 44.95	28.10	0.67	IV.	3	34.635	25 9.28	8.75	2.45	54 16.18	28 43 50.48
16	9	. .	. .	34.5	. .	. .	. .	. .	57 52.03	28.11	0.76	III.	2	14.455	46 16.29	8.22	4.91	57 23.16	29 4 59.42
17	7	. .	. .	46.5	4.	. .	. .	. .	59 3.80	28.11	0.61	IV.	4	49.620	9 26.85	8.03	0.66	58 35.08	28 28 5.54
18	9	. .	. .	. .	50.	. .	. .	. .	17 59 49.35	28.11	0.69	IV.	3	32.407	27 29.17	7.90	2.71	17 59 20.55	46 9.78
19	7	2.5	19.5	38.	56.	. .	. .	. .	18 2 55.20	28.12	0.73	IV.	3	23.320	36 59.33	7.39	3.82	18 2 26.35	55 40.54
20	8	38.	55.	13.3	. .	. .	. .	. .	18 5 30.62	−28.12	−0.72	III.	3	26.354	−33 48.57	− 6.95	−3.45	18 5 1.78	−28 52 28.97

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 124	July 19, 17 28	67 39 65.7	60.0	62.3	70.6	31.7	66.2	59.42	30.182	83.5	81.5	83.0	82.5	81.0
	18 5	. .	. .	. .	. .	. .	. .	. .	30.186	83.0	81.5			

REMARKS.

(123) 81. Minutes assumed as 39 instead of 38, and transit over T. III as recorded over T. IV.

(123) 96. Transit over middle thread assumed as at $39^s.5$ instead of $29^s.5$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
ZONE 125. AUGUST 2. C. $D_0 = -5° 20' 0''$.																		
									h. m. s.	s.	s.		r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	51.	6.5	22.	38.	. .	8.3	23.7	16 32 37.39	−35.00	. .	IV. 3	33.325	−26 31.59	− 8.75	−0.87	. . . .	− 5 46 41.21
2	8	. .	. .	43.	59.7	. .	. .	. .	39 58.69	35.03	. .	IV. 3	23.412	36 53.55	7.58	1.24	. . . .	5 57 2.37
3	8	. .	. .	. .	3.	. .	. .	46.7	40 1.07	35.03	. .	VII. 2	11.934	48 54.78	7.58	1.69	. . . .	6 9 4.05
4	9	. .	. .	. .	2.	18.	31.	. .	44 1.25	35.05	. .	IV. 3	25.415	34 47.87	6.93	1.17	. . . .	5 54 55.97
5	7	. .	. .	. .	. .	. .	. .	37.	44 50.62	35.05	. .	VII. 4	47.437	11 43.60	6.70	0.32	. . . .	5 31 50.62
6	7	. .	. .	55.	11.	25.8	41.5	. .	47 10.36	35.06	. .	IV. 3	26.068	34 6.77	6.42	1.15	. . . .	5 54 14.34
7	8	. .	. .	. .	. .	39.	. .	9.6	16 48 23.27	−35.07	. .	V. 3	27.634	−32 28.82	− 6.22	−1.09	. . . .	− 5 52 36.13
ZONE 126. AUGUST 5. C. $D_0 = -4° 2' 30''$.																		
1	7	. .	39.2	54.3	. .	24.3	40.7	. .	16 45 9.37	−36.68	. .	IV. 2	9.998	−50 56.12	− 8.20	−1.77	. . . .	− 4 53 36.09
2	7	. .	. .	46.	1.5	. .	. .	. .	51 1.33	36.70	. .	IV. 4	55.088	3 43.97	7.21	0.04	. . . .	4 6 21.22
3	8.9	. .	33.2	. .	5.5	19.8	35.3	. .	55 4.20	36.72	. .	IV. 3	38.845	20 45.06	6.51	0.65	. . . .	4 23 22.22
4	7	. .	21.4	. .	53.	7.7	. .	. .	16 57 52.27	36.73	. .	IV. 2	14.946	45 45.48	6.03	1.57	. . . .	4 48 23.08
5	9.10	. .	33.	. .	. .	. .	. .	. .	17 0 4.03	36.74	. .	II. 3	37.970	21 39.32	5.66	0.68	. . . .	4 24 15.66
6	8	. .	. .	. .	. .	59.	15.2	. .	0 43.98	36.75	. .	V. 4	53.882	4 59.40	5.55	0.08	. . . .	4 7 35.03
7	7	. .	53.5	8.8	24.4	. .	55.	. .	4 23.92	36.76	. .	IV. 3	35.242	24 31.26	4.90	0.79	. . . .	4 27 6.95
8	9	. .	. .	. .	. .	. .	. .	49.?	5 2.70	36.76	. .	VII. 4	48.52?	10 35.69	4.79	0.28	. . . .	4 13 10.76
9	8	. .	. .	3.2	18.2	33.2	. .	. .	7 18.03	36.77	. .	IV. 4	43.622	15 43.00	4.39	0.47	. . . .	4 18 17.86
10	7.8	. .	8.3	23.8	39.2	. .	. .	. .	11 39.12	36.79	. .	IV. 4	52.822	6 5.93	3.62	0.12	. . . .	4 8 39.67
11	8.9	. .	19.7	35.	51.7	. .	. .	. .	13 50.72	36 80	. .	IV. 3	23.132	37 11.01	3.24	1.26	. . . .	4 39 45.51
12	8	. .	. .	51.	6.3	. .	. .	. .	17 15 6.00	−36.81	. .	IV. 3	27.431	−32 41.36	− 3.01	−1.09	. . . .	− 4 35 15.40
ZONE 127. AUGUST 20. P. $D_0 = -25° 48' 0''$.																		
1	7	. .	. .	. .	. .	50.	. .	. .	18 15 32.69	−42.41	−1.38	V. 2	17.910	−42 39.53	−23.50	−4.27	18 14 48.90	−26 31 7.39
2	9	. .	. .	. .	. .	. .	37.	. .	16 2.48	42.41	1.38	VI. 2	15.263	45 25.78	23.41	4.53	15 18.69	26 33 53.72
3	9	. .	. .	. .	. .	22.	. .	. .	18 4.86	42.42	1.21	V. 4	47.830	11 18.85	23.07	1.18	17 21.23	25 59 43.10
4	6	. .	. .	. .	7.	. .	. .	. .	19 5.84	42.42	1.44	IV. 1	6.504	54 34.39	22.90	5.46	18 21.98	26 43 2.75
5	7	. .	45.	3.	21.	. .	. .	. .	20 19.94	42.43	1.41	IV. 1	9.220	51 43.89	22.70	5.16	19 36.10	40 11.75
6	9	. .	. .	. .	. .	. .	54.	. .	20 19.43	42.43	1.42	VI. 1	8.510	52 28.78	22.70	5.24	19 35.58	40 56.72
7	9	. .	. .	. .	. .	. .	. .	7.	21 15.54	42.43	1.24	VII. 4	41.093	18 20.93	22.55	1.86	20 31.87	6 45.34
8	8	. .	2.	20.	38.3	. .	. .	. .	23 37.05	42.44	1.37	IV. 2	13.730	47 1.87	22.15	4.68	22 53.24	35 28.70
9	9	. .	. .	12.	30.	. .	. .	. .	24 29.20	42.45	1.29	IV. 3	31.004	28 57.01	22.00	2.90	23 45.46	17 21.91
10	7	21.	38.3	55.7	13.5	. .	47.	. .	28 12.69	42.47	1.32	IV. 3	24.440	35 49.05	21.39	3.60	27 28.90	24 14.04
11	8.9	21.3	38.3	55.5	. .	. .	. .	. .	33 12.78	42.49	1.32	III. 3	22.933	37 22.98	20.56	3.75	32 28.97	25 47.29
12	9.10	. .	. .	. .	39.	. .	. .	. .	33 38.19	42.49	1.31	IV. 3	23.760	36 31.46	20.49	3.66	32 54.39	24 55.61
13	7.8	. .	33.	50.3	8.	. .	. .	. .	35 7.40	42.50	1.30	IV. 3	26.887	33 15.26	20.24	3.33	34 23.60	26 21 38.83
14	7	. .	. .	. .	11.3	28.	. .	. .	36 10.95	42.50	1.17	V. 4	51.087	7 54.72	20.06	0.85	35 27.28	25 56 15.63
15	9	. .	. .	. .	. .	49.	. .	. .	37 31.66	42.51	1.38	V. 1	11.800	49 2.01	19.84	4.89	36 47.77	26 37 26.74
16	9	. .	. .	. .	37.	. .	. .	. .	38 36.24	42.52	1.30	IV. 3	26.487	33 40.54	19.66	3.37	37 52.42	22 3.57
17	8	. .	. .	. .	. .	. .	51.	. .	39 16.72	42.52	1.22	VI. 4	40.323	19 9.67	19.55	1.94	38 32.98	7 31.16
18	9	. .	. .	. .	. .	37.	. .	. .	40 19.78	42.52	1.24	V. 3	35.707	24 2.22	19.38	2.41	39 36.02	12 24.01
19	8	. .	. .	. .	. .	. .	. .	24.	40 32.20	42.53	1.35	VII. 2	15.220	45 28.29	19.35	4.54	39 48.32	33 52.18
20	8	. .	. .	. .	. .	. .	. .	16.	41 24.54	42.53	1.21	VII. 4	41.140	18 17.98	19.20	1.86	40 40.80	6 39.04
21	9	. .	. .	. .	. .	55.	. .	. .	42 37.79	42.54	1.24	V. 4	36.803	22 50.46	19.00	2.30	41 54.01	11 11.76
22	7	. .	. .	5.5	23.	40.	. .	. .	18 44 22.44	−42.55	−1.35	IV. 2	15.400	−45 17.24	−18.71	−4.52	18 43 38.54	−26 33 40.47

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847. h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

Aug. 2. Sweeping for Iris.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 125	Aug. 2,	16 30	44 41 91.2	87.3	84.7	99.8	59.4	90.6	85.50[a]	30.146	78.5	75.0	76.5	75.8	75.5
		16 48	. .	. .	. .	. .	. .	. .	. .	30.144	78.0	72.8			
Zone 126	Aug. 5,	16 40	43 24 66.1	62.1	62.0	48.1	50.3	65.9	59.08	29.744	. .	. .	73.8	72.7	74.0
		16 45	. .	. .	. .	. .	. .	. .	. .	. .	75.7	71.0			
		17 15	. .	. .	. .	. .	. .	. .	. .	29.748	74.8	68.8			
Zone 127	Aug. 20,	18 15	65 9 66.3	62.2	63.7	50.5	52.6	65.4	60.12	30.054	70.2	63.5	71.5	71.0	72.0
		19 29	. .	. .	. .	. .	. .	. .	. .	30.056	68.4	60.2			

[a] Corr. for runs +0.″08.

ZONE 127. AUGUST 20. P. $D_0 = -25° 48' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	2.3	. .	6.7	24.3	42.	58.5	. .	. .	18 46 41.27	−42.56	−1.32	IV.	2	20.212	−40 15.19	−18.33	−4.02	18 45 57.39	−26 28 37.54
24	9	. .	. .	. .	. .	. .	49.	. .	47 14.72	42.56	1.21	VI.	4	40.580	18 53.48	18.24	1.91	46 30.95	7 13.63
25	8	38.7	55.5	13.	. .	. .	. .	. .	50 30.13	42.58	1.29	III.	3	25.260	34 57.15	17.70	3.49	49 46.26	23 18.34
26	8	. .	. .	. .	. .	9.	. .	. .	50 51.64	42.58	1.38	V.	1	7.705	53 19.12	17.64	5.32	50 7.68	41 42.08
27	8	. .	. .	. .	. .	59.5	16.	. .	51 41.91	42.58	1.28	V.	3	25.647	34 33.43	17.50	3.46	50 58.05	22 54.39
28	9.8	. .	. .	. .	9.	. .	43.3	. .	53 8.69	42.59	1.23	IV.	3	35.435	24 19.21	17.27	2.44	52 24.87	26 12 38.92
29	7.8	. .	. .	. .	. .	. .	27.	. .	53 52.83	42.59	1.13	VI.	4	53.415	5 28.62	17.14	0.62	53 9.11	25 53 46.38
30	9	. .	. .	. .	. .	. .	. .	44.	54 52.49	42.60	1.22	VII.	3	37.350	22 19.47	16.98	2.25	54 8.67	26 10 38.70
31	7	. .	. .	. .	39.5	. .	12.7	. .	56 38.52	42.61	1.28	IV.	3	27.080	33 3.27	16.70	3.31	55 54.63	21 23.28
32	8	. .	. .	. .	. .	. .	5.7	. .	57 31.23	42.61	1.29	VI.	2	20.670	39 46.32	16.55	3.97	56 47.33	28 6.84
33	8	. .	. .	49.	6.5	23.	. .	. .	59 5.92	42.62	1.22	IV.	3	34.523	25 16.36	16.29	2.53	58 22.08	26 13 35.18
34	7	. .	. .	. .	. .	. .	. .	14.7	18 59 23.38	42.62	1.13	VII.	4	51.470	7 30.27	16.24	0.81	18 58 39.63	25 55 47.32
35	8	. .	. .	26.5	. .	. .	. .	. .	19 1 43.65	42.63	1.38	III.	1	8.515	52 27.84	15.86	5.24	19 0 59.64	26 40 48.94
36	8	. .	. .	. .	26.	. .	. .	. .	2 25.49	42.64	1.19	IV.	3	39.000	20 35.40	15.75	2.08	1 41.66	8 53.23
37	8	. .	. .	. .	. .	. .	5.	. .	2 30.76	42.64	1.16	VI.	4	44.850	14 25.54	15.74	1.48	1 46.96	26 2 42.76
38	8	. .	. .	55.5	. .	. .	. .	. .	4 12.50	42.64	1.12	III.	4	52.400	6 32.58	15.46	0.72	3 28.74	25 54 48.76
39	5.6	. .	. .	26.	43.	0.	. .	. .	4 42.78	42.65	1.20	IV.	3	38.745	20 51.39	15.38	2.11	3 58.93	26 9 8.88
40	7	. .	7.5	24.7	42.	. .	. .	. .	7 41.75	42.66	1.11	IV.	4	51.913	7 2.93	14.89	0.77	6 57.98	25 55 18.59
41	8	30.5	47.	4.7	. .	. .	. .	. .	9 21.70	42.67	1.20	III.	3	36.620	23 4.39	14.63	2.32	8 37.83	26 11 21.34
42	7	. .	. .	54.	. .	. .	. .	. .	10 11.08	42.68	1.25	III.	3	28.060	32 1.40	14.49	3.21	9 27.15	20 19.10
43	8	. .	. .	. .	30.5	. .	4.	. .	10 29.72	42.68	1.24	IV.	3	29.870	30 8.10	14.44	3.01	9 45.80	18 25.55
44	7	22.	39.	56.3	. .	. .	. .	. .	13 13.52	42.69	1.28	III.	2	22.260	38 6.47	14.01	3.81	12 29.55	26 24.29
45	9	. .	. .	. .	. .	40.5	. .	. .	13 23.21	42.69	1.28	V.	2	21.493	38 54.85	13.98	3.89	12 39.24	27 12.72
46	9	. .	4.	. .	. .	. .	. .	. .	16 38.44	42.71	1.17	II.	4	39.696	19 48.99	13.46	2.00	15 54.56	8 4.45
47	7	20.	36.7	54.3	. .	. .	. .	. .	18 11.50	42.72	1.33	III.	2	12.470	48 20.89	13.21	4.82	17 27.45	26 36 38.92
48	7.8	. .	. .	. .	. .	. .	51.	. .	18 16.85	42.72	1.08	VI.	4	54.630	4 12.38	13.20	0.50	17 33.05	25 52 26.08
49	7	. .	46.	3.5	21.	. .	. .	. .	20 20.49	42.73	1.19	IV.	3	36.080	23 38.63	12.87	2.37	19 36.57	26 11 53.87
50	8	. .	. .	. .	. .	. .	. .	12.	20 20.48	42.73	1.19	VII.	3	36.110	23 37.13	12.87	2.37	19 36.56	11 52.37
51	8.9	. .	. .	. .	. .	. .	. .	0.5	21 9.05	42.73	1.16	VII.	3	41.487	17 59.91	12.74	1.82	20 25.16	6 14.47
52	7	. .	. .	. .	49.5	. .	23.	. .	22 48.94	42.74	1.14	IV.	4	44.940	14 20.21	12.48	1.47	22 5.06	2 34.16
53	7	. .	. .	7.5	25.	41.5	. .	. .	24 24.37	42.75	1.23	IV.	3	27.863	32 14.01	12.23	3.23	23 40.39	20 29.47
54	7	45.	2.	19.	36.8	. .	. .	. .	27 36.29	42.77	1.19	IV.	3	34.447	25 21.19	11.73	2.56	26 52.33	13 35.48
55	7	. .	. .	. .	. .	. .	. .	10.	19 29 18.61	−42.78	−1.13	VII.	3	46.473	−12 47.19	−11.45	−1.31	19 28 34.70	−26 0 59.95

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

ZONE 128. AUGUST 26. P. $D_0 = -27° 40' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	32.3	49.2	7.3	25.5	. .	. .	. .	18 19 24.64	−47.52	−0.88	IV.	2	13.763	−46 59.72	−30.64	−4.88	18 18 36.24	−28 28 5.24
2	9	. .	. .	28.	. .	. .	. .	. .	20 45.35	47.53	0.68	III.	3	36.480	23 13.22	30.42	2.25	19 57.14	4 15.89
3	7	. .	40.	57.3	15.3	32.5	. .	. .	22 14.86	47.54	0.66	V.	3	37.863	21 46.92	30.16	2.09	21 26.66	2 49.17
4	8	. .	15.5	33.3	51.2	. .	. .	. .	24 50.60	47.55	0.74	IV.	3	28.610	31 27.28	29.70	3.14	24 2.31	12 30.12
5	7.8	. .	. .	. .	33.3	. .	. .	. .	25 32.30	47.56	0.87	IV.	2	14.560	46 9.90	29.58	4.78	24 43.87	27 14.26
6	8	. .	. .	. .	. .	23.	. .	. .	26 5.47	47.56	0.72	V.	3	30.397	29 35.53	29.48	2.95	25 17.19	10 37.96
7	7	. .	. .	. .	. .	15.5	. .	. .	26 57.88	47.56	0.85	V.	2	15.442	45 14.60	29.33	4.69	26 9.47	28 26 18.62
8	8	. .	. .	. .	21.	. .	. .	. .	28 20.68	47.57	0.56	IV.	4	49.252	9 49.98	29.10	0.78	27 32.55	27 50 49.86
9	8.9	. .	. .	. .	. .	19.	. .	. .	29 1.50	47.57	0.68	V.	3	34.490	25 18.68	28.97	2.49	28 13.25	28 6 20.14
10	7	. .	59.5	. .	35.5	. .	. .	27.	30 34.60	47.58	0.79	IV.	3	22.987	37 20.03	28.70	3.80	29 46.23	18 22.53
11	7	. .	50.7	7.2	27.	. .	. .	. .	32 25.55	47.59	0.83	IV.	2	18.340	42 12.73	28.39	4.34	31 37.13	23 15.46
12	8	. .	. .	. .	. .	. .	21.	. .	32 46.09	47.59	0.68	VI.	3	35.280	24 29.25	28.33	2.40	31 57.82	28 5 29.98
13	8	. .	. .	. .	18.	. .	. .	. .	34 17.76	47.60	0.52	IV.	4	52.674	6 15.27	28.07	0.41	33 29.64	27 47 13.75
14	8	. .	. .	. .	. .	. .	42.	. .	35 6.93	47.60	0.81	VI.	2	19.140	41 22.40	27.94	4.24	34 18.52	28 22 24.58
15	7	. .	. .	. .	31.	. .	. .	. .	36 30.09	47.61	0.80	IV.	2	19.475	41 1.43	27.70	4.20	35 41.68	22 3.33
16	8	. .	. .	. .	. .	. .	. .	32.5	36 39.96	47.61	0.75	VII.	3	25.710	34 29.48	27.67	3.49	35 51.60	15 30.64
17	7	. .	. .	40.	59.3	16.	. .	. .	38 58.08	47.63	0.80	IV.	2	20.590	45 5.09	27.28	4.69	38 9.65	28 26 7.06
18	7.8	. .	5.	22.7	40.5	. .	. .	. .	40 40.03	47.63	0.56	IV.	4	46.875	12 18.85	27.00	1.07	39 51.84	27 53 16.92
19	8	. .	. .	59.	17.	. .	. .	. .	43 16.25	47.65	0.79	IV.	2	19.430	41 4.31	26.58	4.21	42 27.81	28 22 5.10
20	7.8	. .	. .	. .	21.5	38.	. .	. .	44 20.53	47.65	0.77	IV.	2	22.207	38 9.99	26.40	3.90	43 32.11	28 19 10.29
21	6.7	. .	. .	. .	. .	. .	. .	23.5	44 31.22	47.65	0.58	VII.	3	44.325	15 1.92	26.37	1.33	43 42.99	27 55 59.62
22	8	. .	. .	. .	. .	. .	25.3	. .	45 50.44	47.66	0.62	VI.	4	39.673	19 50.31	26.15	1.89	45 2.16	28 0 48.35
23	7	. .	. .	. .	21.5	39.	. .	. .	47 21.03	47.67	0.77	IV.	3	22.397	37 57.25	25.91	3.87	46 32.59	18 57.03
24	8	. .	. .	. .	30.	46.5	. .	. .	48 29.04	47.68	0.76	IV.	3	23.047	37 16.27	25.71	3.80	47 40.60	28 18 15.78
25	8.9	. .	49.	6.2	. .	. .	. .	. .	50 23.71	47.69	0.53	III.	4	49.287	9 47.79	25.40	0.81	49 35.49	27 50 44.00
26	9	. .	. .	. .	51.3	. .	. .	. .	50 50.88	47.69	0.57	IV.	4	44.217	15 5.75	25.33	1.39	50 2.62	27 56 2.47
27	7.8	. .	. .	. .	. .	41.	58.	. .	51 23.22	47.69	0.73	V.	3	26.143	34 2.32	25.23	3.44	50 34.80	28 15 0.99
28	7.8	. .	. .	. .	. .	. .	. .	50.	51 57.78	47.70	0.53	VII.	4	49.220	9 51.24	25.14	0.79	51 9.55	27 50 47.17
29	8	. .	37.	54.7	. .	. .	. .	. .	55 11.99	47.71	0.57	III.	4	44.415	14 53.32	24.62	1.36	54 23.71	27 55 49.30
30	8	. .	. .	22.	. .	. .	. .	. .	56 39.40	47.72	0.77	III.	2	21.607	38 47.39	24.39	3.97	55 50.91	28 19 45.75
31	9	. .	. .	. .	. .	17.	. .	. .	56 59.41	47.72	0.78	V.	2	19.493	41 0.36	24.33	4.22	56 10.91	28 21 58.91
32	4.5	. .	. .	. .	23.	40.	57.5	. .	18 58 22.64	47.73	0.55	IV.	4	47.040	12 8.57	24.10	1.05	57 34.36	27 53 3.72
33	9	. .	32.	. .	8.	. .	. .	. .	19 0 7.28	47.74	0.58	IV.	4	43.815	15 30.77	23.82	1.38	18 59 18.96	27 56 25.97
34	8	26.2	43.	1.2	19.2	. .	. .	. .	2 18.44	47.75	0.76	IV.	2	21.940	38 26.55	23.48	3.92	19 1 29.93	28 19 23.95
35	8	. .	11.	. .	47.3	. .	. .	. .	3 46.32	47.76	0.80	IV.	2	18.393	42 9.40	23.24	4.37	2 57.76	23 7.01
36	9	. .	. .	. .	. .	. .	3.	. .	4 28.01	47.77	0.71	VI.	3	27.190	32 56.82	23.13	3.32	3 39.53	28 13 53.27
37	8.9	. .	. .	1.	. .	. .	. .	. .	6 18.29	47.78	0.49	III.	4	53.047	5 51.88	22.85	0.33	5 30.02	27 46 45.06
38	8	. .	. .	. .	7.	. .	. .	. .	7 6.38	47.78	0.65	IV.	3	34.074	25 44.47	22.72	2.51	6 17.95	28 6 39.70
39	7.8	. .	. .	0.	. .	35.	. .	. .	10 17.40	47.80	0.86	III.	1	11.960	48 51.40	22.24	5.13	9 28.74	29 48.77
40	8	. .	28.	45.7	4.	. .	. .	. .	12 3.16	47.81	0.74	IV.	3	24.905	35 19.61	21.94	3.59	11 14.61	16 15.14
41	8	6.	23.3	41.	. .	. .	. .	. .	14 58.30	47.83	0.64	III.	3	37.120	22 33.02	21.48	2.17	14 9.83	3 26.67
42	6	5.	22.3	40.3	58.3	15.	. .	. .	15 57.50	47.83	0.68	IV.	3	31.770	28 8.89	21.33	2.79	15 8.99	28 9 3.01
43	9	. .	. .	. .	. .	32.	. .	. .	17 14.58	47.84	0.53	V.	4	49.543	9 31.61	21.14	0.75	16 26.21	27 50 23.50
44	7	. .	. .	. .	21.	. .	55.3	. .	21 20.70	47.86	0.51	IV.	4	55.347	3 27.87	20.50	0.08	20 32.33	27 44 18.45
45	8	. .	. .	. .	. .	56.3	. .	. .	22 38.82	47.87	0.63	V.	4	39.700	19 48.80	20.30	1.88	21 50.32	28 0 40.98
46	7.8	. .	. .	. .	43.	. .	. .	. .	23 42.44	47.88	0.66	IV.	3	36.910	22 46.44	20.13	2.19	22 53.90	3 38.76
47	7	. .	. .	. .	. .	. .	. .	23.	23 30.23	47.88	0.89	VII.	1	10.377	50 31.52	20.16	5.33	22 41.46	31 27.01
48	7	. .	. .	. .	. .	. .	. .	0.	24 7.41	47.88	0.77	VII.	3	23.133	37 11.26	20.07	3.80	23 18.76	18 5.13
49	9	. .	. .	. .	. .	. .	. .	52.	19 24 59.38	−47.89	−0.80	VII.	3	20.535	−39 54.34	−19.93	−4.11	19 24 10.69	−28 20 43.38

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

Aug. 26, 21[h] 44[m]. Moon too bright.

(128) 17. Micrometer reading assumed as 15[r].590 instead of 20[r].590.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 128	Aug. 26,	18 15	67 2 33.0	28.5	29.5	17.3	23.0	31.6	27.15[a]	30.132	72.0	68.0			
		18 50	. .	. .	. .	. .	. .	. .	. .	30.142	72.0	67.5			
		19 35	. .	. .	. .	. .	. .	. .	. .	30.146	71.0	64.5			
		20 0	. .	. .	. .	. .	. .	. .	. .	30.140	70.8	64.2			
		20 59	. .	. .	. .	. .	. .	. .	. .	30.136	70.2	63.4			
		21 29	. .	. .	. .	. .	. .	. .	. .	30.134	69.5	62.5			
		21 44	. .	. .	. .	. .	. .	. .	. .	. .	. .	61.5			

[a] Corr. for runs $= -0''.31$.

ZONE 128. AUGUST 26. P. $D_0 = -27° 40' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
50	8	. .	. .	46.	. .	20.3	. .	. .	19 27 3.08	−47.90	−0.60	V.	4	43.010	−16 21.19	−19.62	−1.48	19 26 14.58	−27 57 12.29
51	7.8	. .	. .	11.	28.5	. .	. .	. .	28 28.25	47.91	0.54	IV.	4	50.255	8 47.08	19.41	0.66	27 39.80	27 49 37.15
52	9	. .	. .	37.	. .	. .	. .	. .	29 54.35	47.92	0.68	III.	3	33.495	26 20.48	19.17	2.58	29 5.75	28 7 12.23
53	8.9	. .	. .	. .	. .	20.	. .	. .	30 2.52	47.92	0.63	V.	3	40.235	19 17.18	19.16	1.81	29 13.97	28 0 8.15
54	8	. .	. .	13.	. .	. .	. .	. .	31 30.30	47.92	0.56	III.	4	47.615	11 32.52	18.93	0.95	30 41.82	27 52 22.40
55	7	. .	. .	2.3	20.3	. .	. .	12.	32 19.68	47.93	0.66	IV.	3	38.360	21 15.73	18.81	2.02	31 31.09	28 2 6.56
56	7	1.3	18.7	36.3	54.	11.3	. .	. .	35 53.63	47.95	0.63	IV.	4	40.707	18 45.76	18.26	1.76	35 5.05	27 59 35.78
57	7.8	. .	. .	42.	. .	. .	. .	. .	36 59.35	47.96	0.67	III.	3	36.407	23 17.86	18.10	2.25	36 10.72	28 4 8.21
58	7	. .	. .	. .	. .	. .	. .	40.	36 47.86	47.96	0.50	VII.	4	54.503	4 19.96	18.13	0.18	35 59.40	27 45 8.27
59	8	32.	49.5	7.3	25.	42.	. .	. .	37 24.48	47.96	0.69	IV.	3	34.895	24 52.84	18.04	2.43	36 35.83	28 5 43.31
60	9	. .	. .	43.	. .	. .	. .	. .	41 0.33	47.98	0.64	III.	3	39.785	19 45.73	17.49	−1.86	40 11.71	28 0 35.08
61	7	. .	46.	3.	. .	. .	. .	. .	42 20.56	47.99	0.53	III.	4	56.133	2 38.46	17.29	+0.01	41 32.04	27 43 25.74
62	7	. .	. .	. .	44.	1.	18.5	. .	42 43.66	47.99	0.55	IV.	4	49.085	10 0.39	17.22	−0.76	41 55.12	27 50 48.37
63	7	. .	. .	. .	18.	. .	. .	. .	44 16.90	48.00	0.91	IV.	1	10.340	50 33.65	16.98	5.33	43 27.99	28 31 25.96
64	8.9	. .	. .	. .	35.	. .	. .	. .	45 34.65	48.01	0.58	IV.	4	47.520	11 38.60	16.78	0.96	44 46.06	27 52 26.34
65	8	. .	35.	52.3	. .	. .	. .	. .	48 9.83	48.02	0.65	III.	4	39.493	20 2.03	16.39	1.90	47 21.16	28 0 50.32
66	9	19.	. .	54.	. .	. .	. .	. .	50 11.32	48.04	0.70	III.	3	32.910	26 56.98	16.07	2.65	49 22.58	7 45.70
67	8	56.	. .	30.7	. .	. .	. .	. .	51 48.13	48.05	0.67	III.	3	37.730	21 54.69	15.82	2.09	50 59.41	2 42.60
68	7	47.7	5.	23.	. .	. .	. .	. .	53 40.29	48.06	0.85	III.	2	17.040	43 33.94	15.53	4.53	52 51.38	24 24.00
69	4	. .	. .	57.	15.3	32.3	. .	. .	54 14.60	48.06	0.71	IV.	3	33.300	26 33.15	15.45	2.60	53 25.83	7 21.20
70	7	. .	26.3	44.	. .	. .	. .	. .	56 1.40	48.07	0.73	III.	3	30.960	28 59.33	15.17	2.88	55 12.60	9 47.38
71	7	. .	18.	35.7	54.	10.5	. .	. .	19 56 53.11	48.08	0.77	IV.	3	27.020	33 6.98	15.02	3.34	56 4.26	13 55.34
72	7	49.	6.	23.3	. .	. .	. .	. .	20 0 41.15	48.10	0.84	III.	2	18.390	42 9.40	14.45	4.38	19 59 52.21	22 58.23
73	7	. .	. .	. .	57.5	14.	. .	. .	0 56.48	48.10	0.85	IV.	2	18.090	42 28.29	14.41	4.43	20 0 7.53	23 17.13
74	8	. .	. .	. .	. .	. .	. .	2.	1 9.55	48.11	0.72	VII.	3	32.000	27 54.83	14.38	2.76	0 20.72	8 41.97
75	8	. .	. .	. .	. .	. .	. .	34.	1 41.56	48.11	0.72	VII.	3	32.725	27 9.35	14.29	2.68	0 52.73	7 56.32
76	9	. .	45.5	. .	21.7	. .	. .	. .	4 20.78	48.13	0.84	IV.	2	19.540	40 57.35	13.90	4.25	3 31.81	21 45.50
77	7.8	21.	38.	55.3	13.7	. .	. .	. .	8 13.02	48.15	0.70	IV.	3	36.895	22 47.39	13.30	2.19	7 24.17	28 3 32.88
78	8	. .	54.	. .	. .	. .	. .	. .	11 28.89	48.17	0.58	II.	4	51.063	7 56.10	12.81	0.53	10 40.14	27 48 39.44
79	7	. .	52.	9.7	. .	. .	. .	. .	12 26.94	48.17	0.58	III.	4	51.430	7 33.40	12.64	0.49	11 38.19	27 48 16.53
80	7.8	12.	29.5	47.3	. .	. .	. .	. .	14 4.55	48.18	0.78	III.	3	28.855	31 11.40	12.43	3.13	13 15.59	28 11 56.96
81	8	. .	13.5	. .	. .	. .	. .	. .	15 48.84	48.20	0.93	II.	2	12.630	48 10.48	12.17	5.09	14 59.71	28 57.74
82	8	. .	. .	. .	59.	. .	. .	. .	16 57.96	48.20	0.94	IV.	2	12.890	47 54.53	11.99	5.05	16 8.82	28 28 41.57
83	7	. .	. .	. .	. .	. .	43.	. .	19 8.27	48.22	0.58	VI.	4	53.435	5 27.36	11.66	0.25	19 19.47	27 46 9.27
84	7	. .	. .	. .	23.	. .	57.	. .	21 22.49	48.23	0.60	IV.	4	51.240	7 45.31	11.34	0.51	20 33.66	27 48 27.16
85	7	. .	. .	50.	8.	. .	. .	. .	23 7.31	48.24	0.84	IV.	3	26.055	34 7.58	11.09	3.46	22 18.23	28 14 52.13
86	6.7	. .	. .	. .	. .	45.3	. .	. .	23 27.64	48.24	1.01	V.	1	7.360	53 40.91	11.04	5.73	22 38.39	28 34 27.68
87	6	. .	. .	. .	. .	. .	5.	. .	26 30.29	48.26	0.57	VI.	4	55.100	3 42.85	10.60	0.07	25 41.46	27 44 23.52
88	8.9	. .	. .	. .	. .	. .	. .	5.	27 12.78	48.27	0.65	VII.	4	47.883	11 14.89	10.50	0.90	26 23.86	27 51 56.29
89	8.9	. .	. .	31.	. .	. .	. .	. .	29 48.40	48.28	0.89	III.	2	21.820	38 33.89	10.13	3.97	28 59.23	28 19 17.99
90	6.7	48.3	5.7	23.5	. .	. .	. .	. .	31 40.80	48.30	0.86	III.	3	26.443	33 42.98	9.86	3.42	30 51.64	14 26.26
91	6	. .	. .	4.	22.	39.	. .	. .	32 21.41	48.30	0.79	IV.	3	33.745	26 5.05	9.78	2.55	31 32.32	6 47.38
92	6	. .	. .	. .	19.	35.5	. .	. .	33 17.88	48.31	1.00	IV.	1	10.233	50 40.30	9.64	5.38	32 28.57	28 31 25.32
93	7.8	. .	. .	. .	. .	. .	. .	32.	33 39.87	48.31	0.60	VII.	4	54.804	4 0.91	9.59	0.10	32 50.96	27 44 40.60
94	7	. .	. .	. .	41.5	. .	. .	. .	35 40.50	48.32	0.97	IV.	2	14.480	46 14.91	9.31	4.85	34 51.21	28 26 59.07
95	7	. .	. .	. .	. .	42.	. .	. .	36 24.53	48.33	0.75	V.	4	41.673	17 45.05	9.20	1.62	35 35.45	27 58 25.87
96	5.6	. .	. .	. .	. .	19.	36.	. .	37 1.43	48.33	0.62	V.	4	52.375	6 34.09	9.12	0.37	36 12.48	47 13.58
97	7	. .	. .	11.	28.5	. .	. .	. .	38 28.28	48.34	0.63	IV.	4	53.013	5 54.01	8.91	−0.30	37 39.31	46 33.22
98	6	. .	. .	. .	. .	. .	8.3	. .	20 38 33.60	−48.34	−0.61	VI.	4	55.800	− 2 58.84	− 8.90	+0.02	20 37 44.65	−27 43 37.72

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(128) 83. Minutes of transit assumed as 20 instead of 19.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 128. AUGUST 26. P. $D_0 = -27° 40' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	7	. .	. .	. .	. .	. .	14.3	. .	20 39 39.27	−48.35	−0.90	VI.	3	23.137	−37 11.07	− 8.75	−3.82	20 38 50.02	−28 17 53.64
100	7	. .	. .	37.	55.	. .	. .	. .	41 54.46	48.36	0.72	IV.	4	44.783	14 30.06	8.44	1.27	41 5.38	27 55 9.77
101	9	. .	. .	. .	. .	. .	30.7	. .	41 55.85	48.36	0.75	VI.	4	40.903	18 33.03	8.44	1.71	41 6.74	59 13.18
102	6	. .	. .	. .	24.	41.3	. .	. .	43 23.81	48.37	0.65	IV.	4	51.580	7 23.94	8.24	0.47	42 34.79	27 48 2.65
103	6	. .	. .	. .	. .	. .	. .	16.	43 23.21	48.37	1.04	VII.	1	8.513	52 28.53	8.24	5.59	42 33.80	28 33 12.36
104	6	3.3	. .	38.3	. .	. .	. .	. .	45 55.79	48.38	1.02	III.	2	12.225	48 36.14	7.90	5.14	45 6.39	29 19.18
105	8	. .	. .	7.5	26.	. .	. .	. .	46 24.94	48.39	1.02	IV.	2	11.777	49 4.39	7.84	5.19	45 35.53	29 47.42
106	8	38.5	. .	13.3	. .	. .	. .	. .	49 30.81	48.41	0.94	III.	2	21.990	38 23.28	7.42	3.95	48 41.46	28 19 4.65
107	7.8	19.	36.	. .	11.7	. .	. .	. .	52 11.13	48.43	0.74	IV.	4	44.693	14 35.77	7.07	1.28	51 21.96	27 55 14.12
108	7.8	. .	. .	. .	13.7	. .	. .	. .	53 12.87	48.43	0.94	IV.	3	23.560	36 44.21	6.94	3.76	52 23.50	28 17 24.91
109	7	. .	. .	. .	. .	. .	59.3	. .	53 24.22	48.43	0.99	VI.	2	17.997	42 34.00	6.91	4.43	52 34.80	23 15.34
110	6	. .	. .	45.	3.	20.	. .	. .	55 2.32	48.44	0.95	IV.	2	21.990	38 23.47	6.71	3.95	54 12.93	19 4.13
111	7	. .	. .	. .	. .	31.	. .	. .	56 13.49	48.45	0.85	V.	3	33.153	26 42.51	6.56	2.63	55 24.19	7 21.70
112	7.8	52.3	9.7	27.5	. .	. .	. .	. .	58 44.82	48.47	0.93	III.	3	25.263	34 57.03	6.24	3.56	57 55.42	28 15 36.83
113	6.7	. .	. .	. .	. .	35.	52.3	. .	20 59 17.53	48.47	0.75	V.	4	46.483	12 43.56	6.16	1.05	20 58 28.31	27 53 20.77
114	7	. .	37.	55.	13.5	. .	. .	. .	21 4 12.41	48.50	1.10	IV.	1	10.615	50 16.27	5.56	5.36	21 3 22.81	28 30 57.19
115	5.6	. .	. .	55.3	13.3	30.	. .	. .	5 12.56	48.51	0.94	IV.	3	27.115	33 1.07	5.44	3.35	4 23.11	28 13 39.86
116	7.8	52.5	. .	27.5	. .	. .	. .	. .	9 44.69	48.54	0.75	III.	4	48.600	10 30.81	4.88	0.79	8 55.40	27 51 6.48
117	6 7	59.	16.	33.7	. .	. .	. .	. .	11 51.00	48.55	0.76	III.	4	49.340	9 44.46	4.64	0.70	11 1.69	50 19.80
118	7	. .	. .	. .	. .	18.3	36.	. .	12 1.01	48.55	0.80	V.	4	43.933	15 23.24	4.62	1.33	11 11.66	27 55 59.19
119	7	. .	. .	. .	. .	25.	. .	. .	13 7.41	48.56	1.03	V.	2	19.323	41 11.03	4.50	4.29	12 17.82	28 21 49.82
120	6.7	41.	58.	16.	34.3	. .	. .	. .	19 33.37	48.60	1.05	IV.	2	18.730	41 48.06	3.76	4.37	18 43.72	22 26.19
121	7.8	. .	. .	32.	. .	. .	. .	. .	20 49.42	48.61	1.06	III.	2	17.950	42 36.76	3.63	4.45	19 59.75	28 23 14.84
122	7	. .	. .	. .	. .	27.5	. .	. .	21 10.04	48.61	0.83	V.	4	43.863	15 27.63	3.58	1.34	20 20.60	27 56 2.55
123	7.8	. .	. .	. .	. .	. .	. .	27.	21 34.83	48.61	0.75	VII.	4	51.980	6 58.04	3.55	0.39	20 45.47	47 31.98
124	7	. .	. .	. .	. .	. .	39.	. .	23 4.26	48.62	0.76	VI.	4	51.850	7 7.77	3.38	0.41	22 14.88	27 47 41.56
125	7	. .	56.	14.	. .	. .	. .	. .	25 31.42	48.64	1.15	III.	1	8.623	52 20.99	3.12	5.62	24 41.63	28 32 59.73
126	7	. .	. .	. .	13.	. .	. .	. .	26 11.86	48.64	1.16	IV.	1	7.960	53 2.86	3.05	5.69	25 22.06	33 41.60
127	7.8	. .	. .	. .	. .	26.	. .	. .	27 8.44	48.65	1.05	V.	3	24.300	35 58.09	2.95	3.69	26 18.74	16 34.73
128	7.8	. .	. .	10.	. .	. .	. .	. .	29 27.40	48.66	1.10	III.	3	23.173	37 8.12	2.69	3.83	28 37.64	28 17 44.64
129	6	. .	37.	54.5	12.	29.5	. .	. .	31 11.85	48.67	0.93	IV.	4	41.143	17 59.79	2.52	1.63	30 22.25	27 58 33.94
130	6	18.5	36.	54.	. .	. .	. .	. .	34 11.20	48.69	1.15	III.	2	19.970	41 20.33	2.23	4.31	33 21.36	28 21 56.93
131	7.8	. .	. .	. .	. .	36.	. .	. .	34 18.48	48.69	1.04	V.	3	31.560	28 22.50	2.22	2.81	33 28.75	8 57.53
132	6	57.3	. .	32.2	51.	. .	. .	42.3	39 49.75	48.73	1.23	IV.	2	14.820	45 53.39	1.68	4.83	38 59.79	26 29.90
133	6.7	. .	28.5	45.3	4.2	21.	. .	. .	42 3.33	48.74	1.05	IV.	3	34.420	25 22.88	1.48	2.47	41 13.54	5 56.83
134	7	. .	. .	. .	. .	3.	. .	. .	42 45.51	48.75	1.03	V.	3	38.370	21 15.36	1.41	1.96	41 55.73	1 48.73
135	7	. .	. .	. .	43.	. .	. .	. .	43 42.39	48.75	1.05	IV.	3	34.480	25 19.06	1.33	2.46	42 52.59	5 52.85
136	7	. .	. .	23.	. .	15.5	. .	. .	21 44 40.48	−48.76	−1.02	IV.	3	39.160	−20 25.50	− 1.21	−1.90	21 43 50.70	−28 0 58.61

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(128) 136. Transit over T. VI assumed to have been recorded as over T. V.

ZONE 129. AUGUST 30. C. $D_0 = -25° 47' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	2.	18.6	35.6	. .	19 19 1.34	−50.56	−0.28	IV.	3	34.046	−25 46.16	−24.68	−2.60	19 18 10.50	−26 13 53.44
2	9	. .	. .	10.	27.6	44.2	. .	. .	20 27.02	50.57	0.27	IV.	3	35.928	23 48.04	24.46	2.40	19 36.18	11 54.90
3	9	. .	. .	. .	. .	33.5	50.4	. .	21 16.22	50.57	0.23	V.	4	41.274	18 10.26	24.34	1.85	20 25.42	6 16.45
4	8	. .	. .	38.6	56.2	12.6	30.0	. .	22 55.66	50.58	0.22	IV.	4	44.762	14 31.38	24.10	1.49	22 4.86	2 36.97
5	8	. .	57.	14.3	32.2	48.4	5.5	. .	24 31.33	50.59	0.34	IV.	3	27.682	32 25.44	23.86	3.24	23 40.40	20 32.54
6	9.10	. .	. .	. .	40.3	. .	. .	. .	25 39.93	50.60	0.21	IV.	4	46.089	13 8.27	23.69	1.36	24 49.12	1 13.32
7	8.9	. .	8.7	. .	43.5	0.3	17.4	. .	27 43.06	50.61	0.29	IV.	3	34.395	25 24.46	23.38	2.56	26 52.16	13 30.40
8	9.10	. .	51.1	. .	26.0	. .	. .	. .	29 25.63	50.62	0.21	IV.	4	46.291	12 55.67	23.13	1.34	28 34.80	1 0.14
9	9.10	. .	. .	2.	19.5	36.	. .	. .	34 18.99	50.65	0.21	IV.	4	45.495	13 45.59	22.37	1.42	33 28.13	26 1 49.38
10	9.10	. .	. .	. .	. .	. .	14.2	. .	34 40.05	50.65	0.15	VI.	4	54.010	4 51.19	22.31	0.57	33 49.25	25 52 54.07
11	9	. .	. .	. .	. .	24.5	. .	. .	37 7.34	50.66	0.22	V.	4	45.056	14 12.93	21.93	1.47	36 16.46	26 2 16.33
12	9	. .	. .	. .	. .	12.5	. .	. .	37 55.26	50.67	0.32	V.	3	31.382	28 33.73	21.81	2.86	37 4.27	16 38.40
13	8.9	. .	. .	. .	. .	. .	56.8	13.8	38 22.10	50.67	0.46	VI.	2	11.188	49 41.56	21.72	4.95	37 30.97	26 37 48.23
14	8	. .	. .	. .	. .	39.7	56.1	13.3	39 22.13	50.68	0.21	V.	4	47.784	11 21.73	21.58	1.19	38 31.24	25 59 24.50
15	9	. .	. .	. .	. .	39.5	57.	. .	42 22.34	50.70	0.43	V.	2	16.166	44 29.11	21.10	4.43	41 31.21	26 32 34.64
16	9	. .	. .	10.7	28.5	44.5	. .	. .	44 27.51	50.71	0.43	IV.	2	15.303	45 23.32	20.76	4.52	43 36.37	33 28.60
17	9.10	57.	14.	32.	. .	. .	. .	. .	46 48.73	50.72	0.36	III.	3	25.256	34 57.41	20.39	3.49	45 57.65	23 1.29
18	5	. .	. .	12.2	30.7	47.	3.8	. .	47 29.45	50.73	0.49	IV.	2	7.525	53 31.50	20.27	5.32	46 38.23	41 37.09
19	8	. .	. .	. .	58.7	14.7	31.7	49.	48 57.33	50.73	0.47	V.	2	12.044	48 47.76	20.03	4.87	48 6.13	36 52.66
20	6	. .	. .	22.	40.5	56.6	13.8	. .	50 39.28	50.74	0.46	IV.	3	13.012	47 46.06	19.77	4.77	49 48.08	35 50.60
21	9	. .	. .	3.7	21.4	38.	55.2	. .	52 20.85	50.76	0.27	IV.	2	40.092	19 27.85	19.50	1.98	51 29.82	7 29.33
22	9	. .	10.	27.7	45.5	1 ?	. .	36.	54 44.59	50.77	0.40	IV.	3	21.169	39 14.25	19.12	3.91	53 53.42	27 17.28
23	9	. .	. .	5.	. .	39.	56.5	. .	19 58 22.05	50.79	0.22	IV.	4	47.128	12 3.11	18.55	1.26	57 31.04	0 2.92
24	8	. .	. .	. .	50.7	6.7	23.8	. .	20 0 49.40	50.81	0.48	IV.	2	9.787	51 9.30	18.16	5.09	19 59 58.11	39 12.55
25	9	. .	. .	. .	. .	4.	20.7	38.2	1 40.56	50.81	0.34	V.	3	29.497	30 31.93	18.01	3.05	20 0 55.41	18 32.99
26	9.10	. .	19.2	. .	51.	. .	. .	45.3	4 53.72	50.83	0.42	IV.	2	18.666	41 52.09	17.55	4.18	4 2.47	29 53.82
27	9.10	. .	. .	8.7	. .	. .	. .	. .	8 25.79	50.85	0.38	III.	3	26.142	34 1.75	17.02	3.40	7 34.56	22 2.17
28	8	. .	53.7	11.	29.5	. .	3.1	. .	12 28.40	50.88	0.48	IV.	2	11.850	48 59.81	16.42	4.89	11 37.04	37 1.12
29	8.9	. .	51.3	8.7	27.	43.5	0.7	. .	16 26.10	50.90	0.36	IV.	3	29.255	30 46.86	15.85	3.09	15 34.84	18 45.80
30	8	. .	18.	35.	. .	9.	26.	. .	19 52.00	50.92	0.27	IV.	4	41.524	17 54.65	15.34	1.83	19 0.81	5 51.82
31	9.10	. .	. .	13.7	. .	. .	5.	. .	19 30.74	50.92	0.26	IV.	4	43.349	16 0.25	15.39	1.65	18 39.56	3 57.29
32	9	. .	. .	. .	38.2	. .	12.2	. .	21 37.90	50.94	0.24	IV.	4	45.712	13 31.85	15.07	1.40	20 46.72	1 28.32
33	9	. .	. .	. .	. .	42.	. .	. .	24 24.74	50.95	0.38	V.	3	27.234	32 53.91	14.67	3.29	23 33.41	20 51.87
34	9	. .	. .	46.5	4.	21.	38.	. .	27 3.71	50.97	0.24	IV.	4	47.540	11 37.34	14.29	1.22	26 12.50	59 32.85
35	8	. .	. .	. .	45.	1.5	. .	35.7	28 44.32	50.98	0.30	IV.	3	38.442	21 10.58	14.04	2.15	27 53.04	9 6.77
36	6	25.7	42.9	0.7	18.7	35.	52.	9.	33 17.55	51.01	0.45	IV.	2	16.938	43 40.46	13.38	4.36	32 26.09	31 38.20
37	9	54.2	11.	28.7	46.2	. .	. .	. .	35 45.62	51.02	0.39	IV.	3	26.436	33 43.80	13.03	3.37	34 54.21	21 40.20
38	9.10	. .	. .	. .	. .	. .	18.7	35.	35 43.96	51.02	0.30	VI.	4	38.378	21 11.65	13.03	2.15	34 52.64	9 6.83
39	9.10	. .	. .	. .	. .	39.2	56.5	. .	37 21.96	51.03	0.44	V.	3	18.866	41 38.84	12.79	4.16	36 30.49	29 35.79
40	6.7	22.5	39..	56.2	14.6	31.	48.2	. .	41 13.71	51.06	0.37	IV.	3	28.163	31 55.38	12.24	3.19	40 22.28	19 50.81
41	9.10	. .	. .	. .	38.7	. .	. .	29.6	41 37.95	51.06	0.38	IV.	3	26.602	33 33.27	12.18	3.35	40 46.51	21 28.80
42	7	. .	. .	51.2	9.	26.	43.5	. .	43 8.69	51.07	0.31	IV.	4	39.130	20 24.74	11.97	2.08	42 17.31	8 18.79
43	9	31.	47.5	5.	22.8	. .	. .	. .	46 22.15	51.09	0.31	IV.	4	39.113	20 25.80	11.51	2.08	45 30.75	26 8 19.39
44	9	. .	. .	. .	4.2	21.	38.	. .	51 3.86	51.12	0.23	IV.	4	50.041	9 0.38	10.85	0.97	50 12.51	25 56 52.20
45	8.9	. .	. .	38.7	56.	12.6	30.	. .	20 58 55.58	51.17	0.33	IV.	3	37.894	21 44.72	9.76	2.20	20 58 4.08	26 9 36.68
46	9	32.5	. .	. .	. .	40.7	57.5	. .	21 6 23.54	51.21	0.23	IV.	4	52.211	6 44.42	8.77	0.75	21 5 32.10	25 54 33.94
47	7.8	. .	. .	. .	. .	. .	. .	40.	21 6 48.22	−51.21	−0.49	VII.	2	16.779	−43 50.25	− 8.72	−4.37	21 5 56.52	−26 31 43.34

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 129	Aug. 30,	19 20	65 9 61.3	55.3	55.1	44.2	45.4	62.1	53.90[a]	30.156	75.0	72.4	75.5	73.8	73.0
		19 39	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.2			
		20 0	. .	. .	. .	. .	. .	. .	. .	30.154	75.0	71.0			
		20 20	61.9	54.9	56.1	43.9	46.2	61.1	54.02	. .	. .	70.3	73.5	73.0	
		20 41	. .	. .	. .	. .	. .	. .	. .	30.144	72.8	70.0			
		21 0	61.4	55.0	56.0	43.9	46.2	61.2	53.95	30.142	73.5	69.9	73.0	72.8	

REMARKS.

(129) 28. Transit over T. VI assumed to have been at $3^s.1$, not 31^s.
August 30, $21^h\ 0^m$. Became very hazy.

[a] Corr. for runs $+0''.01$.

ZONE 130. SEPTEMBER 6. C. $D_0 = -28° 18' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	12.7	. .	47.7	4.?	. .	19 2 29.78	+26.37	+1.34	IV.	4	54.121	− 4 44.24	−19.54	−1.91	19 2 57.49	−28 23 5.69
2	9.10	. .	34.	. .	. .	. .	. .	. .	5 9.13	26.35	1.26	II.	4	48.972	10 7.16	19.11	2.53	5 36.74	28 28.80
3	8	. .	20.3	38.	56.3	13.4	. .	. .	6 55.60	26.34	0.84	IV.	3	23.182	37 7.93	18.82	5.68	7 22.78	55 32.43
4	9	. .	. .	. .	2.	19.	36.3	. .	9 1.48	26.32	1.22	IV.	4	47.736	11 24.93	18.47	2.67	9 29.02	29 46.07
5	9	. .	. .	. .	. .	. .	. .	31.	9 38.19	26.32	0.93	VII.	3	29.139	30 54.40	18.37	4.95	10 5.44	49 17.72
6	9	. .	12.	. .	. .	15.	30.7	. .	13 47.38	26.29	0.79	IV.	2	21.669	38 43.63	17.68	5.86	14 14.46	57 7.17
7	9	. .	. .	37.7	. .	13.	. .	. .	13 55.26	26.29	0.79	IV.	2	21.151	39 16.19	17.64	5.93	14 22.34	57 39.76
8	9	. .	. .	. .	. .	. .	. .	59.8	14 6.86	26.29	0.76	VII.	2	19.674	40 48.57	17.63	6.10	14 33.91	59 12.30
9	8.9	. .	. .	. .	. .	. .	. .	33.7	14 40.83	26.29	0.84	VII.	2	24.675	35 34.74	17.53	5.48	15 7.96	53 57.75
10	9.10	15.1	31.3	50.	8.5	. .	. .	. .	18 7.66	26.26	0.83	IV.	2	24.708	35 32.92	16.96	5.48	18 34.75	53 55.36
11	9.10	. .	. .	. .	. .	46.	3.5	. .	18 28.35	26.26	0.91	V.	3	30.236	29 45.57	16.89	4.80	18 55.52	48 7.26
12	9	. .	46.6	5.	22.7	. .	. .	. .	21 22.16	26.24	1.13	IV.	4	44.354	14 57.22	16.41	3.08	21 49.53	33 16.71
13	8	. .	. .	57.	14.7	31.7	. .	. .	22 14.30	26.24	1.16	IV.	4	46.182	13 2.44	16.27	2.86	22 41.70	31 21.57
14	9	. .	. .	. .	. .	. .	58.5	17.	22 23.86	26.23	1.01	VI.	3	36.932	22 45.44	16.24	3.98	22 51.10	41 5.66
15	9	. .	. .	. .	. .	19.	26.8	44.2	24 51.44	26.22	0.85	V.	3	27.458	32 39.86	15.83	5.15	25 18.51	28 51 0.84
16	9	. .	. .	. .	. .	23.	. .	. .	26 5.29	26.21	0.68	V.	2	17.465	43 7.64	15.62	6.39	26 32.18	29 1 29.65
17	8.9	. .	. .	. .	. .	. .	48.7	6.2	26 13.33	26.21	0.71	VI.	2	19.331	41 10.47	15.60	6.14	26 40.25	28 59 32.21
18	8.9	. .	. .	. .	. .	. .	11.5	28.5	26 35.88	26.21	0.71	VI.	2	18.896	41 37.52	15.53	6.22	27 2.80	59 59.27
19	7.8	. .	. .	. .	8.2	24.5	42.	. .	29 6.97	26.21	0.74	IV.	3	22.241	38 6.97	15.10	5.80	29 33.92	28 56 27.87
20	9.10	. .	. .	. .	58.7	. .	. .	. .	31 57.73	26.17	0.67	IV.	2	17.340	43 15.49	14.64	6.40	32 24.57	29 1 36.53
21	9.10	. .	. .	. .	14.2	32.7	. .	. .	33 14.14	26.16	0.69	IV.	2	19.163	41 20.96	14.43	6.18	33 40.99	28 59 41.57
22	9	2.	19.	37.2	55.5	. .	. .	. .	35 54.63	26.14	0.73	IV.	3	22.539	37 48.28	13.98	5.76	36 21.50	56 8.02
23	7	. .	26.3	44.	2.5	19.5	36.4	. .	38 1.59	26.13	0.79	IV.	3	27.161	32 58.26	13.63	5.18	38 28.51	28 51 17.07
24	8.9	. .	. .	. .	. .	0.5	. .	. .	38 42.77	26.12	0.60	V.	2	15.366	45 19.38	13.52	6.64	39 9.49	29 3 39.54
25	7	. .	. .	. .	. .	40.5	58.	15.7	39 22.66	26.12	0.52	V.	2	10.079	50 51.10	13.37	7.31	39 49.30	29 9 11.78
26	8.9	. .	. .	23.	40.5	57.7	. .	. .	41 40.10	26.10	0.80	IV.	3	28.253	31 49.73	13.03	5.05	42 7.00	28 50 7.81
27	8.9	. .	. .	. .	13.	30.	47.2	. .	42 12.18	26.10	0.77	IV.	3	25.975	34 12.66	12.94	5.32	42 39.05	52 30.92
28	8	. .	. .	. .	. .	. .	. .	57.	42 4.09	26.10	0.70	VII.	3	22.048	37 47.90	12.97	5.82	42 30.89	56 6.69
29	9	. .	39.2	56.3	. .	. .	. .	. .	48 14.24	26.05	0.64	III.	2	19.424	41 4.50	11.96	6.13	48 40.93	28 59 22.59
30	8.9	. .	. .	46.2	. .	22.2	39.3	. .	49 4.06	26.05	0.59	IV.	2	15.842	44 49.25	11.82	6.58	49 30.70	29 3 7.65
31	7.8	. .	16.3	34.	52.7	9.5	. .	. .	50 51.71	26.03	0.63	IV.	2	19.321	41 11.16	11.54	6.14	51 18.37	28 59 28.84
32	9	. .	. .	7.	24.7	. .	59.5	. .	52 24.47	26.02	1.16	IV.	4	52.748	6 10.56	11.30	2.07	52 51.65	24 23.93
33	9	. .	. .	. .	. .	. .	1.2	18.5	52 26.00	26.02	0.98	VI.	3	41.095	18 24.38	11.30	3.47	52 53.00	36 39.15
34	9.10	. .	. .	. .	. .	. .	27.	. .	53 26.82	26.01	1.13	VI.	4	51.131	7 51.72	11.07	2.27	54 53.96	26 5.06
35	8	. .	. .	. .	58.	14.7	32.7	. .	56 57.30	25.99	0.78	IV.	3	30.535	29 26.56	10.58	4.76	19 57 24.07	47 41.90
36	8	. .	1.3	19.3	37.6	. .	12.	. .	59 36.77	25.97	0.71	IV.	3	26.170	34 0.43	10.17	5.30	20 0 3.45	52 15.90
37	9	. .	. .	. .	. .	. .	. .	33.	19 59 40.54	25.97	1.15	VII.	4	53.792	5 4.36	10.16	1.95	0 7.66	28 23 16.47
38	8	. .	. .	27.2	46.	2.7	20.7	. .	20 1 44.98	25.96	0.45	IV.	2	10.227	49 39.12	9.86	7.28	2 11.39	29 7 56.26
39	9	. .	10.3	28.3	46.3	4.	. .	. .	5 45.82	25.93	0.65	IV.	3	22.714	37 37.16	9.28	5.74	6 12.40	28 55 52.18
40	9	. .	. .	. .	. .	. .	45.3	. .	6 10.21	25.92	0.90	VI.	4	38.274	21 18.18	9.21	3.82	6 37.03	39 31.21
41	9	. .	. .	2.	19.3	. .	. .	. .	8 19.13	25.91	0.96	IV.	4	42.128	17 16.70	8.90	3.35	8 46.00	35 28.95
42	9	. .	. .	13.7	32.	48.5	6.	. .	14 31.01	25.86	0.70	IV.	3	26.591	33 33.95	8.03	5.25	14 57.57	28 51 47.23
43	6	. .	. .	31.	49.7	6.6	24.1	41.8	15 48.69	25.85	0.44	IV.	2	10.446	50 28.19	7.86	7.26	16 14.98	29 8 43.31
44	8.9	. .	44.1	2.	20.	37.	54.4	. .	18 19.38	25.83	0.81	IV.	3	33.030	26 49.91	7.51	4.46	18 46.02	28 45 1.88
45	8.9	. .	. .	54.2	12.	29.	. .	. .	22 11.54	25.81	0.97	IV.	4	43.149	16 12.67	6.98	3.23	22 38.32	28 34 22.88
46	8.9	. .	. .	. .	7.	. .	41.5	. .	23 6.06	25.80	0.49	IV.	2	13.135	47 39.29	6.86	6.91	23 32.35	29 5 53.06
47	10	. .	. .	1.3	. .	. .	55.	. .	25 19.25	25.78	0.48	IV.	2	12.908	47 53.40	6.56	6.93	25 45 51	29 6 6.89
48	8	. .	. .	12.2	30.2	47.	4.7	21.7	29 29.32	25.75	0.62	IV.	3	21.754	38 37.40	5.99	5.85	29 55.69	28 56 49.24
49	7.8	. .	. .	2.	20.7	36.8	54.6	. .	20 31 19.39	+25.74	+0.50	IV.	2	14.417	−46 18.93	− 5.75	−6.76	20 31 45.63	−29 4 31.44

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 130	Sept. 6, 19 0	67 39 61.7	56.5	59.9	44.4	45.6	62.1	55.03[a]	30.130	77.0	70.0	74.5	. .	79.5
	19 29	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.4			
	19 48	. .	. .	. .	. .	. .	. .	. .	30.142	76.0	68.1			
	20 0	61.2	55.8	59.5	44.9	45.1	62.5	54.83	. .	. .	68.5	73.0	75.5	
	20 22	. .	. .	. .	. .	. .	. .	. .	30.152	75.0	67.5			
	20 45	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.5			
	21 0	60.9	56.4	59.1	45.8	44.9	62.6	54.95	30.148	74.0	65.6	71.0	75.0	
	21 7	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.4			

REMARKS.

(130) 6. Transit observations very discordant; that of T. V assumed as 5^s instead of 15^s.

(130) 10. Transit over T. II rejected.

(130) 15. Time of transit over T. V assumed as 9^s instead of 19^s.

(130) 21. Right ascension 8^s smaller than by Mural Circle, 1846, August 18, and Arg. Z. 235, 49.

(130) 28. Micrometer reading assumed as $22^r.548$ instead of $22^r.048$.

(130) 34. Transit over T. IV assumed as recorded over T. VI, and minutes at 54, not 53, to agree with Transit Z., 1847, September 4; Arg. Z. 394, 67, 8.

(130) 38. Micrometer reading assumed as $11^r.227$ instead of $10^r.227$.

[a] Corr. for runs +0″.01.

Zone 130. September 6. C. $D_0 = -28° 18' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. . .	. . .	. . .	. .	37.	54.5	20 32 1.96	+25.73	+1.01	VI.	4	46.006	−13 13.03	− 5.66	−2.88	20 32 28.70	−28 31 21.57
51	9	. .	49.7	7.	25.	42.	. . .	. .	34 24.60	25.71	1.07	IV.	4	50.176	8 51.98	5.35	2.38	34 51.38	26 59.71
52	7.8	. .	. . .	. .	4.3	21.4	39.	. .	35 3.78	25.71	0.80	IV.	3	33.558	26 16.91	5.27	4.39	35 30.29	44 26.57
53	9.10	. .	. . .	27.	. . .	2.7	20.	. .	36 44.75	25.70	0.59	IV.	2	19.756	40 43.60	5.06	6.09	37 11.04	58 54.75
54	9.10	. .	. . .	. . .	9.7	. .	45.	. .	39 9.58	25.68	0.90	IV.	3	40.580	18 56.43	4.73	3.53	39 36.16	37 4.69
55	9	. .	. .	43.2	59.	. .	33.2	51.2	40 58.99	25.67	0.96	IV.	4	43.746	15 35.10	4.51	3.15	41 25.62	33 42.76
56	9	. .	35.2	. . .	. .	39.	. . .	. .	41 10.92	25.67	0.96	IV.	4	4[illegible]646	13 35.86	4.51	2.91	41 37.55	31 43.28
57	8	. .	. . .	. . .	. . .	. . .	. .	0.5	42 7.91	25.66	0.93	VII.	4	44.304	14 59.60	4.37	3.08	42 34.53	33 7.05
58	9	. .	. . .	. . .	. .	9.6	. . .	. .	43 52.03	25.64	0.92	V.	4	42.431	16 57.70	4.16	3.31	44 18.60	35 5.17
59	8	. .	. . .	. . .	40.	57.1	14.7	. .	44 39.65	25.64	1.02	IV.	4	47.972	11 10.06	4.06	2.64	45 6.31	29 16.76
60	7.8	. .	. . .	. . .	. .	26.2	44.	1.7	45 8.95	25.63	1.03	V.	4	47.545	11 36.90	4.01	2.70	45 35.61	29 43.61
61	9.10	. .	. . .	. . .	54.	. .	28.7	. .	47 53.32	25.61	0.64	IV.	3	23.660	36 37.87	3.67	5.62	48 19.57	54 47.16
62	9	. .	. . .	. . .	. . .	. .	35.	. .	50 59.77	25.59	0.65	VI.	3	24.329	35 56.33	3.29	5.52	51 26.01	54 5.14
63	9	. .	. . .	. . .	. . .	. . .	. .	25.7	51 32.90	25.58	0.74	VII.	3	29.592	30 25.97	3.23	4.87	51 59.22	48 34.07
64	8	. .	. . .	. . .	. . .	. . .	. .	0.7	52 8.24	25.58	1.11	VII.	4	53.722	5 8.80	3.16	1.96	20 52 34.93	28 23 13.92
65	7.8	. .	0.	18.7	35.7	52.	. . .	. . .	20 59 35.18	25.52	0.48	IV.	2	14.408	46 19.50	2.28	6.76	21 0 1.18	29 4 28.54
66	8	. .	. . .	. . .	7.	23.7	41.	. .	21 1 5.86	25.51	0.46	IV.	2	13.129	47 39.66	2.12	6.91	1 31.83	29 5 48.69
67	8	. .	21.6	38.8	57.	14.3	31.6	. .	2 56.59	25.50	0.99	IV.	4	46.412	12 48.13	1.91	2.83	3 23.08	28 30 52.87
68	8.9	. .	25.7	. .	2.	18.7	. . .	. .	21 7 1.11	+25.46	+0.65	IV.	3	24.864	−35 22.19	− 1.44	−5.46	21 7 27.22	−28 53 29.09

Zone 131. September 14. P. $D_0 \doteq -29° 33' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	. . .	. .	53.	. .	. . .	. .	18 38 52.06	+19.15	+1.05	IV.	2	19.370	−41 8.08	−43.15	−5.34	18 39 12.26	−30 14 56.57
2	9	. .	. . .	. . .	. .	16.5	. . .	. .	39 58.60	19.15	1.02	V.	3	23.822	36 27.83	42.95	4.72	40 18.77	10 15.50
3	8	. .	. . .	2.5	. .	. . .	. . .	. .	41 20.22	19.14	1.02	III.	3	22.820	37 30.08	42.72	4.86	41 40.38	11 17.66
4	8	. .	. . .	. . .	. .	46.	. . .	. .	41 28.06	19.14	1.06	V.	2	17.240	43 21.77	42.69	5.63	41 48.26	17 10.09
5	9	49.	6.	24.5	. .	. . .	. . .	. .	44 42.24	19.11	1.07	III.	2	14.505	46 13.16	42.12	6.01	45 2.42	30 20 1.29
6	7	. .	41.	58.5	16.5	. . .	. . .	. .	46 16.29	19.10	0.83	IV.	4	52.880	6 2.29	41.84	0.79	46 36.22	29 39 44.92
7	8.9	. .	. . .	. . .	. . .	. .	5.	. .	46 29.51	19.10	0.92	VI.	4	40.670	18 47.71	41.81	2.42	46 49.53	52 31.94
8	8.9	. .	. . .	. . .	. .	13.	. . .	. .	47 55.21	19.09	0.92	V.	4	39.645	19 52.31	41.56	2.53	48 15.22	29 53 36.40
9	3.4	50.3	8.	26.	44.2	1.5	. .	37.3	52 43.67	19.06	0.97	IV.	3	28.510	31 33.61	40.72	4.07	53 3.70	30 5 18.40
10	9	. .	. . .	. . .	. .	59.3	. . .	. .	53 41.53	19.05	0.88	V.	4	43.525	15 49.02	40.54	2.02	54 1.46	29 49 31.58
11	9	. .	. . .	. . .	. .	16.	. . .	. .	54 58.19	19.04	0.94	V.	3	36.910	22 46.69	40.32	2.91	55 18.17	29 56 29.92
12	8	. .	26.3	. . .	. . .	. . .	. . .	. .	57 2.17	19.03	1.00	II.	3	23.375	36 54.93	39.96	4.78	57 22.20	30 10 39.67
13	8	. .	. . .	2.	. . .	. . .	. . .	. .	57 19.72	19.03	0.99	III.	3	23.813	36 27.77	39.91	4.72	57 39.74	10 12.40
14	7	. .	. . .	. . .	. .	47.5	. . .	. .	57 19.53	19.03	1.07	V.	2	11.513	49 21.22	39.88	6.43	57 39.63	23 7.53
15	8.9	. .	. . .	. . .	. . .	. .	35.	. .	57 59.30	19.02	1.02	VI.	3	20.920	39 30.05	39.79	5.12	58 19.34	13 15.96
16	8.9	. .	. . .	. . .	. . .	. . .	. .	23.	18 58 29.53	19.02	0.97	VII.	3	28.843	31 12.78	39.70	4.02	18 58 49.52	4 56.50
17	7	. .	58.3	16.	. .	. . .	. . .	. .	19 0 33.98	19.00	1.02	III.	2	19.807	40 40.21	39.35	5.29	19 0 54.00	14 24.85
18	8	. .	. . .	. .	51.	. . .	. . .	. .	0 50.31	19.00	0.96	IV.	3	30.873	29 5.17	39.30	3.75	1 10.27	30 2 48.22
19	4.5	. .	. . .	. .	28.	46.	. . .	. .	1 27.96	19.00	0.85	IV.	4	48.372	10 45.22	39.18	1.36	1 47.81	29 44 25.76
20	8	. .	. .	59.	17.	. . .	. . .	. .	3 16.58	18.98	0.90	IV.	4	40.200	19 17.68	38.97	2.47	3 36.46	29 52 59.12
21	7	51.5	9.2	27.3	45.5	3.	. . .	. .	4 44.94	18.97	0.96	IV.	3	28.853	31 11.90	38.63	4.04	5 4.87	30 4 54.57
22	7	55.5	13.	30.	49.2	. . .	. . .	. .	11 48.42	18.92	0.89	IV.	4	40.323	19 10.04	37.41	2.46	12 8.23	29 52 49.91
23	7	. .	. . .	. .	14.	31.5	. . .	. .	12 13.67	18.92	0.86	IV.	4	44.990	14 17.14	37.34	1.83	12 33.45	47 56.31
24	9	. .	. . .	. . .	. . .	. .	25.	. .	12 59.51	18.91	0.89	VI.	4	41.020	18 25.76	37.20	2.36	13 19.31	52 5.32
25	6	. .	41.3	59.	17.	34.5	. . .	. .	15 16.75	18.90	0.79	IV.	4	56.750	1 59.64	36.82	0.25	15 36.44	29 35 36.71
26	6	14.	31.5	49.7	8.3	25.	. . .	. .	19 17 7.34	+18.88	+0.94	IV.	3	31.552	−28 22.75	−36.51	−3.65	19 17 27.16	−30 2 2.91

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
								30.052

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 131	Sept. 14,	18 40	68 54 64.2	63.8	63.0	52.0	50.4	64.3	59.62	30.180	63.2	56.3	64.0	64.0	66.0
		20 30	. .	. .	. .	. .	. .	. .	. .	30.204	61.0	54.0			
		20 59	. .	. .	. .	. .	. .	. .	. .	30.212	61.0	53.0			
		22 2	. .	. .	. .	. .	. .	. .	. .	30.230	61.0	52.0			
		22 59	. .	. .	. .	. .	. .	. .	. .	30.236	60.0	50.0			
		23 58	. .	. .	. .	. .	. .	. .	. .	30.244	59.0	48.8	. .	59.0	

REMARKS.

(130) 56. Transit over T. V assumed as 29ˢ, not 39ˢ, and micrometer reading as 45ʳ.646.

(131) 14. Transit over T. V assumed as 37ˢ.5, not 47ˢ.5, to agree with Arg. Z. 221, 147, and Mural Z. June 17.

ZONE 131. SEPTEMBER 14. P. $D_0 = -29° 33' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
27	7.8	. .	. .	. .	4.	. .	. .	. .	19 18 3.60	+18.88	+0.86	IV.	4	45.240	−14 1.58	−36.35	−1.80	19 18 23.34	−29 47 39.73
28	9	. .	. .	. .	. .	. .	40.	. .	18 4.50	18.88	0.89	VI.	4	39.870	19 37.82	36.35	2.52	18 24.27	52 16.69
29	8	. .	. .	. .	. .	. .	. .	28.	18 34.87	18.88	0.82	VII.	4	51.480	7 29.52	36.27	0.95	18 54.57	29 41 6.74
30	8	. .	. .	. .	. .	. .	12.	. .	19 36.43	18.87	0.93	VI.	3	32.980	26 53.34	36.08	3.45	19 56.23	30 0 32.87
31	8	. .	. .	. .	. .	. .	49.	. .	20 13.46	18.86	0.91	VI.	3	35.510	24 14.76	35.99	3.11	20 33.23	29 57 53.86
32	7	. .	. .	. .	. .	37.	. .	. .	21 19.24	18.85	0.85	V.	4	44.935	14 20.39	35.80	1.84	21 38.94	29 47 58.03
33	9	. .	32.	. .	. .	26.	. .	. .	30 7.99	18.79	1.01	V.	2	18.783	41 44.73	34.34	5.43	30 27.79	30 15 24.50
34	8	. .	. .	. .	27.	44.	. .	. .	31 26.19	18.78	0.95	IV.	3	28.790	31 15.85	34.13	4.03	31 45.92	4 54.01
35	8	. .	. .	. .	. .	27.	. .	. .	35 9.12	18.75	0.95	V.	3	27.223	32 54.61	33.53	4.25	35 28.82	30 6 32.39
36	8	. .	. .	. .	23.	. .	. .	. .	38 22.56	18.72	0.86	IV.	4	42.830	16 32.55	32.99	2.11	38 42.14	29 50 7.65
37	9	. .	. .	. .	. .	34.	. .	. .	39 16.15	18.71	0.92	V.	3	31.425	28 31.03	32.84	3.67	39 35.78	30 2 7.54
38	8	. .	58.	16.	. .	. .	. .	. .	42 33.76	18.69	0.94	III.	3	27.973	32 6.79	32.33	4.14	42 53.39	30 5 43.26
39	8	. .	. .	. .	. .	39.	. .	. .	45 21.24	18.67	0.84	V.	4	45.625	13 37.25	31.89	1.75	45 40.75	29 47 10.89
40	8	0.5	. .	36.5	. .	. .	. .	. .	51 54.06	18.61	0.97	III.	2	22.040	38 20.15	30.84	4.98	52 13.64	30 11 55.97
41	8	42.	. .	17.3	. .	. .	. .	. .	54 35.05	18.59	0.86	III.	4	40.273	19 13.12	30.42	2.46	54 54.50	29 52 46.00
42	6.7	. .	8.	26.3	44.5	. .	. .	. .	57 43.85	18.57	0.94	IV.	3	24.940	35 17.42	29.94	4.57	58 3.36	30 8 51.93
43	9	. .	. .	50.5	. .	. .	. .	. .	59 8.26	18.56	1.00	III.	2	14.920	45 46.92	29.71	5.97	19 59 27.82	19 22.60
44	8	. .	37.	. .	14.	. .	. .	. .	60 13.04	18.55	0.91	IV.	3	29.500	30 31.49	29.56	3.94	20 0 32.50	30 4 4.99
45	8	. .	. .	. .	. .	. .	. .	45.5	19 59 52.16	18.55	0.87	VII.	3	36.840	22 51.09	29.60	2.93	0 11.58	29 56 23.62
46	8	. .	. .	. .	. .	. .	. .	30.	20 0 36.39	18.55	0.97	VII.	2	19.513	40 58.74	29.49	5.34	0 55.91	30 14 33.57
47	7	. .	. .	. .	. .	. .	. .	27.	2 33.60	18.53	0.89	VII.	3	33.750	26 4.98	29.19	3.35	2 53.02	29 59 37.52
48	5.6	. .	35.3	53.7	13.	29.7	. .	. .	6 11.59	18.50	1.05	IV.	1	7.137	53 54.60	28.64	7.10	6 31.14	30 27 30.34
49	8	. .	25.	42.5	1.	. .	. .	. .	8 0.44	18.48	0.84	IV.	4	41.866	17 33.00	28.37	2.23	8 19.76	29 51 3.60
50	9	. .	54.	. .	. .	. .	. .	. .	9 29.86	18.47	0.94	II.	3	24.120	36 8.07	28.14	4.70	9 49.27	30 9 40.91
51	7.6	. .	. .	. .	48.	. .	22.7	. .	9 47.17	18.47	0.91	IV.	3	28.417	31 39.50	28.10	4.09	10 6.55	30 5 11.69
52	6.7	. .	. .	. .	. .	. .	29.	. .	10 53.64	18.46	0.76	VI.	4	52.590	6 20.23	27.93	0.78	11 12.86	29 39 48.94
53	7.8	. .	. .	. .	. .	41.	. .	. .	13 23.30	18.44	0.75	V.	4	54.705	4 7.80	27.57	0.51	13 42.49	29 37 35.88
54	7	. .	9.	. .	. .	. .	. .	. .	15 45.07	18.42	1.05	II.	1	6.650	54 24.29	27.23	7.17	16 4.54	30 27 58.69
55	8.9	. .	. .	. .	. .	. .	52.5	. .	15 16.92	18.42	0.89	VI.	3	31.900	28 1.05	27.29	3.60	15 36.23	30 1 31.94
56	7	. .	. .	. .	. .	. .	35.5	. .	15 59.98	18.42	0.85	VI.	3	37.905	21 44.34	27.19	2.73	16 19.25	29 55 14.26
57	7	40.	57.3	15.3	33.5	. .	8.7	. .	18 33.05	18.40	0.84	IV.	4	40.730	18 44.33	26.82	2.39	18 52.29	29 52 13.54
58	7.8	. .	35.5	53.5	12.3	. .	. .	. .	21 11.35	18.38	0.95	IV.	3	22.590	37 45.08	26.43	4.91	21 30.68	30 11 16.42
59	6	. .	. .	. .	. .	. .	1.	18.5	21 25.56	18.37	0.75	VI.	4	55.635	3 9.31	26.40	0.39	21 44.68	29 36 36.10
60	7	25.	42.3	0.5	18.5	. .	. .	. .	24 18.06	18.35	0.80	IV.	4	44.820	14 27.74	25.99	1.85	24 37.21	47 55.58
61	7	. .	21.3	39.3	57.	. .	. .	. .	30 56.82	18.29	0.77	IV.	4	49.070	10 1.33	25.05	1.27	31 15.88	43 27.65
62	6.7	. .	12.5	30.3	48.7	. .	. .	. .	33 48.10	18.27	0.86	IV.	3	36.263	23 27.28	24.66	3.00	34 7.23	56 54.94
63	8	. .	. .	54.	. .	. .	. .	. .	35 11.63	18.25	0.81	III.	4	43.965	15 21.36	24.46	1.93	35 30.69	48 47.75
64	8	27.5	. .	3.	. .	. .	. .	. .	37 20.66	18.24	0.83	III.	4	39.350	20 11.01	24.17	2.56	37 39.73	53 37.74
65	6.7	. .	39.	57.	. .	. .	. .	. .	42 14.71	18.20	0.86	III.	3	33.610	26 13.21	23.51	3.37	42 33.77	29 59 40.09
66	6	. .	. .	. .	31.5	49.	. .	. .	42 13.40	18.19	0.97	V.	2	14.023	46 43.54	23.47	6.13	42 32.56	30 20 13.14
67	8	27.	45.	3.	. .	. .	. .	. .	45 20.54	18.17	0.85	III.	3	34.790	24 59.05	23.10	3.20	45 39.56	29 58 25.35
68	7	. .	15.	32.	. .	. .	. .	. .	46 50.05	18.16	0.72	III.	4	53.940	4 55.76	22.90	0.59	47 8.93	29 38 19.25
69	8	. .	5.5	23.5	. .	. .	. .	. .	50 41.24	18.12	0.88	III.	3	30.137	29 51.09	22.40	3.86	51 0.24	30 3 17.35
70	7.6	. .	. .	. .	41.	58.	. .	33.	51 39.79	18.12	0.97	IV.	2	15.630	45 2.69	22.27	5.75	51 58.88	18 30.71
71	8	. .	. .	. .	. .	. .	. .	36.	51 42.31	18.12	0.97	VII.	2	14.390	46 20.32	22.27	6.09	52 1.40	30 19 48.68
72	7	. .	. .	. .	36.	53.5	. .	. .	53 35.75	18.10	0.75	IV.	4	50.590	8 26.02	22.03	1.06	53 54.60	29 41 49.11
73	8	. .	. .	44.	. .	9.	. .	. .	54 51.44	18.08	0.76	V.	4	48.437	10 41.02	21.88	0.34	55 10.28	29 44 3.24
74	8	45.	2.	20.	39.	. .	. .	. .	57 38.03	18.06	0.91	IV.	3	22.940	37 22.92	21.53	4.86	57 57.03	30 10 49.31
75	8	30.	. .	6.	. .	. .	. .	. .	20 59 23.44	+18.04	+0.84	III.	3	35.593	−24 8.80	−21.30	−3.09	20 59 42.32	−29 57 33.19

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(131) 66. Transits over T.'s III and IV assumed as recorded over T.'s IV and V, to agree with Mural Z. June 17, and Arg. Z. 245, 15.

(131) 73. Transit over T. III assumed as 34^s instead of 44^s.

ZONE 131. SEPTEMBER 14. P. $D_0 = -29° 33' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
76	6	. .	10.	28.3	46.7	. .	21.7	. .	21 0 45.91	+18.03	+0.96	IV.	2	14.627	−46 5.64	−21.14	−6.04	21 1 4.90	−30 19 32.82
77	7	. .	. .	. .	. .	59.	16.	. .	4 40.67	18.00	0.95	V.	2	17.437	43 9.40	20.67	5.65	4 59.62	30 16 35.72
78	7	. .	. .	. .	. .	. .	20.	. .	10 44.45	17.95	0.84	VI.	3	34.443	25 21.75	19.95	3.25	11 3.24	29 58 44.95
79	6	. .	. .	17.5	35.5	53.	. .	. .	12 35.16	17.93	0.78	IV.	4	44.755	14 31.81	19.74	1.84	12 53.87	29 47 53.39
80	7	. .	. .	. .	27.	44.5	. .	. .	13 26.46	17.92	0.87	IV.	3	29.240	30 47.81	19.64	3.98	13 45.25	30 4 11.43
81	8	. .	. .	43.5	. .	. .	. .	. .	15 1.13	17.91	0.78	III.	4	44.050	15 16.09	19.46	1.94	15 19.82	29 48 37.49
82	8.9	. .	. .	. .	. .	. .	46.5	. .	15 11.05	17.91	0.77	VI.	4	45.165	14 5.84	19.44	1.78	15 29.73	47 27.06
83	7	38.3	56.	14.	. .	. .	. .	. .	17 31.47	17.89	0.72	III.	4	52.983	5 55.83	19.17	0.70	17 50.08	29 39 15.70
84	8	. .	4.	22.	40.3	. .	. .	. .	24 39.69	17.82	0.89	IV.	3	25.865	34 19.38	18.39	4.45	24 58.40	30 7 42.22
85	6.7	. .	. .	. .	44.	0.7	. .	. .	25 42.87	17.82	0.95	IV.	2	14.670	48 8.36	18.28	6.27	26 1.64	21 32.91
86	7	22.	39.3	57.7	. .	. .	. .	. .	29 15.40	17.78	0.95	III.	2	15.310	45 22.71	17.88	5.95	29 34.13	18 46.54
87	8	. .	. .	31.	49.	. .	. .	. .	39 48.49	17.69	0.86	IV.	3	29.835	30 10.29	16.82	3.90	40 7.04	3 31.01
88	7	. .	. .	. .	41.	. .	. .	. .	46 39.88	17.63	0.99	IV.	1	9.915	51 0.07	16.17	6.72	46 58.50	24 22.96
89	8	. .	. .	. .	. .	39.	. .	. .	47 21.14	17.62	0.85	V.	3	29.995	30 0.56	16.11	3.87	47 39.61	30 3 20.54
90	8.9	. .	. .	. .	50.	. .	. .	. .	48 49.56	17.61	0.77	IV.	4	43.340	16 0.82	15.96	2.02	49 7.94	29 49 18.80
91	6.7	. .	57.	15.3	33.3	. .	. .	. .	50 32.82	17.60	0.75	IV.	4	46.340	12 52.66	15.81	0.62	50 51.17	46 9.09
92	8.9	. .	. .	6.5	. .	. .	. .	. .	51 6.22	17.59	0.72	III.	4	51.200	7 47.82	15.73	0.95	51 24.53	41 4.50
93	8.9	. .	. .	4.	. .	. .	. .	. .	54 21.65	17.56	0.79	III.	4	40.255	19 14.24	15.47	2.45	54 40.00	29 52 32.16
94	6.7	.	. .	. .	. .	59.3	17.5	. .	54 41.67	17.56	0.85	V.	3	29.290	30 44.98	15.44	3.97	55 0.08	30 4 4.39
95	6.7	25.	42.3	0.3	18.	. .	. .	10.7	57 17.80	17.54	0.76	IV.	4	44.740	14 32.76	15.21	1.84	57 36.10	29 47 49.81
96	7	. .	. .	. .	. .	. .	. .	49.7	21 57 55.99	17.53	0.96	VII.	2	13.410	47 21.83	15.15	6.23	21 58 14.48	30 20 43.21
97	8	. .	. .	. .	57.	. .	. .	. .	22 2 56.04	17.49	0.92	IV.	2	18.050	42 30.74	14.74	5.59	22 3 14.45	15 51.07
98	8	. .	. .	. .	. .	31.3	. .	. .	4 13.37	17.48	0.93	V.	2	17.384	43 12.73	14.63	5.68	4 31.78	16 33.04
99	8	. .	. .	24.3	42.3	. .	. .	. .	5 41.75	17.46	0.88	IV.	3	25.150	35 4.38	14.52	4.55	6 0.09	8 23.45
100	8	. .	. .	. .	18.5	. .	. .	. .	7 17.47	17.45	0.94	IV.	2	14.590	46 8.02	14.39	6.07	7 35.86	19 28.48
101	8	. .	. .	. .	. .	21.3	. .	. .	8 3.44	17.44	0.85	V.	3	29.450	30 34.88	14.33	3.95	8 21.73	30 3 53.16
102	8	. .	. .	. .	14.5	. .	. .	. .	11 13.98	17.42	0.79	IV.	3	39.000	20 35.40	14.08	2.61	11 32.19	29 53 52.09
103	7.8	0.	. .	35.5	. .	. .	. .	. .	13 53.39	17.39	0.96	III.	2	11.995	48 50.58	13.90	6.45	14 11.74	30 22 10.93
104	7	. .	. .	5.3	23.5	41.	. .	. .	17 23.07	17.36	0.79	IV.	4	42.193	17 12.68	13.64	2.16	17 41.22	29 50 28.48
105	8	. .	. .	28.3	. .	. .	21.5	. .	20 45.98	17.33	0.79	IV.	4	42.010	17 24.04	13.40	2.19	21 4.10	29 50 39.63
106	8.9	. .	. .	. .	. .	41.	. .	. .	22 23.14	17.32	0.86	V.	3	29.950	30 3.32	13.30	3.87	22 41.32	30 3 20.49
107	8	. .	. .	59.3	. .	34.7	. .	. .	24 16.94	17.30	0.76	V.	4	47.313	11 51.51	13.17	1.46	24 35.00	29 45 6.14
108	7	. .	. .	. .	. .	. .	25.3	. .	24 49.46	17.30	1.00	VI.	1	8.170	52 50.06	13.14	7.04	25 7.76	30 26 10.24
109	7	. .	25.3	43.	1.3	. .	. .	. .	29 0.81	17.26	0.78	IV.	4	43.360	15 59.56	12.86	2.00	29 18.85	29 49 14.42
110	7	. .	. .	. .	. .	26.	. .	. .	31 8.30	17.23	0.71	V.	4	54.520	4 19.52	12.74	0.48	31 26.24	29 37 32.74
111	7	. .	. .	. .	. .	. .	. .	23.	31 29.52	17.23	0.87	VII.	3	28.020	32 4.54	12.72	4.15	31 47.62	30 5 21.41
112	6.7	. .	. .	25.	43.	0.3	. .	. .	33 42.44	17.22	0.89	IV.	3	24.990	35 14.34	12.59	4.57	34 0.55	30 8 31.50
113	8	. .	52.	9.5	. .	. .	. .	. .	35 27.33	17.20	0.74	III.	4	49.510	9 33.74	12.49	1.17	35 45.27	29 42 47.40
114	8	45.	2.5	. .	38.7	. .	. .	. .	40 38.18	17.16	0.83	IV.	3	34.380	25 25.40	12.20	3.26	40 56.17	29 58 40.86
115	7.8	. .	. .	. .	. .	. .	. .	33.	40 39.30	17.16	0.96	VII.	2	14.040	46 42.10	12.20	6.15	40 57.42	30 20 0.45
116	6	. .	. .	28.3	47.	3.7	. .	. .	42 45.92	17.14	0.96	IV.	2	14.305	46 25.97	12.11	6.13	43 4.02	30 19 44.21
117	7	. .	. .	50.	8.3	25.5	. .	. .	44 7.68	17.13	0.83	IV.	3	34.500	25 17.80	12.03	3.24	44 25.64	29 58 33.07
118	7.8	. .	. .	. .	. .	. .	. .	39.5	46 45.74	17.11	1.00	VII.	1	9.645	51 17.34	11.91	6.78	47 3.85	30 24 36.03
119	1	. .	. .	45.	4.	21.3	. .	. .	49 2.99	17.09	1.01	IV.	1	9.317	51 37.87	11.79	6.83	49 21.09	24 56.49
120	6	11.3	29.	47.2	5.7	22.7	. .	. .	51 4.83	17.07	0.95	IV.	2	17.970	42 35.76	11.71	5.59	51 22.85	30 15 53.06
121	6	. .	13.5	31.3	54.?	. .	. .	. .	52 48.89	17.06	0.73	IV.	4	52.710	6 13.01	11.65	0.72	53 6.68	29 39 25.38
122	8	. .	. .	. .	. .	. .	31.3	. .	52 55.78	17.06	0.83	VI.	3	37.530	22 8.06	11.64	2.82	22 53 13.67	55 22.52
123	5	. .	. .	. .	. .	. .	30.7	. .	22 59 55.35	16.99	0.73	VI.	4	54.140	4 43.04	11.39	0.53	23 0 13.07	37 54.96
124	8	. .	. .	. .	42.	. .	. .	. .	23 1 41.64	+16.98	+0.77	IV.	4	47.015	−12 10.14	−11.33	−1.49	23 1 59.39	−29 45 22.96

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(131) 85. Micrometer reading assumed as $12^r.670$, not $14^r.670$, to agree with Arg. Z. 228, 19; 245, 52; and Mural Z., 1846, September 23.

(131) 92. Transit over T. IV assumed as recorded over T. III.

(131) 100. Transit over T. V. probably recorded over T. IV, to agree with Transit Z., 1846, September 23.

(131) 121. The time of transit over T. IV is assumed as 49^s instead of 54^s.

ZONE 131. SEPTEMBER 14. P. $D_\circ = -29° 33' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
125	7	. .	. .	. .	. .	39.5	57.3	. .	23 2 21.54	+16.98	+0.98	V.	2	13.963	−46 47.24	−11.31	−6.19	23 2 39.50	−30 20 4.74
126	8.9	22.5	. .	. .	16.	. .	. .	. .	14 15.58	16.88	0.79	IV.	4	43.240	16 7.02	10.96	2.00	15 33.25	29 49 19.98
127	8	. .	. .	. .	. .	46.	. .	. .	19 28.04	16.84	0.99	V.	2	13.515	47 15.55	10.83	6.26	19 45.87	30 20 32.64
128	8	. .	. .	. .	56.	. .	. .	. .	20 55.60	16.83	0.79	IV.	4	44.605	14 41.35	10.81	1.82	21 13.22	29 47 53.98
129	8	. .	. .	5.	. .	. .	. .	. .	27 22.61	16.77	0.75	III.	4	51.190	7 48.39	10.70	0.91	27 40.13	29 41 0.00
130	8	. .	34.	52.	. .	. .	. .	. .	30 9.81	16.75	0.94	III.	3	22.235	38 6.97	10.66	4.99	30 27.50	30 11 22.62
131	7	53.	9.3	27.5	46.5	. .	. .	. .	31 45.56	16.74	0.78	IV.	4	46.080	13 8.77	10.65	1.62	32 3.08	29 46 21.04
132	8.9	. .	. .	. .	. .	. .	43.	. .	32 7.59	16.74	0.77	VI.	4	48.102	11 1.66	10.64	1.34	32 25.10	29 44 13.64
133	7	. .	. .	. .	53.5	. .	. .	. .	33 52.32	16.72	1.03	IV.	1	7.003	54 2.94	10.63	7.20	34 10.07	30 27 20.77
134	7	. .	. .	35.3	53.3	11.	. .	. .	34 52.99	16.72	0.82	IV.	4	40.255	19 14.24	10.62	2.43	35 10.53	29 52 27.29
135	7.8	. .	. .	49.	8.	. .	. .	. .	42 6.91	16.66	0.95	IV.	2	19.635	40 51.34	10.56	5.37	42 24.52	30 14 7.27
136	7	. .	3.5	22.3	40.7	. .	. .	33.5	45 39.78	16.63	0.95	IV.	2	19.890	40 35.20	10.55	5.32	45 57.36	13 51.07
137	7	35.	53.3	11.3	30.	. .	. .	. .	48 28.95	16.61	1.00	IV.	2	13.405	47 22.46	10.54	6.27	48 46.56	20 39.27
138	8	39.	56.	14.3	32.7	. .	. .	. .	50 32.01	16.60	0.90	IV.	3	30.490	29 29.38	10.53	3.80	50 49.51	2 43.71
139	5.6	. .	. .	. .	28.3	45.	3.	. .	51 27.19	16.59	0.99	IV.	2	14.810	45 54.01	10.53	6.05	51 44.77	19 10.59
140	8	. .	. .	16.5	. .	. .	. .	. .	55 34.24	16.56	0.96	III.	3	20.675	39 44.75	10.55	5.21	55 51.76	13 0.51
141	6	. .	. .	. .	. .	39.5	. .	15.3	56 21.71	16.56	0.92	V.	3	27.170	32 57.88	10.55	4.28	56 39.19	30 6 12.71
142	7.8	. .	. .	54.	12.	. .	. .	5.	23 58 11.55	+16.54	+0.88	IV.	3	33.940	−25 52.75	−10.55	−3.32	23 58 28.97	−29 59 6.62

ZONE 132. SEPTEMBER 16. P. $D_\circ = -28° 55' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	17.	35.	. .	18 55 59.50	+16.61	+1.95	V.	3	37.640	−22 1.03	−30.77	−3.00	18 56 18.06	−29 18 4.80
2	8.9	. .	. .	. .	. .	. .	54.	. .	57 18.65	16.60	1.88	VI.	3	32.813	27 3.77	30.52	3.62	57 37.13	23 7.91
3	9	. .	. .	. .	. .	. .	. .	57.	58 4.00	16.60	1.96	VII.	4	39.230	20 17.78	30.38	2.79	58 22.56	29 16 20.95
4	7	. .	. .	. .	. .	. .	. .	3.	18 59 10.26	16.59	2.18	VII.	4	56.595	2 8.74	30.15	0.66	18 59 29.03	28 58 9.55
5	8	. .	. .	49.	6.3	. .	. .	. .	19 1 6.24	16.57	2.09	IV.	4	49.270	9 48.86	29.80	1.57	19 1 24.90	29 5 50.23
6	6.7	. .	. .	. .	. .	50.	5.5	. .	1 31.03	16.57	1.61	V.	2	12.445	48 22.71	29.72	5.27	1 49.21	44 27.70
7	8	46.	3.	21.5	. .	. .	. .	. .	4 38.91	16.55	1.78	III.	3	24.835	35 23.63	29.14	4.66	4 57.24	31 27.43
8	7	0.	. .	. .	53.7	10.5	. .	. .	4 52.89	16.55	1.79	IV.	3	26.630	33 31.51	29.09	4.43	5 11.23	29 35.03
9	9.10	. .	. .	. .	. .	. .	. .	36.	5 42.61	16.54	1.61	VII.	2	12.920	47 52.39	28.93	5.20	6 0.76	43 56.52
10	7	49.	6.5	24.	42.3	59.5	. .	. .	9 41.78	16.51	1.92	IV.	3	38.295	21 19.81	28.18	2.91	10 0.21	17 20.90
11	9.10	. .	. .	19.	. .	. .	. .	. .	11 36.66	16.50	1.58	III.	1	12.030	48 47.07	27.84	5.32	11 54.74	44 50.23
12	7	. .	. .	. .	16.7	34.	. .	. .	12 15.85	16.50	1.54	IV.	1	9.045	51 54.75	27.72	6.69	12 33.89	47 59.16
13	6.7	. .	. .	. .	12.	29.3	. .	. .	13 11.49	16.49	1.88	IV.	3	35.133	24 38.04	27.55	3.33	13 29.86	29 20 38.92
14	7	. .	. .	. .	. .	21.7	. .	. .	14 4.11	16.48	2.14	V.	4	57.065	1 39.90	27.40	0.59	14 22.73	28 57 37.89
15	6	. .	. .	1.	19.5	36.5	. .	. .	15 18.64	16.47	1.67	IV.	2	20.825	39 36.52	27.17	5.17	15 36.78	29 35 38.86
16	8	29.	46.3	4.3	22.3	. .	. .	. .	17 21.85	16.46	1.67	IV.	2	20.470	39 58.98	26.79	5.21	17 39.98	36 0.98
17	7	. .	. .	. .	. .	23.7	. .	. .	18 5.83	16.45	1.53	V.	1	9.260	51 41.63	26.66	6.66	18 23.81	47 44.95
18	7.8	. .	. .	. .	. .	55.	12.5	. .	18 37.06	16.45	1.61	V.	2	15.550	45 7.77	26.56	5.86	18 55.12	41 10.19
19	7	. .	. .	. .	. .	. .	. .	3.3	19 10.31	16.45	1.92	VII.	3	39.353	20 13.77	26.45	2.78	19 28.68	16 13.00
20	8	. .	. .	48.	. .	. .	. .	. .	21 5.65	16.43	1.61	III.	2	15.415	45 16.11	26.12	5.88	21 23.69	41 18.11
21	7	. .	. .	. .	23.	. .	. .	15.	21 21.71	16.43	1.52	IV.	1	8.925	52 2.22	26.08	6.70	21 39.66	48 5.00
22	9	. .	. .	. .	. .	. .	30.	. .	21 54.46	16.43	1.61	VI.	2	15.773	44 53.51	25.98	5.83	22 12.50	40 55.32
23	9	. .	. .	. .	. .	. .	34.	. .	24 58.73	16.40	1.92	VI.	4	40.600	18 52.16	25.44	2.63	25 17.05	29 14 50.23
24	8.7	. .	. .	22.	. .	. .	. .	. .	26 21.80	16.39	2.11	III.	4	55.190	3 37.58	25.15	0.82	26 40.30	28 59 33.55
25	7	. .	. .	. .	. .	. .	2.	. .	26 44.40	16.39	2.11	VI.	4	54.703	4 7.67	25.19	0.90	27 2.90	29 0 3.76
26	7.8	. .	54.	. .	29.	. .	. .	. .	28 11.43	16.37	1.99	IV.	4	46.460	12 45.06	24.82	1.91	28 29.79	8 41.79
27	7.8	. .	. .	. .	. .	. .	29.	. .	19 28 53.84	+16.37	+2.05	VI.	4	50.550	− 8 28.21	−24.75	−1.40	19 29 12.26	−29 4 24.36

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 132	Sept. 16, 18 55	. .	. .	. .	. .	. .	. .	. .	30.090	67.0	63.0			
	19 0	68 17 31.9	30.5	26.1	19.5	19.8	33.4	26.87[a]	. .	. .	. .	67.0	. .	63.0
	19 15	. .	. .	. .	. .	. .	. .	. .	30.096	67.0	63.7			
	20 1	. .	. .	. .	. .	. .	. .	. .	30.097	66.7	62.5			
	21 14	. .	. .	. .	. .	. .	. .	. .	30.098	65.5	60.9			
	22 1	. .	. .	. .	. .	. .	. .	. .	30.102	65.0	59.0			
	22 30	. .	. .	. .	. .	. .	. .	. .	30.094	65.0	58.6			
	23 59	. .	. .	. .	. .	. .	. .	. .	30.088	64.1	57.0			
	1 49	. .	. .	. .	. .	. .	. .	. .	30.070	63.8	56.2			

REMARKS.

(131) 126. Minutes assumed as 15 instead of 14.

(132) 6. Transit observations very discordant.

(132) 24. Transit over T. IV assumed as recorded over T. III, to agree with Arg. Z. 235, 38; 241, 31; and Mer. Cir. Z., 1846.

(132) 25. Transit over T. V assumed as recorded over T. VI, to agree with Arg. Z. 235, 39; 241, 32; and Mer. Cir. Z., 1846.

(132) 26. Transits over T.'s III and V assumed as recorded over T.'s II and IV, to agree with Arg. Z. 235, 40, and Mer. Cir. Z., 1846.

[a] Corr. for runs +0″.08.

ZONE 132. SEPTEMBER 16. P. $D_\circ = -28° 55' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
28	7.8	17.5	35.	53.	. .	. .	. .	. .	19 32 10.40	+16.35	+1.94	III.	4	43.550	−15 47.51	−24.20	−2.25	19 32 28.69	−29 11 43.96
29	7	19.	36.	54.	. .	. .	. .	. .	38 11.75	16.30	1.70	III.	3	24.750	35 28.96	23.18	4.66	38 29.75	31 26.80
30	8	. .	. .	. .	52.	. .	. .	. .	38 51.72	16.30	2.03	IV.	4	51.220	7 46.57	23.08	1.32	39 10.05	3 40.97
31	6.7	. .	. .	. .	32.	49.5	. .	. .	39 31.73	16.29	1.96	IV.	4	45.953	13 16.67	22.96	1.96	39 49.98	9 11.59
32	7.8	59.	16.3	35.	. .	. .	. .	. .	45 52.16	16.24	1.70	III.	3	26.970	33 9.73	21.94	4.37	46 10.10	29 6.04
33	8	. .	. .	. .	6.5	. .	. .	. .	46 5.60	16.24	1.62	IV.	2	20.500	39 57.10	21.90	5.21	46 23.46	35 54.21
34	7	. .	. .	. .	. .	36.	53.5	. .	46 18.11	16.24	1.63	V.	2	21.550	38 51.22	21.87	5.07	46 35.98	29 34 48.16
35	8	. .	. .	. .	. .	. .	58.5	. .	48 23.39	16.22	2.07	VI.	4	55.360	3 26.67	21.54	0.80	48 41.68	28 59 19.01
36	7	. .	. .	. .	. .	30.	. .	. .	49 12.38	16.22	2.02	V.	4	51.720	7 14.97	21.41	1.26	49 30.62	29 3 7.64
37	7	. .	. .	. .	. .	. .	10.7	. .	49 35.42	16.21	1.87	VI.	3	40.355	19 10.92	21.35	2.67	49 53.50	29 15 4.94
38	6.7	. .	. .	43.	1.	. .	. .	. .	51 0.64	16.20	2.06	IV.	4	55.180	3 38.21	21.13	0.82	51 18.90	28 59 30.16
39	8.9	17.	34.	52.	. .	. .	. .	. .	53 9.47	16.19	2.02	III.	4	53.485	5 24.54	20.80	1.04	53 27.68	29 1 16.38
40	7	49.7	7.	25.5	44.	. .	. .	. .	55 42.91	16.17	1.67	IV.	3	26.393	33 46.50	20.41	4.45	56 0.75	29 41.36
41	8	. .	. .	24.3	43.	. .	. .	. .	56 42.03	16.16	1.62	IV.	3	22.200	38 9.55	20.26	4.98	56 59.81	34 4.79
42	7	. .	. .	. .	. .	35.5	53.	. .	57 17.49	16.15	1.41	V.	2	6.680	54 24.47	20.16	7.02	57 35.05	50 21.65
43	9	. .	. .	. .	51.	. .	. .	. .	19 58 50.42	16.14	1.78	IV.	3	36.173	23 32.87	19.95	3.19	19 59 8.34	19 26.01
44	7	1.	18.3	36.	. .	. .	. .	. .	20 1 53.63	16.12	1.92	III.	4	47.097	12 5.00	19.46	1.79	20 2 11.67	7 56.25
45	9.10	. .	. .	. .	. .	. .	23.	. .	1 47.84	16.12	1.97	VI.	4	50.855	8 8.89	19.48	1.32	2 5.93	3 59.69
46	9	. .	46.	. .	. .	. .	. .	. .	10 21.74	16.05	1.51	II.	2	15.900	44 45.05	18.18	5.83	10 39.30	40 39.06
47	7.8	. .	. .	25.	. .	. .	. .	. .	10 42.63	16.05	1.56	III.	2	20.510	39 56.16	18.13	5.23	11 0.24	35 49.52
48	8	. .	. .	. .	55.	12.	. .	47.	10 54.03	16.04	1.59	IV.	2	22.000	43 36.54	18.10	5.69	11 11.66	39 30.33
49	6.7	. .	. .	. .	56.	13.	. .	48.	10 55.03	16.04	1.58	IV.	2	21.678	43 56.75	18.10	5.77	11 12.65	39 50.62
50	9	. .	. .	. .	. .	. .	1.	. .	12 25.54	16.03	1.59	VI.	2	22.475	37 53.17	17.87	4.97	12 43.16	33 46.01
51	8	. .	. .	. .	. .	. .	0.	. .	13 24.49	16.02	1.54	VI.	2	18.825	41 41.97	17.72	5.46	13 42.05	37 35.15
52	7	. .	36.	54.	12.5	. .	. .	. .	15 11.64	16.01	1.59	IV.	2	22.900	37 26.31	17.45	4.91	15 29.24	33 18.67
53	8	. .	. .	. .	. .	56.	. .	. .	15 38.28	16.00	1.75	V.	3	35.000	24 46.57	17.38	3.34	15 56.83	20 37.29
54	6	. .	. .	. .	. .	. .	33.	. .	15 57.79	16.00	1.89	VI.	4	46.330	12 52.91	17.33	1.89	16 15.68	8 42.13
55	7	. .	. .	. .	. .	. .	38.	. .	17 2.54	15.99	1.60	VI.	3	22.753	37 35.03	17.17	4.93	17 20.13	33 27.13
56	7.8	. .	. .	. .	. .	. .	34.5	52.	17 59.09	15.99	1.77	VI.	3	37.392	22 16.77	17.02	3.03	18 16.85	18 6.82
57	8.9	. .	38.	56.	. .	. .	. .	. .	20 13.62	15.97	1.61	III	3	24.857	35 22.25	16.69	4.66	20 31.20	31 13.60
58	6.7	34.	52.	9.7	28.3	44.7	. .	. .	21 27.28	15.96	1.49	IV.	2	14.712	40 46.53	16.51	5.38	21 44.73	36 38.42
59	8.9	. .	. .	37.	. .	. .	. .	. .	22 54.51	15.94	1.92	III.	4	48.460	10 39.64	16.30	1.61	23 12.37	6 27.55
60	7	. .	. .	. .	14.3	32.5	. .	7.7	23 14.57	15.94	1.93	IV.	4	49.003	10 5.47	16.25	1.54	23 32.44	5 53.26
61	7	. .	. .	. .	. .	38.	55.3	. .	24 19.91	15.93	1.41	V.	1	8.863	52 6.31	16.10	6.75	24 37.25	47 59.16
62	8.9	. .	. .	. .	. .	. .	3.	. .	25 27.82	15.92	1.92	VI.	4	48.790	10 18.40	15.93	1.57	25 45.66	6 5.90
63	7	57.	14.	31.7	. .	7.	. .	42.5	27 49.46	15.90	1.82	III.	4	41.500	17 56.09	15.59	2.50	28 7.18	13 44.18
64	7.8	50.	7.5	25.3	. .	. .	. .	. .	30 42.95	15.88	1.70	III.	3	31.940	27 57.84	15.17	3.72	31 0.53	23 46.73
65	7	. .	46.	4.	22.	. .	. .	. .	32 21.49	15.87	1.77	IV.	3	37.885	21 45.28	14.95	2.97	32 39.13	17 33.20
66	7	. .	. .	. .	. .	56.	. .	. .	33 38.29	15.86	1.76	V.	3	37.300	22 22.48	14.77	3.04	33 55.91	18 10.29
67	8	. .	. .	55.	. .	. .	. .	. .	35 12.68	15.84	1.38	III.	1	8.007	52 59.54	14.55	6.87	35 29.90	48 50.96
68	8.9	. .	. .	. .	. .	55.	. .	. .	35 37.19	15.84	1.54	V.	3	20.970	39 26.79	14.49	5.16	35 54.57	35 16.44
69	7.8	. .	. .	. .	. .	. .	. .	10.	36 17.09	15.83	1.86	VII.	4	45.405	13 50.48	14.40	2.01	36 34.78	9 36.89
70	8.9	. .	. .	. .	. .	. .	. .	5.	37 11.92	15.82	1.71	VII.	3	33.965	25 51.49	14.27	3.46	37 29.45	21 39.22
71	7.8	. .	2.	20.3	39.	. .	. .	. .	39 37.91	15.80	1.54	IV.	2	21.320	39 5.71	13.93	5.12	39 55.25	34 54.76
72	7.8	15.3	33.	. .	. .	. .	. .	. .	41 8.51	15.79	1.56	II.	2	21.960	38 24.79	13.73	5.03	41 25.86	34 13.55
73	8	. .	. .	. .	10.3	27.5	. .	. .	41 9.72	15.79	1.70	IV.	3	32.860	27 0.51	13.73	3.61	41 27.21	22 47.85
74	8	56.	13.	31.3	. .	. .	. .	. .	45 48.59	15.75	1.94	III.	4	51.363	7 37.60	13.11	1.25	46 6.28	3 21.96
75	8	. .	. .	. .	. .	9.5	27.	. .	46 51.58	15.74	1.49	V.	2	18.090	42 28.35	12.98	5.55	47 8.81	38 16.88
76	9	. .	58.	. .	. .	. .	. .	. .	20 50 33.66	+15.71	+1.56	II.	3	23.100	−37 12.07	−12.48	−4.89	20 50 50.93	−29 32 59.44

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE.							Barom.	THERMOM.				
		A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 132	Sept. 16, 2 59	. .	. .	. .	. .	. .	. .	. .	30.062	63.2	54.7	. .	63.0	

REMARKS.

(132) 48. Micrometer reading assumed as 17ʳ.000, not 22ʳ.000, to agree with Mural Z., 1846, September 19, and Arg. Z. 235, 94.

(132) 49. Micrometer reading assumed as 16ʳ.678, not 21ʳ.678, to agree with Mural Z., 1846, September 19, and Arg. Z. 235, 95.

(132) 58. Micrometer reading assumed as 19ʳ.712, not 14ʳ.712.

ZONE 132. SEPTEMBER 16. P. $D_0 = -28° 55' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
77	8	. .	47.	5.	. .	. .	. .	. .	20 51 22.55	+15.71	+1.69	III.	3	33.635	−26 11.64	−12.37	−3.51	20 51 39.95	−29 21 57.52
78	8.9	. .	. .	. .	46.3	. .	21.3	. .	51 45.73	15.71	1.63	IV.	3	28.440	31 38.06	12.33	4.19	52 3.07	27 24.58
79	6.7	. .	. .	20.	38.7	55.3	. .	. .	53 37.60	15.69	1.45	IV.	2	14.695	46 1.31	12.09	6.00	53 54.74	41 49.40
80	8	. .	. .	36.	54.3	. .	. .	. .	54 53.45	15.67	1.42	IV.	2	12.502	48 19.07	11.92	6.29	55 10.54	44 7.28
81	9	. .	. .	. .	8.	. .	. .	. .	56 6.95	15.66	1.42	IV.	2	13.300	47 29.04	11.77	6.18	56 23.05	43 16.99
82	8.9	. .	. .	. .	. .	. .	15.	. .	57 39.85	15.65	1.93	VI.	4	51.910	7 2.74	11.57	1.18	57 57.43	2 45.49
83	8	. .	. .	. .	59.	. .	. .	. .	20 58 58.11	15.64	1.52	IV.	2	21.073	39 21.08	11.40	5.15	20 59 15.27	35 7.63
84	8.9	. .	. .	. .	51.	. .	. .	. .	21 0 50.00	15.63	1.45	IV.	2	15.477	45 12.34	11.17	5.91	21 0 7.08	40 59.42
85	6.7	. .	. .	. .	. .	. .	. .	36.	0 43.17	15.63	1.90	VII.	4	50.270	8 45.39	11.19	1.37	0 0.70	4 27.95
86	7.8	. .	. .	. .	15.	32.	. .	. .	1 14.52	15.62	1.89	IV.	4	48.975	10 7.16	11.12	1.52	1 32.03	5 49.80
87	8	. .	. .	. .	. .	. .	7.	. .	1 31.73	15.62	1.76	VI.	4	41.062	18 23.19	11.09	2.54	1 49.11	14 6.82
88	8	. .	. .	. .	. .	. .	. .	53.3	2 0.11	15.61	1.60	VII.	3	26.445	33 43.49	11.03	4.46	2 17.32	29 28.98
89	8	. .	32.3	50.	. .	. .	. .	. .	4 7.71	15.60	1.66	III.	3	31.890	28 0.98	10.77	3.74	4 24.97	23 45.49
90	8.9	. .	. .	. .	. .	. .	59.	. .	4 23.59	15.60	1.60	VI.	3	27.005	33 8.23	10.74	4.38	4 40.79	28 53.35
91	9	. .	. .	. .	. .	59.	. .	. .	5 41.15	15.59	1.43	V.	2	13.760	46 59.98	10.58	6.15	5 58.17	42 46.71
92	9	. .	. .	. .	. .	2.	. .	. .	6 44.30	15.58	1.75	V.	4	38.383	21 11.59	10.46	2.89	7 1.63	16 54.94
93	8	. .	. .	. .	. .	. .	50.3	. .	7 15.10	15.57	1.86	VI.	4	47.087	12 5.31	10.39	1.77	7 32.53	7 47.47
94	7.8	. .	. .	36.	54.5	. .	. .	. .	8 53.74	15.55	1.73	IV.	3	36.325	23 23.39	10.19	3.16	9 11.02	19 6.74
95	6.7	. .	. .	27.	45.5	. .	. .	37.5	9 44.60	15.55	1.67	IV.	3	32.220	27 40.84	10.09	3.69	10 1.82	23 24.62
96	7	44.	1.3	19.3	38.3	. .	. .	. .	12 37.12	15.53	1.36	IV.	1	8.753	52 13.08	9.76	6.80	12 54.01	47 59.64
97	9	. .	. .	46.	. .	. .	. .	. .	14 3.65	15.51	1.43	III.	2	14.113	46 37.71	9.59	6.11	14 20.59	42 23.41
98	8	. .	57.2	. .	34.	. .	. .	. .	17 32.98	15.48	1.47	IV.	2	17.025	43 35.07	9.19	5.71	17 49.93	39 19.97
99	9	. .	. .	. .	. .	. .	24.	. .	17 48.40	15.48	1.38	VI.	1	9.630	51 18.35	9.16	6.68	18 5.26	47 4.19
100	7.8	22.3	39.7	58.	. .	. .	. .	. .	21 15.40	15.45	1.59	III.	3	26.313	33 51.15	8.78	4.47	21 32.44	29 34.40
101	8	. .	. .	. .	. .	11.3	. .	. .	21 53.57	15.44	1.67	V.	3	32.562	27 19.64	8.73	3.65	22 10.68	29 23 2.02
102	8	. .	. .	. .	. .	. .	26.	. .	22 50.89	15.43	1.95	VI.	4	54.700	4 7.86	8.61	0.79	23 8.27	28 59 47.26
103	7.8	40.	57.5	16.	. .	. .	. .	. .	25 33.27	15.41	1.55	III.	3	23.013	37 18.03	8.31	4.91	25 50.23	29 33 1.25
104	9	. .	. .	. .	. .	52.	. .	. .	25 34.22	15.41	1.59	V.	3	26.320	33 51.33	8.31	4.47	25 51.22	29 34.11
105	8.9	3.3	20.5	. .	. .	. .	. .	. .	27 56.10	15.39	1.69	II.	3	34.270	25 31.36	8.06	3.43	28 13.18	21 12.85
106	7	. .	. .	. .	56.	13.3	. .	. .	27 55.54	15.39	1.75	IV.	3	38.625	20 58.99	8.06	2.86	28 12.68	16 39.91
107	9	42.	. .	. .	35.5	. .	. .	. .	31 34.91	15.36	1.78	IV.	3	40.255	19 16.80	7.68	2.65	31 52.05	14 57.13
108	9	. .	26.	. .	. .	. .	. .	. .	34 1.53	15.34	1.70	II.	3	33.740	26 4.42	7.44	3.49	34 18.57	21 45.35
109	8.9	. .	41.	59.	. .	. .	. .	. .	35 16.39	15.33	1.95	III.	4	53.400	5 29.87	7.32	0.96	35 33.67	1 8.15
110	6.7	. .	55.3	13.	31.5	. .	. .	. .	36 30.75	15.31	1.66	IV.	3	31.015	28 56.32	7.19	3.85	36 47.72	24 37.36
111	9	. .	. .	. .	. .	52.5	. .	. .	37 34.75	15.30	1.66	V.	3	30.740	29 13.82	7.09	3.89	37 51.71	24 54.80
112	9	. .	. .	. .	. .	. .	51.5	. .	38 16.06	15.30	1.59	VI.	3	25.445	34 46.30	7.02	4.58	38 32.95	30 27.90
113	8	. .	. .	. .	54.3	. .	29.3	. .	39 53.98	15.28	1.83	IV.	4	44.205	15 6.49	6.86	2.13	40 11.09	10 45.48
114	8.9	. .	. .	. .	. .	23.	. .	. .	41 5.31	15.27	1.79	V.	4	40.990	18 27.89	6.75	2.55	41 22.37	14 7.19
115	8.9	. .	. .	. .	49.	. .	. .	. .	42 48.44	15.26	1.74	IV.	3	36.863	22 49.39	6.60	3.09	43 5.44	18 29.08
116	9	. .	. .	. .	43.	. .	. .	. .	43 42.10	15.25	1.52	IV.	2	20.490	39 57.73	6.50	5.24	43 58.87	35 39.47
117	8.9	. .	. .	. .	. .	. .	33.	. .	43 57.60	15.25	1.62	VI.	3	27.710	32 23.99	6.48	4.29	44 14.47	28 4.76
118	7	. .	. .	. .	. .	. .	17.3	35.	44 41.94	15.24	1.70	VI.	3	33.643	26 11.83	6.42	3.51	44 58.88	21 51.76
119	8	. .	. .	. .	. .	. .	. .	30.	45 36.77	15.24	1.57	VII.	3	23.500	36 48.29	6.34	4.85	45 53.58	32 29.48
120	7	. .	. .	33.	51.	. .	. .	. .	47 50.39	15.22	1.57	IV.	3	24.295	35 58.15	6.13	4.74	48 7.18	31 39.02
121	7	41.3	59.	17.3	. .	. .	. .	. .	50 34.76	15.19	1.39	III.	1	10.350	50 32.65	5.88	6.60	50 51.34	46 15.13
122	7	. .	. .	. .	54.	11.	. .	. .	50 53.34	15.19	1.72	IV.	3	35.395	24 21.73	5.86	3.28	51 10.25	20 0.87
123	6	. .	. .	. .	56.	13.	. .	. .	51 55.47	15.18	1.84	IV.	4	44.670	14 37.21	5.77	2.07	52 12.49	10 15.05
124	8.9	. .	57.	. .	. .	. .	. .	. .	53 32.53	15.17	1.70	II.	3	33.640	26 10.76	5.63	3.51	53 49.40	21 49.90
125	8.9	. .	. .	. .	29.3	. .	. .	. .	21 54 26.74	+15.16	+1.74	IV.	3	36.820	−22 52.09	− 5.55	−3.10	21 54 43.64	−29 18 30.74

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(132) 84. Minutes assumed as 59 instead of 0, to agree with Transit Z., 1846, August 18.

(132) 85. Minutes assumed as 59 instead of 0, to agree with Arg. Z. 228, 1; and 245, 30.

(132) 111. Differs from Transit Z., 1846, September 22, by $2^s.17$ in right ascension and $1' 32''.5$ in declination.

(132) 125. T. IV assumed as $27^s.3$ instead of $29^s.3$, to agree with Transit Z., 1846, September 24.

ZONE 132. SEPTEMBER 16. P. $D_0 = -28° 55' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
126	7	. .	. .	29.	47.	4.	. .	. .	21 55 46.49	+15.15	+1.85	IV.	4	45.280	−13 59.08	− 5.44	−2.01	21 56 3.49	−29 9 36.53
127	7	28.5	46.	4.3	22.3	. .	. .	. .	57 21.63	15.14	1.65	IV.	3	29.737	30 16.50	5.30	4.03	57 38.42	25 55.83
128	7	. .	. .	. .	. .	. .	. .	13.	21 57 19.55	15.14	1.37	VII.	1	8.725	52 15.03	5.30	6.80	21 57 36.06	47 57.13
129	6.7	16.7	34.	52.	9.5	. .	. .	. .	22 1 9.35	15.10	1.95	IV.	4	52.880	6 2.29	4.98	1.00	22 1 26.40	1 38.27
130	9	. .	. .	. .	. .	. .	. .	13.	4 20.21	15.07	1.96	VII.	4	52.875	6 1.85	4.72	1.00	4 37.24	1 37.57
131	8.9	. .	. .	. .	. .	. .	27.	. .	5 51.50	15.06	1.52	VI.	2	19.300	41 12.42	4.59	5.39	6 8.08	29 36 52.40
132	6	. .	. .	. .	. .	. .	9.	26.5	10 33.84	15.02	2.02	VI.	4	56.815	1 55.20	4.21	0.51	10 50.88	28 57 29.92
133	8	. .	. .	34.	52.3	9.3	. .	. .	12 51.53	15.00	1.59	IV.	3	24.350	35 54.70	4.03	4.75	13 8.12	29 31 33.48
134	7.8	34.5	52.3	10.	28.3	. .	. .	. .	15 27.63	14.98	1.67	IV.	3	29.800	30 12.49	3.82	4.01	15 44.28	25 5[illegible].32
135	8	18.	35.	53.	. .	. .	. .	. .	17 10.72	14.96	1.64	III.	3	27.007	33 7.41	3.69	4.39	17 27.32	28 45.49
136	8	. .	. .	. .	42.3	. .	. .	. .	17 41.96	14.96	1.91	IV.	4	48.095	11 2.47	3.64	1.62	17 58.83	6 37.73
137	9	. .	. .	41.5	. .	. .	. .	. .	19 59.10	14.94	1.63	III.	3	25.720	34 28.16	3.46	4.56	20 15.67	30 6.18
138	8	. .	. .	. .	42.5	. .	. .	. .	20 41.73	14.93	1.63	IV.	3	26.450	33 42.92	3.41	4.46	20 58.29	29 20.79
139	7	. .	. .	. .	. .	. .	19.	36.3	20 43.40	14.93	1.68	VI.	3	30.198	29 48.02	3.41	3.96	21 0.01	25 25.39
140	9	. .	6.	. .	. .	. .	. .	. .	23 41.55	14.91	1.71	II.	3	31.740	28 9.89	3.20	3.76	23 58.17	23 46.85
141	7	. .	. .	. .	20.	37.	. .	. .	24 19.02	14.90	1.44	IV.	1	11.340	49 30.88	3.15	6.49	24 35.36	45 10.52
142	8	. .	41.3	59.2	17.7	. .	. .	. .	26 16.87	14.89	1.59	IV.	3	21.925	38 26.61	3.01	5.06	26 33.35	34 4.68
143	7	. .	. .	. .	5.	. .	. .	. .	27 4.50	14.88	1.83	IV.	3	40.010	19 32.05	2.95	2.67	27 21.21	15 7.67
144	9	. .	. .	. .	. .	. .	51.	. .	27 15.68	14.88	1.77	VI.	3	35.880	23 51.37	2.94	3.21	27 32.33	19 27.52
145	7	. .	. .	. .	4.	. .	. .	. .	29 2.84	14.86	1.40	IV.	1	7.385	53 39.15	2.81	7.02	29 19.10	49 18.98
146	6	. .	. .	49.5	7.	. .	. .	. .	30 6.64	14.85	1.62	IV.	3	24.340	35 55.33	2.73	4.75	30 23.11	31 32.81
147	6.7	. .	. .	53.7	12.	. .	. .	. .	31 11.20	14.85	1.55	IV.	2	18.580	41 57.54	2.67	5.53	31 27.60	37 35.74
148	7	. .	. .	. .	. .	. .	. .	59.	31 6.14	14.85	1.94	VII.	4	48.460	10 38.89	2.68	1.57	31 22.93	6 13.14
149	7	. .	. .	. .	. .	. .	. .	1.	31 8.13	14.85	1.92	VII.	4	47.105	12 3.80	2.68	1.75	31 24.90	7 38.23
150	7	. .	. .	. .	25.	. .	. .	. .	34 24.31	14.82	1.70	IV.	3	30.580	29 23.67	2.46	3.91	34 40.83	25 0.04
151	8	35.	. .	10.	28.3	. .	. .	. .	39 27.72	14.77	1.79	IV.	3	36.743	22 56.98	2.15	3.10	39 44.28	18 32.23
152	7.8	. .	. .	. .	16.3	. .	. .	. .	40 15.58	14.77	1.70	IV.	3	28.830	31 13.35	2.10	4.16	40 32.05	26 49.61
153	8	. .	20.	38.	56.	. .	. .	. .	44 55.50	14.73	1.87	IV.	4	42.300	17 6.05	1.86	2.37	45 12.10	12 40.28
154	7	5.	22.	40.	58.5	15.3	. .	. .	47 57.69	14.70	1.73	IV.	3	31.225	28 43.27	1.70	3.82	48 14.12	24 18.79
155	7.8	18.	35.	53.	. .	. .	. .	. .	50 10.52	14.68	1.95	III.	4	48.320	10 48.43	1.58	1.59	50 27.15	29 6 21.60
156	8	. .	. .	. .	. .	29.	. .	. .	50 11.42	14.68	2.07	V.	4	57.200	1 31.50	1.58	0.45	50 28.17	28 57 3.53
157	7	58.	15.3	33.5	52.	. .	26.3	. .	52 51.02	14.66	1.56	IV.	2	16.795	43 49.44	1.47	5.74	53 7.24	29 39 26.65
158	5.6	48.7	6.	23.5	. .	. .	. .	. .	55 41.22	14.64	2.02	III.	4	51.833	7 7.89	1.35	1.14	55 57.88	2 40.38
159	7.8	. .	. .	. .	. .	57.	. .	. .	56 39.30	14.63	1.83	V.	3	38.020	21 37.13	1.30	2.93	56 55.76	17 11.36
160	8.9	18.	. .	54.	. .	. .	. .	. .	59 11.25	14.61	1.77	III.	3	31.813	28 5.82	1.19	3.75	22 59 27.63	23 40.76
161	8.9	. .	. .	. .	58.5	. .	32.7	. .	22 59 57.37	14.60	1.58	IV.	2	18.213	42 20.64	1.16	5.54	23 0 13.55	37 57.34
162	5.6	. .	. .	26.	. .	1.5	. .	. .	23 1 43.65	14.59	1.49	IV.	1	10.980	49 53.29	1.10	6.56	1 59.73	45 30.95
163	7.	. .	. .	. .	. .	. .	43.	. .	2 7.72	14.58	1.88	VI.	4	40.613	18 51.35	1.07	2.57	2 24.18	14 24.99
164	8	3.	21.	38.3	56.3	. .	. .	. .	4 55.98	14.56	1.89	IV.	4	41.377	18 3.93	0.99	2.48	5 12.43	13 37.40
165	8	. .	36.	54.	. .	. .	. .	. .	6 11.50	14.55	1.87	III.	4	38.703	20 51.40	0.94	2.84	6 27.92	16 25.18
166	7.8	59.	16.	. .	. .	. .	. .	. .	7 51.60	14.54	1.93	II.	4	43.313	16 2.25	0.89	2.22	8 8.07	11 35.36
167	9	. .	. .	1.5	20.	. .	. .	. .	8 19.16	14.54	1.71	IV.	3	25.720	34 28.54	0.87	4.56	8 35.41	30 3.97
168	7	. .	. .	. .	. .	6.	24.	. .	8 48.56	14.53	1.95	V.	4	44.930	19 34.41	0.85	2.00	9 5.04	15 7.26
169	6.7	. .	. .	52.	10.3	. .	. .	. .	10 9.65	14.52	1.86	IV.	4	37.495	22 7.37	0.81	3.00	10 26.03	17 41.18
170	7.8	. .	. .	. .	45.	2.	. .	. .	11 44.44	14.51	1.93	IV.	4	42.475	16 55.00	0.76	2.33	11 0.88	12 28.09
171	6.7	18.	36.	53.5	. .	. .	. .	. .	15 11.24	14.48	1.73	III.	3	26.110	34 3.76	0.67	4.51	15 27.45	29 38.94
172	7.8	. .	. .	. .	27.	44.	. .	. .	15 26.28	14.48	1.79	IV.	3	31.182	28 45.97	0.66	3.83	15 42.55	24 20.46
173	7.8	0.	17.3	35.3	53.3	. .	. .	. .	20 52.78	14.44	2.04	IV.	4	49.304	9 46.78	0.51	1.44	21 9.26	5 18.73
174	7	. .	42.	. .	19.	. .	. .	. .	23 23 17.85	+14.42	+1.55	IV.	1	10.270	−50 38.04	− 0.46	−6.67	23 23 33.82	−29 46 15.17

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(132) 137. Differs in right ascension 1ˢ.88 from Transit Z., 1846, September 22.

(132) 163. Transit over T. V assumed as 43ˢ, not 4ˢ.3.

(132) 168. Micrometer reading assumed as 39ʳ.930 instead of 44ʳ.930.

(132) 170. Time of transit across middle thread assumed as 45ˢ, not 4ˢ.5; and minutes assumed as 10 instead of 11, to agree with Arg. Z. 259, 69; and 265, 82.

ZONE 132. SEPTEMBER 16. P. $D_0 = -28° 55' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
175	8.9	10.	. .	45.3	4.	. .	. .	. .	23 25 3.04	+14.41	+1.75	IV.	3	25.620	−34 34.88	− 0.43	−4.57	23 25 19.20	−29 30 9.88
176	7.8	17.	35.	52.5	. .	. .	. .	. .	27 10.28	14.39	1.72	III.	3	22.025	38 20.03	0.38	5.05	27 26.39	33 55.46
177	8.9	. .	. .	. .	. .	42.	. .	. .	27 24.16	14.39	1.62	V.	2	15.175	45 31.31	0.38	5.99	27 40.17	41 7.68
178	8.9	0.	18.	36.	. .	. .	. .	. .	29 53.46	14.37	1.70	III.	2	20.630	39 48.70	0.32	5.25	30 9.53	35 24.27
179	8	. .	. .	23.	. .	. .	. .	. .	30 40.50	14.36	2.06	III.	4	48.777	10 19.53	0.31	1.51	30 56.92	5 51.35
180	8	. .	. .	30.	. .	. .	. .	. .	31 47.67	14.35	1.57	III.	1	10.110	50 47.60	0.29	6.69	32 3.59	46 24.58
181	7	. .	. .	. .	6.	. .	41.5	. .	32 5.92	14.35	2.00	IV.	4	43.665	15 40.24	0.29	2.18	32 22.27	11 12.71
182	8	36.	53.	11.	. .	. .	. .	. .	34 28.47	14.33	2.14	III.	4	53.590	5 17.90	0.25	0.88	34 44.94	0 49.03
183	8	40.	57.	15.3	. .	. .	. .	. .	36 32.89	14.32	1.72	III.	2	21.250	39 9.85	0.22	5.16	36 48.93	34 45.23
184	8	49.5	6.	24.	. .	. .	. .	. .	38 41.97	14.30	1.70	III.	2	18.935	41 34.94	0.19	5.46	38 57.97	29 37 10.59
185	3.4	. .	. .	32.5	. .	8.	. .	. .	40 50.19	14.28	2.21	IV.	4	56.713	2 2.03	0.16	0.48	41 6.68	28 57 32.67
186	7.8	. .	. .	. .	. .	58.	. .	. .	41 40.34	14.28	2.04	V.	4	44.330	14 58.60	6.16	2.09	41 56.66	29 10 30.85
187	7.8	58.	15.7	33.3	. .	. .	. .	. .	43 50.89	14.26	2.05	III.	4	45.120	14 8.98	0.14	1.99	44 7.20	9 41.11
188	8	. .	22.	39.5	. .	. .	. .	. .	44 57.22	14.25	2.03	III.	4	43.560	15 46.89	0.13	2.19	45 13.50	11 19.21
189	8.9	. .	. .	44.	. .	19.	. .	. .	46 1.42	14.24	1.95	V.	3	35.933	23 47.98	0.12	3.20	46 17.61	19 21.30
190	8.9	. .	27.	45.	. .	. .	. .	. .	51 2.60	14.21	1.83	IV.	3	26.540	33 37.22	0.08	4.45	51 18.64	29 11.75
191	7	30.5	48.	6.	24.5	. .	. .	. .	53 23.62	14.19	1.79	IV.	3	22.340	38 0.83	0.08	5.01	53 39.60	33 35.92
192	8	. .	. .	8.	. .	. .	. .	. .	54 25.58	14.18	1.90	III.	3	31.275	28 39.75	0.07	3.82	54 41.66	24 13.64
193	8	. .	4.	. .	. .	. .	. .	. .	55 39.45	14.17	2.02	II.	4	39.910	19 35.44	0.07	2.68	55 55.64	15 8.19
194	8	. .	. .	. .	. .	59.	. .	. .	55 41.31	14.17	2.05	V.	4	41.430	18 0.48	0.07	2.47	55 57.53	13 33.02
195	7.8	. .	. .	. .	. .	. .	31.	48.	55 55.39	14.17	2.06	VI.	4	41.260	18 10.84	0.07	2.49	56 11.62	13 43.40
196	8	. .	. .	. .	. .	. .	. .	37.5	56 44.14	14.16	1.69	VII.	2	15.095	45 35.95	0.07	6.00	23 56 59.99	41 12.02
197	8.9	3.	. .	38.5	. .	. .	. .	. .	23 59 55.89	14.14	2.10	III.	4	45.250	14 0.89	0.06	1.97	0 0 12.13	9 32.92
198	9	. .	. .	51.5	. .	. .	. .	. .	0 1 9.02	+14.13	+2.10	III.	4	44.950	−14 19.58	− 0.06	−1.98	0 0 25.25	−29 9 51.62

ZONE 133. SEPTEMBER 16. P. $D_0 = -28° 55' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	38.	55.	13.	31.5	48.5	. .	. .	1 49 30.74	+13.51	+1.56	IV.	2	19.710	−40 46.57	− 5.32	−5.44	1 49 45.81	−29 36 27.33
2	8	. .	. .	30.5	. .	. .	. .	. .	50 48.13	13.51	1.55	III.	2	21.195	39 13.37	5.45	5.21	51 3.19	34 54.03
3	8	. .	. .	. .	. .	19.	. .	. .	51 1.21	13.51	1.57	V.	2	23.180	37 8.93	5.47	4.95	51 16.29	32 49.35
4	7.8	27.	44.5	2.	. .	. .	. .	. .	55 19.67	13.49	1.76	III.	4	50.840	8 10.15	5.90	1.19	55 34.93	3 47.24
5	7	1.5	19.	. .	. .	. .	. .	. .	57 54.26	13.48	1.73	II.	4	49.883	9 9.97	6.15	1.32	58 9.47	4 47.44
6	7	. .	. .	58.	. .	. .	. .	. .	58 15.50	13.48	1.71	III.	4	48.840	10 15.57	6.19	1.46	58 30.69	5 53.22
7	7	. .	. .	. .	. .	. .	51.3	9.	1 58 16.00	13.48	1.64	VI.	3	38.645	20 58.05	6.19	2.83	1 58 31.12	16 37.07
8	8	. .	. .	9.3	. .	45.	. .	. .	2 0 27.06	13.47	1.46	V.	2	19.490	41 0.55	6.41	5.49	2 0 41.99	36 42.45
9	8.9	. .	. .	. .	. .	. .	49.	. .	2 13.60	13.46	1.52	VI.	3	28.663	31 24.26	6.60	4.19	1 28.58	27 5.05
10	7	. .	. .	. .	. .	4.	21.	. .	2 45.79	13.46	1.39	V.	2	13.373	47 24.47	6.65	6.35	3 0.64	43 7.47
11	7.8	13.	30.	48.3	. .	. .	. .	. .	5 5.93	13.45	1.39	III.	2	16.565	44 3.88	6.90	5.87	5 20.77	39 46.65
12	8.9	36.	53.7	11.5	. .	. .	. .	. .	6 29.08	13.45	1.51	III.	3	31.990	27 54.77	7.05	3.62	6 44.04	23 35.44
13	9	. .	. .	. .	. .	. .	4.5	. .	6 28.96	13.45	1.37	VI.	2	15.830	44 49.94	7.05	5.97	6 43.78	40 32.96
14	7.8	19.	36.5	54.3	. .	. .	. .	. .	9 11,89	13.44	1.53	III.	3	38.233	21 23.26	7.33	2.88	9 26.86	17 3.47
15	7.8	11.3	28.5	46.3	4.	. .	. .	. .	11 3.83	13.43	1.62	IV.	4	50.580	8 26.65	7.53	1.19	11 18.88	4 5.37
16	8	. .	. .	52.	. .	27.5	. .	. .	12 9.66	13.43	1.35	IV.	2	19.200	41 18.70	7.65	5.53	12 24.44	37 1.88
17	8	25.3	42.5	0.5	. .	. .	. .	. .	16 18.30	13.41	1.28	III.	2	12.960	47 49.94	8.13	6.39	16 32.99	43 34.46
18	7	59.5	16.7	34.5	. .	10.	. .	. .	17 52.23	13.41	1.45	III.	3	35.560	24 10.93	8.31	3.23	18 7.09	19 52.47
19	7.8	12.5	30.	48.	6.	. .	. .	. .	21 5.48	13.40	1.35	IV.	3	27.580	32 31.89	8.68	4.34	21 20.23	28 14.91
20	8	48.7	6.	24.	. .	. .	. .	. .	23 41.53	13.39	1.41	III.	3	37.020	22 39.23	8.99	3.04	23 56.33	18 21.26
21	8	. .	. .	58.3	. .	. .	. .	. .	2 24 15.88	+13.39	+1.33	III.	3	28.620	−31 26.27	− 9.06	−4.21	2 24 30.60	−29 27 9.54

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(132) 198. Minutes assumed as 0 instead of 1.

(133) 9. Minutes assumed as 1 instead of 2.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 133. SEPTEMBER 16. P. $D_0 = -28° 55' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	7	30.5	48.	6.	24.	41.			2 28 23.43	+13.38	+1.28	IV.	3	34.160	−25 39.14	− 9.55	−3.44	2 28 38.09	−29 21 22.13
23	8.9				21.				29 20.01	13.37	1.18	IV.	2	16.130	44 31.31	9.66	5.93	29 34.56	40 16.92
24	7			1.	19.3	36.3			30 18.48	13.37	1.19	IV.	2	17.340	43 15.49	9.78	5.77	30 33.04	39 1.04
25	9	18.3	35.5						35 10.99	13.36	1.38	II.	4	43.697	15 37.97	10.39	2.13	35 25.73	11 20.49
26	8				36.3		11.5		35 36.04	13.36	1.37	IV.	4	42.120	17 17.21	10.44	2.34	35 50.77	12 59.99
27	7				4.7				37 3.98	13.35	1.22	IV.	3	29.040	31 0.23	10.62	4.15	37 18.55	26 45.00
28	8						47.		37 11.83	13.35	1.40	VI.	4	50.233	8 48.09	10.64	1.23	36 26.58	4 29.96
29	8				10.5				39 9.94	13.35	1.28	IV.	3	37.330	22 20.35	10.88	3.00	39 24.57	18 4.23
30	8.9		16.5						41 51.89	13.34	1.32	II.	4	44.780	14 30.00	11.23	1.99	42 6.55	10 13.22
31	9				39.				42 38.00	13.34	1.05	IV.	2	15.420	45 15.98	11.33	6.02	42 52.39	41 3.33
32	8		44.						44 19.71	13.34	1.08	II.	2	18.887	41 37.58	11.55	5.56	44 34.13	37 24.69
33	8.9	49.		24.3					47 41.93	13.33	1.13	III.	3	28.065	32 1.03	12.00	4.27	47 56.39	27 47.30
34	7	47.7	5.	23.3	41.3	58.3			49 40.66	13.32	1.07	IV.	3	22.580	37 45.70	12.26	5.04	49 55.05	33 33.00
35	6.7	35.3	52.5	10.7	29.	46.			52 28.23	13.32	1.06	IV.	3	25.623	34 34.69	12.64	4.59	52 42.61	30 21.92
36	7.8	54.7		30.	47.5				54 47.37	13.31	1.28	IV.	4	52.770	6 9.20	12.96	0.90	55 1.96	1 53.06
37	7.8	39.5	57.	14.7					2 59 32.42	+13.30	+1.06	III.	3	32.113	−27 47.12	−13.62	−3.71	2 59 46.78	−29 23 34.45

ZONE 134. SEPTEMBER 21. P. $D_0 = -24° 32' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8				12.			2.	20 1 10.83	+14.71	+0.22	IV.	2	12.123	−48 42.80	−23.73	−4.68	20 1 25.76	−25 21 41.21
2	8					32.			2 15.06	14.70	0.45	V.	4	51.963	6 59.73	23.55	0.97	2 30.21	24 39 54.25
3	8.9						21.		2 47.15	14.70	0.43	VI.	4	48.913	10 10.74	23.46	1.26	3 2.28	24 43 5.46
4	8							22.5	3 31.29	14.69	0.26	VII.	2	18.600	41 56.10	23.34	4.06	3 46.24	25 14 53.50
5	9			40.			31.		5 56.97	14.67	0.38	VI.	3	38.610	21 0.37	22.94	2.17	6 12.02	24 53 55.48
6	8	3.	19.5	36.5					8 53.56	14.65	0.40	III.	4	42.503	16 53.24	22.45	1.84	9 8.61	49 47.53
7	8.9					11.			8 54.04	14.65	0.43	V.	4	48.290	10 50.25	22.45	1.31	9 9.12	24 43 44.01
8	8.9			9.		43.3			10 26.07	14.64	0.30	IV.	3	25.375	34 50.38	22.20	3.43	10 41.01	25 7 46.01
9	8				32.				11 31.07	14.63	0.25	IV.	2	17.560	43 1.62	22.03	4.16	11 45.95	15 57.81
10	9							18.	11 26.78	14.63	0.26	VII.	2	17.990	42 34.31	22.04	4.12	11 41.67	15 30.47
11	8			26.					13 42.97	14.62	0.21	III.	1	9.760	51 9.50	21.67	4.90	13 57.80	24 6.07
12	7.8					5.			13 47.80	14.62	0.19	V.	1	6.220	54 52.47	21.66	5.26	14 2.61	25 27 49.39
13	8					59.5			14 42.56	14.61	0.44	V.	4	53.360	5 32.32	21.51	0.85	14 57.61	24 38 24.68
14	8					49.			15 32.04	14.60	0.43	V.	4	47.880	11 15.70	21.38	1.35	15 47.07	24 44 8.43
15	8.9				55.5				16 54.50	14.59	0.23	IV.	2	13.925	46 49.57	21.16	4.51	17 9.32	25 19 45.24
16	7						37.		17 2.79	14.59	0.20	VI.	1	9.075	51 53.25	21.14	4.97	17 17.58	24 49.36
17	8						28.		17 53.94	14.58	0.31	VI.	3	26.330	33 50.83	21.01	3.34	18 8.83	25 6 45.18
18	7				19.			10.	19 19.00	14.57	0.46	IV.	4	52.805	6 7.00	20.77	0.90	19 34.03	24 38 58.67
19	7						41.3		23 7.11	14.54	0.22	VI.	2	11.410	49 27.69	20.18	4.76	23 21.87	25 22 22.63
20	6							32.	23 40.65	14.54	0.18	VII.	1	7.165	53 53.22	20.09	5.16	23 55.37	26 48.47
21	8							31.	24 39.84	14.53	0.28	VII.	3	23.270	37 2.84	19.93	3.62	24 54.65	25 9 56.39
22	7			23.	40.5				26 39.94	14.51	0.38	IV.	4	39.250	20 17.28	19.62	2.11	26 54.83	24 53 9.01
23	7.8		58.	15.					28 31.98	14.50	0.38	III.	3	39.080	20 30.07	19.32	2.12	28 46.86	53 21.51
24	7.6				57.			47.3	28 56.56	14.49	0.41	IV.	4	47.230	11 56.78	19.26	1.41	29 11.46	44 47.45
25	6.7	23.	39.5	56.7					31 13.53	14.48	0.44	III.	4	53.850	5 1.42	18.92	0.80	31 28.45	24 37 51.14
26	8.9				59.				31 58.34	14.47	0.32	IV.	3	30.930	29 1.59	18.80	2.91	32 13.13	25 1 53.30
27	8		52.		27.				34 26.21	14.45	0.25	IV.	2	19.810	40 40.21	18.44	3.94	34 40.91	13 32.59
28	8	50.5	7.	24.3					36 41.26	14.43	0.32	III.	3	31.360	28 34.49	18.10	2.86	36 56.01	1 25.45
29	7				25.				20 37 23.85	+14.43	+0.17	IV.	1	6.535	−54 32.45	−17.99	−5.23	20 37 38.45	−25 27 25.67

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 21,	20	. . .	. .	. .	. .	. . .	. . . . .	30.051

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 134	Sept. 21,	20 0	63 54 62.0	59.5	57.8	47.6	46.3	60.3	55.58	30.030	64.0	58.0	64.0	64.0	65.0
		20 26	. .	. .	. .	. .	. .	. .	. .	30.034	63.7	57.8			
		21 12	. .	. .	. .	. .	. .	. .	. .	30.044	63.8	57.0			
		21 21	. .	. .	. .	. .	. .	. .	. .	30.054	63.5	57.0			
		21 59	. .	. .	. .	. .	. .	. .	. .	30.052	63.5	56.0			
		22 11	. .	. .	. .	. .	. .	. .	. .	30.058	63.2	56.2			
		22 45	. .	. .	. .	. .	. .	. .	. .	30.064	63.2	56.5			
		23 2	. .	. .	. .	. .	. .	. .	. .	30.064	63.2	56.0			
		23 29	. .	. .	. .	. .	. .	. .	. .	30.066	63.2	55.4			

REMARKS.

(133) 23. Declination 5′ 12″ discordant from Arg. Z. 336, 113; micrometer reading probably 21r.130, not 16r.130.

(133) 28. Minutes assumed as 36 instead of 37.

Sept. 21. Stars very unsteady and faint; night unfavorable.

ZONE 134. SEPTEMBER 21. P. $D_0 = -24° 32' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
30	8	. .	. .	. .	10.	. .	. .	. .	20 38 9.35	+14.42	+0.32	IV.	3	31.680	−28 14.60	−17.89	−2.83	20 38 24.09	−25 1 5.32
31	8	24.	. .	57.5	. .	. .	. .	. .	43 14.52	14.38	0.41	III.	4	49.015	10 4.65	17.13	1.25	43 29.31	24 42 53.03
32	7.8	. .	. .	33.5	. .	7.5	. .	. .	43 50.44	14.38	0.40	IV.	4	45.615	13 38.00	17.05	1.56	44 5.22	46 26.61
33	6.7	. .	. .	40.	57.5	. .	. .	. .	44 56.96	14.37	0.37	IV.	4	41.670	17 45.37	16.89	1.91	45 11.70	50 34.17
34	7.8	. .	41.3	58.5	. .	. .	. .	. .	46 15.35	14.36	0.39	III.	4	44.075	15 14.53	16.70	1.70	46 30.10	48 2.93
35	8	10.	26.5	43.5	. .	. .	. .	. .	48 0.54	14.34	0.40	III.	4	46.020	13 12.53	16.44	1.52	48 15.28	24 46 0.49
36	7.8	. .	. .	19.	37.	. .	. .	. .	48 36.10	14.34	0.29	IV.	3	29.197	30 50.51	16.35	3.05	48 50.73	25 3 39.91
37	8	. .	. .	. .	. .	8.	. .	. .	48 50.91	14.34	0.27	V.	3	24.770	35 28.34	16.32	3.37	49 5.52	25 8 18.03
38	8	18.	. .	52.	. .	. .	. .	. .	52 8.84	14.31	0.34	III.	4	38.800	20 45.25	15.86	2.15	52 23.49	24 53 33.26
39	7.8	. .	. .	. .	29.	. .	. .	. .	53 27.84	14.30	0.16	IV.	1	6.345	54 44.43	15.67	5.25	53 42.30	25 27 35.35
40	6.7	. .	. .	. .	48.	. .	21.	. .	54 47.27	14.29	0.34	IV.	3	37.847	21 47.67	15.48	2.25	55 1.90	24 54 35.40
41	7.8	0.7	17.	34.5	. .	. .	. .	. .	57 51.49	14.26	0.22	III.	2	18.530	42 0.55	15.06	4.07	58 5.97	25 14 49.68
42	6.7	42.	59.	16.	33.	. .	. .	. .	20 59 32.81	14.25	0.37	IV.	4	43.825	15 30.15	14.82	1.72	20 59 47.43	24 48 16.69
43	7	. .	18.	. .	52.5	. .	. .	. .	21 0 52.02	14.24	0.30	IV.	3	32.310	27 35.26	14.65	2.77	21 1 6.56	25 0 22.68
44	8	. .	. .	. .	. .	. .	. .	57.	1 5.66	14.24	0.16	VII.	1	8.175	52 49.81	14.61	5.09	1 20.06	25 39.51
45	7	. .	. .	. .	. .	. .	. .	53.	2 1.66	14.23	0.17	VII.	1	7.725	53 17.93	14.49	5.14	2 16.06	25 26 7.56
46	7	. .	. .	. .	. .	. .	38.3	. .	3 4.44	14.22	0.40	VI.	4	48.060	11 4.29	14.35	1.32	3 19.06	24 43 49.96
47	6	. .	. .	. .	20.3	. .	. .	10.5	4 19.14	14.21	0.16	IV.	1	6.375	54 42.56	14.19	5.27	4 33.51	25 27 32.02
48	7.8	46.	. .	21.	. .	. .	. .	. .	8 37.24	14.18	0.43	III.	4	52.510	6 25.69	13.62	0.90	8 51.85	24 39 10.21
49	8	. .	. .	. .	16.	. .	7.	. .	12 32.88	14.15	0.20	IV.	2	13.110	47 40.85	13.11	4.62	12 47.23	25 20 28.58
50	8	. .	. .	. .	. .	. .	28.	. .	13 53.90	14.14	0.23	VI.	3	21.370	39 2.07	12.94	3.82	14 8.27	11 48.83
51	6	. .	. .	8.5	26.	42.	. .	. .	15 25.21	14.13	0.27	IV.	3	29.153	30 53.27	12.75	3.06	15 39.61	25 3 39.08
52	8	. .	. .	. .	27.	. .	. .	. .	16 26.72	14.12	0.40	IV.	4	49.690	9 22.39	12.62	1.17	16 41.24	24 42 6.18
53	7	. .	. .	. .	14.	. .	. .	. .	17 13.22	14.11	0.25	IV.	3	25.363	34 51.14	12.52	3.43	17 27.58	25 7 37.09
54	8	. .	. .	. .	. .	. .	48.	. .	17 13.99	14.11	0.29	VI.	3	31.470	28 28.33	12.52	3.85	17 28.39	25 1 14.70
55	8	. .	. .	41.5	. .	. .	. .	. .	19 58.32	14.09	0.42	III.	4	54.255	4 36.26	12.17	0.74	20 12.83	24 37 19.17
56	7.8	39.5	55.7	13.5	. .	. .	. .	. .	21 30.25	14.08	0.27	III.	3	28.005	32 4.85	11.99	3.17	21 44.60	25 4 50.01
57	6	48.7	5.3	23.	. .	. .	. .	. .	23 39.76	14.06	0.20	III.	2	18.335	42 12.85	11.73	4.11	23 54.02	25 14 58.69
58	7.8	. .	. .	. .	. .	2.5	19.	. .	23 45.31	14.06	0.35	V.	4	43.550	15 47.45	11.72	1.73	23 59.72	24 48 30.90
59	6.7	52.5	9.3	26.5	44.	. .	. .	. .	28 43.41	14.02	0.24	IV.	3	25.680	34 31.05	11.13	3.40	28 57.67	25 7 15.58
60	7	16.5	33.	50.5	8.3	. .	. .	. .	30 7.41	14.01	0.24	IV.	3	25.680	34 31.05	10.97	3.40	30 21.66	7 15.42
61	8	. .	. .	3.	. .	. .	. .	. .	31 19.97	14.00	0.17	III.	2	11.340	49 31.89	10.84	4.80	31 34.14	22 17.53
62	8	18.	35.3	53.	. .	. .	. .	. .	33 9.56	13.98	0.18	III.	2	13.550	47 25.66	10.63	4.58	33 23.72	20 10.87
63	8	. .	. .	39.	. .	. .	. .	. .	33 55.97	13.97	0.16	III.	1	10.520	50 21.97	10.55	4.88	34 10.10	25 23 7.40
64	6	. .	. .	. .	33.	49.3	. .	. .	34 32.44	13.97	0.35	IV.	4	42.713	16 39.95	10.48	1.81	34 46.76	24 49 22.24
65	7	. .	50.	7.	. .	. .	. .	. .	39 23.93	13.93	0.36	III.	4	47.010	12 10.39	9.94	1.41	39 38.22	24 44 51.74
66	7.8	. .	. .	43.	. .	. .	. .	. .	39 59.92	13.93	0.22	III.	3	23.673	36 36.68	9.87	3.59	40 14.07	25 9 20.14
67	8	. .	47.5	. .	. .	39.5	. .	. .	43 22.07	13.90	0.24	V.	3	27.363	32 45.89	9.52	3.23	43 36.21	25 5 28.64
68	8	. .	. .	. .	. .	53.	. .	. .	44 36.02	13.89	0.37	V.	4	46.255	12 57.86	9.40	1.48	44 50.28	24 45 38.74
69	7.8	. .	25.5	42:	. .	. .	33.	. .	47 59.16	13.86	0.37	III.	4	48.875	10 13.37	9.05	1.24	48 13.39	24 42 53.66
70	7.8	49.	6.	23.	. .	. .	. .	. .	50 40.06	13.84	0.19	III.	2	21.670	38 43.37	8.77	3.79	50 54.09	25 11 25.93
71	8	. .	. .	. .	. .	4.	. .	. .	50 46.84	13.84	0.15	V.	1	12.317	48 29.75	8.76	4.70	51 0.83	25 21 13.21
72	8	38.5	. .	12.5	. .	. .	. .	. .	56 29.36	13.79	0.29	III.	3	36.370	23 20.19	8.20	2.37	56 43.44	24 56 0.76
73	7	6.3	23.	40.3	. .	. .	. .	. .	58 57.23	13.77	0.23	III.	3	25.670	34 31.30	7.96	3.40	59 11.23	25 7 12.66
74	7	. .	. .	. .	5.	. .	38.	. .	21 59 3.99	13.77	0.19	IV.	2	18.667	41 52.02	7.94	4.07	21 59 17.95	14 34.03
75	7.8	32.	48.7	6.	. .	. .	. .	. .	22 5 23.04	13.72	0.15	III.	1	11.635	49 12.05	7.33	4.77	22 5 36.91	25 21 54.17
76	6.7	. .	. .	52.	9.	. .	. .	. .	6 8.76	13.72	0.35	IV.	4	47.090	12 5.50	7.26	1.38	6 22.83	24 44 44.14
77	8	. .	. .	. .	16.5	. .	. .	7.	11 16.07	13.68	0.29	IV.	4	41.760	17 39.67	6.78	1.88	11 30.04	24 50 18.33
78	8	46.5	. .	21.	. .	. .	. .	. .	22 17 37.72	+13.63	+0.19	III.	2	21.060	−39 21.71	− 6.19	−3.86	22 17 51.54	−25 12 1.76

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(134) 49. Transit over T. III assumed to have been recorded as over T. IV.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 134	Sept. 21, 0 0	. .	. .	. .	. .	. .	. .	. .	30.068	63.2	55.0			

ZONE 134. SEPTEMBER 21. P. $D_0 = -24° 32' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
79	8	. .	. .	29.5	. .	. .	. .	. .	22 18 46.32	+13.62	+0.38	III.	4	53.250	− 5 39.28	− 6.08	−0.81	22 19 0.32	−24 38 16.17
80	7	34.3	51.	. .	25.5	. .	. .	. .	20 25.07	13.61	0.29	IV.	3	38.500	21 6.88	5.93	2.17	20 38.97	53 44.98
81	7	. .	. .	. .	22.	. .	. .	. .	21 21.80	13.60	0.39	IV.	4	54.353	4 30.37	5.85	0.71	21 35.79	37 6.93
82	7	. .	. .	0.5	18.3	. .	. .	. .	22 17.57	13.59	0.28	IV.	3	36.305	23 24.65	5.77	2.39	22 31.44	24 56 2.81
83	7.8	19.	35.5	. .	11.3	. .	. .	. .	24 10.08	13.58	0.13	IV.	1	10.370	50 31.77	5.61	4.91	24 23.79	25 23 12.29
84	7	. .	5.5	23.	40.5	. .	. .	. .	25 39.80	13.57	0.23	IV.	3	26.750	33 23.91	5.46	3.31	25 53.60	25 6 2.68
85	6	. .	. .	. .	7.	24.	. .	. .	27 6.83	13.55	0.33	IV.	4	46.030	13 11.91	5.36	1.48	27 20.71	24 45 48.75
86	8	. .	. .	. .	. .	. .	. .	30.	27 39.12	13.55	0.32	VII.	4	45.285	13 58.14	5.31	1.55	27 52.99	24 46 35.00
87	8	48.	. .	22.	. .	. .	. .	. .	32 38.90	13.51	0.24	III.	3	31.413	28 31.16	4.92	2.86	32 52.65	25 1 8.94
88	7.8	. .	. .	44.	1.5	. .	. .	. .	35 0.81	13.49	0.20	IV.	3	23.100	37 13.01	4.74	3.66	35 14.50	25 9 51.41
89	8	34.	51.5	8.5	. .	. .	. .	. .	39 25.27	13.46	0.27	III.	3	37.575	22 4.54	4.41	2.26	39 39.00	24 54 41.21
90	8	. .	. .	. .	35.	. .	. .	. .	43 34.58	13.43	0.30	IV.	4	42.690	16 41.40	4.15	1.80	43 48.31	24 49 17.35
91	8	. .	. .	. .	. .	. .	41.5	. .	44 7.31	13.42	0.12	VI.	2	11.880	48 57.93	4.12	4.76	44 20.85	25 21 36.81
92	7	. .	. .	. .	. .	. .	34.7	. .	45 0.84	13.42	0.33	VI.	4	48.340	10 46.92	4.06	1.27	45 14.59	24 43 22.25
93	7.8	. .	14.3	31.5	. .	. .	. .	. .	46 48.34	13.40	0.31	III.	4	45.850	13 23.08	3.95	1.50	47 2.05	45 58.53
94	7	. .	19.	36.	. .	. .	. .	. .	47 53.01	13.39	0.25	III.	3	35.455	24 17.58	3.88	2.48	48 6.65	56 53.94
95	8	. .	. .	. .	11.	. .	. .	. .	48 44.06	13.39	0.36	IV.	4	52.600	6 19.98	3.86	0.87	48 7.81	38 54.71
96	8.9	25.	42.	59.	. .	. .	. .	. .	51 15.93	13.37	0.27	III.	3	38.273	21 20.81	3.68	2.19	51 29.57	24 53 56.68
97	8.9	. .	. .	. .	. .	. .	19.5	. .	51 45 32	13.36	0.12	VI.	1	12.625	48 10.41	3.66	4.69	51 58.80	25 20 48.76
98	8	14.	. .	48.	. .	. .	. .	. .	56 4.86	13.33	0.26	III.	3	36.955	22 43.30	3.44	2.33	56 18.45	24 55 19.07
99	9	17.	33.	. .	. .	. .	42.	. .	56 7.66	13.33	0.25	VI.	3	36.600	23 6.45	3.44	2.36	56 21.24	24 55 42.25
100	6	. .	. .	. .	. .	. .	31.	. .	22 56 56.91	13.33	0.18	VI.	3	23.430	36 52.80	3.40	3.63	22 57 10.42	25 9 29.83
101	8.9	16.	33.	50.	. .	. .	. .	. .	23 2 7.00	13.29	0.21	III.	3	28.883	31 9.64	3.15	3.10	23 2 20.50	25 3 45.89
102	7	. .	40.5	57.5	. .	. .	. .	. .	4 14.39	13.27	0.35	III.	4	52.995	5 23.70	3.06	0.81	4 28.01	24 37 57.57
103	7	. .	. .	. .	48.	. .	22.3	. .	4 47.90	13.27	0.26	IV.	3	37.083	22 35.72	3.03	2.30	5 1.43	55 11.05
104	8	. .	. .	16.	. .	. .	. .	. .	6 32.82	13.26	0.35	III.	4	52.680	6 14.89	2.96	0.84	6 46.43	24 38 48.69
105	7.8	. .	48.3	. .	. .	. .	. .	. .	8 22.71	13.25	0.09	II.	1	8.635	52 19.75	2.88	5.11	8 36.05	25 24 57.74
106	8	. .	. .	. .	53.	. .	. .	. .	8 52.60	13.24	0.29	IV.	4	44.250	15 3.68	2.86	1.65	9 6.13	24 47 38.19
107	9	3.5	21.	. .	. .	. .	. .	. .	10 54.82	13.22	0.19	II.	3	26.770	33 21.78	2.78	3.31	11 8.23	25 5 57.87
108	7.8	17.7	34.5	51.5	9.3	25.5	. .	. .	14 8.55	13.20	0.25	IV.	3	38.420	31 39.31	2.67	3.18	14 22.00	4 15.06
109	9	33.	49.5	. .	. .	. .	. .	. .	19 23.81	13.16	0.20	II.	3	28.900	31 8.07	2.49	3.10	19 37.17	3 43.66
110	8	. .	. .	. .	. .	39.5	. .	. .	19 22.36	13.16	0.12	V.	2	15.490	45 11.59	2.49	4.43	19 35.64	25 17 48.51
111	7	. .	. .	. .	17.3	34.5	. .	. .	21 17.16	13.15	0.26	IV.	4	40.172	19 19.38	2.44	2.02	21 30.57	24 51 53.84
112	7	. .	. .	14.5	32.	49.	. .	. .	22 31.56	13.14	0.22	IV.	3	31.110	28 31.72	2.40	2.86	22 44.92	25 1 6.98
113	9	. .	. .	. .	. .	16.	. .	. .	29 59.05	13.09	0.31	V.	4	50.075	8 58.18	2.19	1.08	30 12.45	24 41 31.45
114	6	12.	29.	46.3	3.7	20.3	. .	. .	33 3.11	13.07	0.22	IV.	3	33.000	26 51.79	2.13	2.70	33 16.40	24 59 26.62
115	7.8	59.	16.	33.3	51.	. .	. .	. .	38 50.16	13.03	0.16	IV.	3	25.250	34 58.16	2.00	3.47	39 3.35	25 7 33.63
116	8	. .	. .	41.	. .	. .	. .	. .	41 57.89	13.01	0.21	III.	3	32.570	27 18.52	1.96	2.74	42 11.11	24 59 53.22
117	8	59.	. .	33.3	. .	. .	. .	. .	43 50.01	13.00	0.23	III.	3	37.220	22 26.80	1.93	2.29	44 3.24	24 55 1.02
118	6	31.	47.5	4.5	22.3	. .	. .	. .	45 21.65	12.99	0.18	IV.	3	28.857	31 11.65	1.91	3.11	45 34.82	25 3 46.67
119	8	50.	. .	. .	42.	. .	. .	. .	47 41.11	12.97	0.18	IV.	3	28.785	31 16.16	1.88	3.11	47 54.26	3 51.15
120	8	. .	. .	. .	. .	. .	30.5	. .	47 56.39	12.97	0.13	VI.	2	20.155	40 18.70	1.88	3.97	48 9.49	12 54.55
121	7.8	43.5	0.	17.3	35.3	51.3	. .	. .	50 34.33	12.95	0.20	IV.	3	32.230	27 40.21	1.85	2.78	50 47.48	25 0 14.84
122	6	21.5	38.5	55.3	13.3	29.5	. .	3.3	55 12.44	12.92	0.20	IV.	3	33.595	26 14.52	1.83	2.64	55 25.56	24 58 48.99
123	8	. .	47.5	. .	. .	. .	. .	. .	58 21.87	12.90	0.08	II.	2	13.130	47 39.10	1.81	4.66	58 34.85	25 20 15.57
124	8	45.	. .	19.	. .	. .	. .	. .	23 59 35.75	12.89	0.31	III.	4	52.070	6 53.15	1.80	0.89	23 59 48.95	24 39 25.84
125	7	. .	0.5	17.5	35.	51.5	. .	. .	0 0 34.48	+12.89	+0.22	IV.	3	36.580	−23 7.34	− 1.80	−2.35	0 0 47.59	−24 55 41.49

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(134) 95. Transit over T. V assumed as recorded over T. IV, and as 1^s, not 11^s; minutes as 47, not 48.

(134) 102. Micrometer reading assumed as $53^r.495$ instead of $52^r.995$.

(134) 108. Micrometer reading assumed as $28^r.420$, not $38^r.420$.

ZONE 135. SEPTEMBER 27. C. $D_0 = -14° 2' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8.9	. .	17.	32.7	49.	4.6	20.7	. .	19 41 48.73	. .	. .	IV.	4	43.861	−15 27.88	−20.22	−0.79	. . .	−14 17 48.89
2	9	. .	32.	48.2	4.7	. .	. .	. .	45 4.02	. .	. .	IV.	3	28.918	31 7.82	19.65	1.57	. . .	33 29.04
3	9	. .	. .	. .	24.7	41.	56.5	. .	45 24.74	. .	. .	IV.	4	47.335	11 50.07	19.60	0.60	. . .	14 10.27
4	9	. .	. .	. .	. .	44.2	0.0	. .	46 28.31	. .	. .	V.	4	51.026	7 58.54	19.40	0.41	. . .	10 18.35
5	10	. .	. .	32.7	. .	. .	20.	. .	49 48.36	. .	. .	IV.	3	37.455	22 12.50	18.81	1.12	. . .	24 32.43
6	8	. .	57.3	13.7	29.	46.	. .	. .	52 29.34	. .	. .	IV.	4	40.901	18 33.53	18.35	0.94	. . .	20 52.82
7	10	. .	31.5	. .	. .	. .	. .	. .	57 3.59	. .	. .	II.	2	17.556	43 1.49	17.55	2.16	. . .	45 21.20
8	8.9	. .	26.3	42.3	59.	14.2	30.	. .	19 59 58.20	. .	. .	IV.	3	21.586	38 48.08	17.03	1.95	. . .	41 7.06
9	9	. .	. .	38.6	54.7	10.3	26.1	. .	20 2 54.39	. .	. .	IV.	4	48.176	10 57.40	16.53	0.56	. . .	13 14.49
10	9	. .	. .	. .	12.2	28.	44.	. .	20 4 12.0	. .	. .	IV.	4	47.356	−11 48.94	−16.30	−0.60	. . .	−14 14 5.84

ZONE 136. SEPTEMBER 27. C. $D_0 = -26° 25' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	48.8	6.2	24.5	41.4	58.5	. .	20 31 23.69	+11.06	+0.89	IV.	2	16.043	−44 36.70	−11.46	−4.47	20 31 35.64	−27 10 12.63
2	7	. .	. .	. .	. .	31.7	48.	5.7	32 14.09	11.05	0.87	V.	4	52.808	6 6.75	11.33	0.66	32 26.01	26 31 38.74
3	9.10	. .	. .	53.5	12.	. .	. .	. .	36 11.09	11.01	0.90	IV.	3	41.912	17 32.69	10.70	1.77	36 23.00	43 5.16
4	7.8	. .	14.	31.5	49.5	6.	23.	. .	44 48.68	10.94	0.96	IV.	3	32.700	27 10.60	9.37	2.73	45 0.58	52 42.70
5	9	. .	. .	57.2	. .	33.?	. .	. .	45 15.04	10.94	0.95	IV.	4	44.086	15 13.90	9.31	1.55	46 26.93	40 44.76
6	6.7	. .	. .	23.	40.7	57.6	14.8	. .	47 40.20	10.92	0.97	IV.	3	33.513	26 19.73	8.93	2.65	47 52.09	51 51.31
7	9	. .	. .	. .	41.5	58.5	15.8	. .	48 41.14	10.90	0.97	IV.	3	36.506	23 11.97	8.78	2.33	48 53.01	26 48 43.08
8	9	. .	. .	9.5	27.4	. .	. .	. .	59 26.56	10.81	1.05	IV.	2	13.818	46 56.28	7.24	4.69	59 38.42	27 12 28.21
9	9	. .	. .	. .	. .	. .	58.?	. .	20 59 23.34	+10.81	+1.04	VI.	3	19.930	−40 32.18	−7.24	−4.05	20 59 35.19	−27 6 3.47

ZONE 137. SEPTEMBER 29. C. $D_0 = -14° 2' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	34.5	50.	6.3	. .	. .	. .	19 45 5.99	. .	. .	IV.	3	28.765	−31 17.42	−8.59	−1.57	. . .	−14 33 27.58
2	8.9	. .	. .	. .	. .	42.5	58.3	. .	45 26.59	. .	. .	V.	4	47.169	12 0.47	8.53	0.61	. . .	14 9.61
3	8.9	. .	. .	. .	. .	46.	. .	18.2	46 30.36	. .	. .	V.	4	50.861	8 8.83	8.34	0.42	. . .	10 17.59
4	9	. .	. .	26.	42.	. .	. .	. .	49 41.50	. .	. .	IV.	2	19.646	40 50.65	7.76	2.06	. . .	43 0.47
5	7.8	. .	59.6	15.8	32.	46.9	3.6	. .	52 31.50	. .	. .	IV.	3	40.758	18 45.14	7.27	0.94	. . .	20 53.35
6	9.10	. .	. .	49.5	. .	. .	. .	. .	19 57 5.35	. .	. .	III.	2	17.378	43 12.91	6.45	2.17	. . .	45 21.53
7	8	. .	28.6	44.5	1.2	16.7	. .	. .	20 0 0.52	. .	. .	IV.	3	21.402	38 59.69	5.94	1.96	. . .	41 7.59
8	9.10	. .	. .	56.	. .	28.	. .	59.6	1 11.85	. .	. .	IV.	3	19.842	40 37.33	5.73	2.05	. . .	42 45.11
9	9	. .	. .	40.7	57.	. .	28.3	. .	2 56.58	. .	. .	IV.	4	47.991	11 8.93	5.43	0.57	. . .	13 14.93
10	8	. .	. .	. .	14.7	. .	45.8	. .	4 14.23	. .	. .	IV.	4	47.175	12 0.16	5.21	0.61	. . .	14 5.98
11	8	. .	. .	20.5	37.	52.7	8.	. .	20 5 36.47	. .	. .	IV.	4	41.080	−18 22.44	−4.97	−0.93	. . .	−14 20 28.34

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.	
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°	
Zone 135	Sept. 27,	19 41	. .	. .	. .	. .	. .	. .	. .	29.828	67.0	64.2				
		20 0	53 24 60.8	57.1	55.1	47.1	45.7	61.5	54.55[a]	29.820	66.5	63.3	65.7	65.6	65.7	[a] Corr. for runs +0″.07.
Zone 136	Sept. 27,	20 30	65 47 35.8	32.9	31.3	23.5	24.2	36.2	30.65	29.814	66.5	63.1	65.5	64.8	65.7	
		20 44	. .	. .	. .	. .	. .	. .	. .	. .	. .	63.5				
		20 59	. .	. .	. .	. .	. .	. .	. .	29.814	66.0	63.4				
Zone 137	Sept. 29,	19 45	. .	. .	. .	. .	. .	. .	. .	. .	. .	56.0				
		19 57	. .	. .	. .	. .	. .	. .	. .	29.868	65.0					
		20 0	53 24 48.2	45.3	43.2	33.2	34.9	48.3	42.18[a]	. .	. .	. .	63.4	64.3	65.8	[a] Corr. for runs +0″.04.
		20 5	. .	. .	. .	. .	. .	. .	. .	. .	. .	55.4				

REMARKS.

(136) 5. Minutes assumed as 46, not 45.
(136) 9. Right ascension 2s small by Arg. Z. 232, 42, and Mer. Circle Z. 1846.

September 27, 21h. Clouds forming.
September 29. Reading of external thermometer at 19h 40m.

ZONE 138. OCTOBER 15. C. $D_0 = -26° 25' 20''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
1	8.9	. .	57.3	. .	. .	51.7	. .	. .	22 58 33.21	− 5.37	−1.21	IV.	3	26.837	−33 18.40	− 5.62	−3.37	22 58 26.63	−26 58 47.39
2	8.9	. .	. .	. .	. .	46.5	2.8	. .	22 59 28.66	5.38	1.22	V.	3	24.980	35 15.22	5.57	3.57	22 59 22.06	27 0 44.36
3	6	. .	. .	. .	. .	12.5	29.5	. .	23 0 55.17	5.39	0.99	V.	4	46.231	12 59.30	5.51	1.16	23 0 48.79	26 38 25.97
4	9	. .	43.	1.	19.5	35.5	. .	. .	5 18.18	5.44	1.34	IV.	2	13.389	47 23.46	5.30	4.92	5 11.40	27 12 53.68
5	9	. .	29.	46.1	3.2	. .	. .	. .	8 3.20	5.47	1.01	IV.	4	41.023	18 25.94	5.16	1.75	7 56.72	26 43 52.85
6	8	. .	23.	39.5	57.3	. .	. .	. .	10 57.03	5.50	1.02	IV.	4	39.288	20 14.96	5.03	1.96	10 50.51	26 45 41.95
7	9	. .	. .	. .	. .	. .	29.5	. .	10 54.87	5.50	1.19	VI.	3	23.188	37 7.93	5.03	3.77	10 48.18	27 2 36.73
8	9	. .	. .	. .	. .	. .	. .	29.2	11 37.04	5.50	1.37	VII.	2	10.072	50 51.29	5.01	5.31	11 30.20	27 16 21.61
9	9.10	. .	. .	. .	. .	23.2?	. .	. .	13 5.96	5.52	0.92	V.	4	47.151	12 1.61	4.95	1.05	12 59.52	26 37 27.61
10	8.9	. .	. .	12.	30.3	. .	4.	. .	15 29.26	5.54	1.29	IV.	2	13.405	47 22.46	4.85	4.91	15 22.43	27 12 52.22
11	9.10	. .	. .	. .	59.2	16.	. .	. .	16 58.65	5.56	1.02	IV.	3	35.355	24 24.24	4.79	2.39	16 52.07	26 49 51.42
12	8	. .	30.	47.8	6.3	23.	40.2	. .	20 5.24	5.59	1.30	IV.	2	9.793	51 8.93	4.67	5.34	19 58.35	27 16 38.94
13	6	. .	. .	50.7	7.8	25.	. .	59.	24 7.62	5.64	0.82	IV.	4	50.128	8 54.98	4.54	0.72	24 1.16	26 34 20.24
14	9	. .	. .	50.	. .	24.2	. .	58.3	24 6.90	5.64	0.88	IV.	4	45.328	13 56.13	4.54	1.26	24 0.38	39 21.93
15	9	. .	. .	. .	5.8	22.8	40.	. .	26 5.55	5.66	0.83	IV.	4	48.471	10 38.96	4.48	0.91	25 59.06	36 4.35
16	9	. .	. .	6.8	. .	41.	58.2	. .	29 23.81	5.69	0.87	IV.	4	43.142	16 13.11	4.38	1.52	29 17.25	26 41 39.01
17	7	. .	6.2	23.2	41.2	58.	15.2	. .	32 40.60	5.73	1.07	IV.	3	24.132	36 8.26	4.30	3.66	32 33.80	27 1 36.22
18	7	. .	12.	29.5	47.5	4.	21.1	. .	36 46.65	5.77	1.09	IV.	3	21.201	39 12.24	4.20	4.01	36 39.79	27 4 40.45
19	9.10	. .	. .	. .	28.	45.	. .	. .	41 27.49	5.81	0.94	V.	3	29.866	30 8.60	4.10	3.04	41 20.74	26 55 35.74
20	8	. .	. .	. .	3.	19.	36.8	. .	43 2.19	5.83	0.85	IV.	4	40.451	19 2.01	4.07	1.81	42 55.51	44 27.89
21	9	. .	58.	15.2	32.	. .	. .	. .	45 32.15	5.86	0.93	IV.	3	31.725	28 11.77	4.02	2.81	45 25.36	53 38.60
22	9	. .	54.6	11.7	29.7	. .	2.8	. .	48 28.90	5.88	0.82	IV.	4	40.348	19 8.46	3.97	1.82	48 22.20	44 34.26
23	8.9	. .	5.4	23.	41.1	57.4	. .	. .	51 40.20	5.92	0.89	IV.	3	32.278	27 37.26	3.93	2.75	51 33.39	26 53 3.94
24	9	. .	. .	. .	. .	48.	5.7	. .	52 30.86	5.93	0.96	V.	3	24.828	35 24.70	3.92	3.57	52 23.97	27 0 52.19
25	9	. .	. .	. .	15.8	33.2	50.3	. .	54 15.77	5.94	0.70	IV.	4	47.419	11 44.92	3.90	1.03	54 9.13	26 37 9.85
26	9	. .	. .	. .	52.	. .	25.7	. .	55 50.94	5.96	1.11	IV.	2	11.318	49 33.46	3.88	5.16	55 43.87	27 15 2.50
27	9	. .	. .	. .	. .	. .	6.	. .	56 31.54	5.97	0.77	VI.	4	41.300	18 8.39	3.88	1.72	56 24.80	26 43 33.99
28	9	. .	. .	. .	. .	. .	. .	33.?	23 56 41.25	5.97	0.78	VII.	4	40.297	19 10.92	3.87	1.83	23 56 34.50	44 36.62
29	8	. .	. .	39.7	57.2	14.7	. .	. .	0 0 56.96	6.01	0.79	IV.	3	36.322	23 23.58	3.84	2.29	0 0 50.16	48 49.71
30	9	. .	. .	. .	. .	. .	59.2	. .	1 24.80	6.02	0.66	VI.	4	46.606	12 35.54	3.84	1.11	1 18.12	38 0.49
31	7	. .	. .	. .	27.2	44.2	1.3	18.5	2 26.83	6.03	0.72	IV.	3	42.261	17 11.05	3.84	1.61	2 20.08	26 42 36.50
32	8	. .	10.3	28.7	46.7	. .	. .	37.7	5 45.62	6.06	0.99	IV.	2	16.518	44 7.02	3.83	4.55	5 38.57	27 9 35.40
33	7	. .	40.2	. .	15.7	32.3	49.4	. .	0 6 14.87	− 6.06	−0.95	IV.	2	18.793	−41 44.04	− 3.83	−4.28	0 6 7.86	−27 7 12.15

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847. h.	s.	s.	s.	s.	s.	° ' "	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ' "						"	in.	°	°	°	°	°
Zone 138	Oct. 15, 22 50	65 47 34.0	38.0	35.7	24.1	29.5	32.3	32.27[a]	. .	. .	. .	43.8	45.8	53.3
	22 59	. .	. .	. .	. .	. .	. .	. .	30.288	46.0	36.2			
	23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	36.1			
	23 41	. .	. .	. .	. .	. .	. .	. .	30.292	45.2	35.6			
	0 0	34.3	37.8	36.3	24.0	29.2	31.9	32.25	30.290	45.0	35.9	43.0	44.4	

REMARKS.

(138) 12. Transits across T.'s IV and V assumed as at $6^s.3$ and 23^s instead of 3^s and $2^s.3$.

Oct 15. Stars very unsteady; of many only glimpses would be obtained, and no observations could be made of them; mist over the river.

[a] Corr. for runs +0''.07.

ZONE 139. OCTOBER 16. P. $D_0 = -30°\ 10'\ 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	44.3	3.	. .	. .	. .	. .	22 1 20.65	− 5.78	−0.77	II.	2	19.230	−41 16.25	−11.52	−5.64	22 1 14.10	−30 52 13.41
2	9	. .	. .	. .	13.	. .	. .	. .	2 12.30	5.79	0.78	IV.	3	30.940	29 0.96	11.44	3.86	2 5.73	39 56.26
3	9	. .	. .	. .	. .	. .	56.5	. .	3 20.92	5.80	0.79	VI.	4	53.805	5 3.92	11.33	0.49	3 14.33	15 55.74
4	9	. .	16.	. .	. .	. .	. .	. .	5 52.11	5.84	0.77	II.	3	22.920	37 23.23	11.07	5.08	5 45.50	48 19.38
5	8.9	. .	26.	43.3	. .	20.5	. .	. .	8 1.82	5.86	0.79	III.	4	50.230	8 48.59	10.87	1.03	7 55.17	19 40.49
6	8	. .	58.3	16.5	. .	. .	. .	. .	9 34.15	5.88	0.79	III.	4	48.860	10 14.31	10.71	1.20	9 27.48	21 6.22
7	7.8	1.7	19.	37.5	. .	. .	. .	. .	11 55.09	5.91	0.79	III.	4	42.015	17 23.66	10.50	2.21	11 48.39	30 28 16.37
8	9	. .	. .	. .	. .	. .	. .	55.	12 0.93	5.91	0.78	VII.	2	11.580	49 16.57	10.49	6.79	11 54.24	31 0 13.85
9	9	. .	. .	. .	. .	. .	15.	. .	13 39.37	5.93	0.80	VI.	4	48.790	10 18.40	10.34	1.21	13 32.64	30 21 9.95
10	7	. .	. .	. .	. .	. .	54.	. .	14 18.36	5.94	0.80	VI.	4	47.830	11 18.60	10.29	1.36	14 11.62	22 10.25
11	8	. .	. .	. .	. .	. .	45.	. .	15 9.30	5.95	0.80	VI.	4	43.255	16 5.41	10.22	2.02	15 2.55	26 57.65
12	8	. .	. .	. .	39.5	. .	14.7	. .	16 39.05	5.96	0.80	IV.	4	44.185	15 7.74	10.09	1.89	16 32.29	25 59.72
13	8.9	. .	. .	. .	. .	24.	. .	. .	19 5.91	5.99	0.79	V.	2	12.115	48 43.37	9.87	6.70	18 59.13	59 39.94
14	7	. .	15.	33.5	52.	. .	. .	. .	20 51.19	6.01	0.80	IV.	3	26.153	34 1.50	9.73	4.58	20 44.38	44 55.81
15	8	. .	39.3	58.	. .	. .	. .	. .	22 15.66	6.03	0.79	III.	2	17.662	42 54.97	9.61	5.87	22 8.84	53 50.45
16	9	. .	33.	. .	. .	27.	. .	. .	25 8.99	6.07	0.80	V.	4	40.305	19 11.05	9.39	2.47	25 2.12	30 2.91
17	7	. .	39.	57.	. .	. .	. .	8.	25 14.67	6.07	0.81	VII.	4	44.000	15 18.41	9.38	1.91	25 7.79	30 26 9.70
18	6.7	. .	. .	. .	. .	47.	. .	. .	27 28.87	6.09	0.80	V.	1	5.453	55 40.62	9.20	7.74	27 21.98	31 6 37.56
19	8	. .	. .	52.	11.	. .	. .	. .	29 10.02	6.11	0.81	IV.	3	26.650	33 30.26	9.04	4.51	29 3.10	30 44 23.81
20	8	41.	58.3	. .	. .	. .	. .	. .	31 34.36	6.14	0.81	II.	3	37.890	21 44.02	8.89	2.83	31 27.41	32 35.74
21	7	. .	. .	33.	51.3	. .	. .	. .	31 50.67	6.14	0.81	IV.	3	27.460	32 39.54	8.87	4.38	31 43.72	49 32.79
22	7	. .	. .	. .	24.	. .	. .	. .	32 23.55	6.15	0.81	IV.	4	42.955	16 24.70	8.84	2.08	32 16.59	27 15.62
23	7	. .	. .	21.3	40.	. .	. .	. .	33 39.13	6.16	0.80	IV.	3	22.593	37 44.83	8.75	5.12	33 32.17	48 38.70
24	8	. .	. .	. .	. .	. .	. .	22.	33 46.38	6.16	0.82	VII	4	50.395	8 37.54	8.76	1.00	33 39.40	19 27.30
25	8	. .	. .	. .	3.	. .	. .	. .	35 2.55	6.18	0.82	IV.	4	43.205	16 9.22	8.65	2.03	34 55.55	26 59.90
26	9	. .	. .	. .	. .	. .	59.	. .	35 23.29	6.19	0.82	VI.	4	41.593	17 49.88	8.62	2.27	35 16.28	28 40.77
27	8.9	. .	16.5	. .	. .	. .	. .	. .	40 52.51	6.25	0.82	II.	3	30.850	29 5.67	8.25	3.88	40 45.44	39 57.80
28	7.8	. .	. .	. .	12.	. .	. .	. .	41 11.31	6.26	0.82	IV.	3	31.550	28 22.88	8.23	3.77	41 4.23	39 14.88
29	7.8	. .	. .	. .	. .	. .	. .	58.	41 4.52	6.26	0.83	VII.	4	49.850	9 11.47	8.24	1.09	40 57.43	20 0.80
30	5.6	. .	36.3	53.3	11.3	. .	. .	. .	43 11.36	6.28	0.83	IV.	4	50.110	8 56.12	8.12	1.04	43 4.25	19 45.28
31	8.9	. .	1.5	. .	. .	. .	. .	. .	44 37.52	6.30	0.82	II.	3	29.495	30 30.87	8.03	4.08	44 30.40	30 41 22.98
32	8	. .	. .	. .	48.	. .	. .	. .	44 46.89	6.30	0.81	IV.	1	10.670	50 12.75	8.02	6.94	44 39.78	31 1 7.71
33	8	. .	. .	. .	. .	. .	22.	. .	45 46.26	6.31	0.82	VI.	3	38.850	20 45.06	7.97	2.69	45 39.13	30 31 35.72
34	7	. .	. .	. .	11.5	29.3	. .	. .	47 11.27	6.33	0.83	IV.	4	45.500	13 45.27	7.88	1.71	47 4.11	24 34.86
35	1	34.5	52.3	10.5	28.5	. .	. .	21.7	49 28.11	6.36	0.84	IV.	4	50.187	14 4.72	7.75	1.66	49 20.91	24 54.13
36	7	. .	54.	12.	30.	. .	. .	. .	51 29.73	6.38	0.84	IV.	4	53.770	5 6.50	7.65	0.49	51 22.51	15 54.64
37	8.9	. .	55.	. .	. .	. .	. .	. .	53 30.96	6.40	0.83	II.	3	35.150	24 36.10	7.55	3.24	53 23.73	35 26.89
38	9	. .	. .	. .	. .	46.	. .	. .	53 28.17	6.40	0.84	V.	4	52.200	6 44.99	7.55	0.73	53 20.93	17 33.27
39	9	. .	. .	. .	. .	. .	. .	25.	53 31.58	6.40	0.84	VII.	4	53.680	5 11.38	7.55	0.51	53 24.34	15 59.44
40	8.9	. .	. .	. .	. .	. .	25.	. .	54 49.18	6.42	0.83	VI.	3	31.343	28 36.24	7.49	3.80	54 41.93	30 39 27.53
41	8	. .	. .	. .	. .	34.	. .	. .	56 15.87	6.43	0.83	V.	1	6.270	54 49.33	7.42	7.61	56 8.61	31 5 44.36
42	6.7	1.	18.5	37.	56.	. .	. .	. .	58 54.83	6.47	0.83	IV.	2	19.900	40 34.57	7.30	5.52	58 47.53	30 51 27.39
43	9	. .	. .	. .	41.	. .	. .	. .	22 59 39.85	6.48	0.83	IV.	1	9.290	51 39.56	7.26	7.13	22 59 32.54	31 2 33.95
44	7	. .	28.	46.	. .	. .	. .	. .	23 1 4.04	6.49	0.83	III.	2	14.870	45 50.07	7.20	6.30	23 0 56.72	30 56 43.57
45	8	49.3	7.	. .	. .	. .	. .	. .	2 43.00	6.51	0.84	II.	3	27.193	32 55.29	7.14	4.43	2 35.65	43 46.86
46	7	. .	. .	. .	. .	5.	. .	. .	2 47.16	6.51	0.85	V.	4	49.763	9 17.63	7.13	1.05	2 39.80	20 5.81
47	8	. .	. .	. .	. .	. .	46.	. .	3 10.08	6.52	0.83	VI.	3	22.350	38 0.51	7.12	5.17	3 2.73	48 52.80
48	8.9	. .	. .	49.	. .	. .	. .	. .	5 6.74	6.54	0.85	III.	4	46.410	12 48.20	7.05	1.55	4 59.35	23 36.80
49	7.8	. .	. .	18.	. .	. .	. .	. .	5 35.75	6.54	0.85	III.	4	42.855	16 30.92	7.03	2.07	5 28.36	27 20.02
50	7	. .	. .	. .	. .	. .	. .	12.5	23 5 18.55	− 6.54	−0.83	VII.	2	19.210	−41 17.76	− 7.04	−5.66	23 5 11.18	−30 52 10.46

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 139	Oct. 16, 22 0	69 32 34.0	35.3	34.8	24.8	26.2	35.1	31.70[a]	30.262	53.3	45.5	53.5		
	22 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	45.0			
	23 11	. .	. .	. .	. .	. .	. .	. .	30.260	52.2	43.9			
	23 28	. .	. .	. .	. .	. .	. .	. .	30.258	52.1	43.5			
	0 19	. .	. .	. .	. .	. .	. .	. .	30.242	51.5	42.7			

REMARKS.

(139) 24. Transit over T. VI assumed as recorded over T. VII, to agree with Arg. Z. 259, 34.

(139) 35. Micrometer reading assumed as $45^r.187$, not $50^r.187$.

[a] Corr. for runs +0″.07.

ZONE 139. OCTOBER 16. P. $D_0 = -30° \ 10' \ 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.		i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.										
									h. m. s.	s.	s.		r.	′ ″	″	″	h. m. s.	° ′ ″
51	7	51.	9.	27.	45.5	3.	. .	. .	23 7 44.85	−6.57	−0.84	IV.	3	30.990	−28 57.88	−6.95	−3.85	23 7 37.44	−30 39 48.68
52	8.9	. .	. .	34.	53.	. .	. .	. .	8 52.02	6.58	0.84	IV.	3	27.470	32 38.93	6.91	4.39	8 44.60	43 30.23
53	9	. .	. .	. .	. .	. .	13.	. .	11 37.05	6.61	0.83	VI.	2	18.900	41 37.27	6.81	5.71	11 29.61	52 29.79
54	8	. .	. .	. .	. .	. .	5.7	. .	12 29.73	6.62	0.83	VI.	2	17.450	43 8.52	6.78	5.93	12 22.28	54 1.23
55	7	. .	57.	16.	. .	. .	. .	. .	17 33.48	6.69	0.83	III.	2	21.460	38 56.73	6.63	5.30	17 25.96	49 48.66
56	8	59.5	17.	35.3	. .	. .	. .	. .	19 52.89	6.71	0.85	III.	4	49.210	9 52.55	6.56	1.13	19 45.33	20 40.24
57	7.8	. .	. .	. .	23.5	. .	. .	. .	22 22.49	6.74	0.83	IV.	2	15.710	44 57.61	6.49	6.19	22 14.92	55 50.29
58	8	. .	. .	. .	. .	18.	. .	. .	23 0.03	6.75	0.84	V.	3	30.196	29 48.08	6.48	3.97	22 52.44	40 38.53
59	8.9	. .	25.	43.	. .	. .	. .	. .	28 0.95	6.81	0.84	III.	3	25.420	34 47.18	6.36	4.70	27 53.30	45 38.24
60	8.9	. .	. .	54.	. .	. .	. .	. .	29 11.80	6.82	0.84	III.	3	28.667	31 23.26	6.33	4.21	28 4.14	42 13.80
61	8	. .	. .	. .	. .	2.	. .	. .	29 43.94	6.83	0.83	V.	2	16.620	44 0.62	6.32	6.05	29 36.28	54 52.99
62	8	8.7	26.5	44.3	. .	. .	. .	. .	32 2.13	6.85	0.85	III.	4	48.290	10 50.31	6.28	1.27	31 54.43	21 37.86
63	7	24.5	42.	0.	18.3	. .	. .	. .	34 17.85	6.88	0.84	IV.	4	42.855	16 30.98	6.24	2.07	34 10.13	27 19.29
64	8	22.	. .	57.5	. .	. .	. .	. .	39 15.47	6.94	0.83	III.	3	28.700	31 21.18	6.16	4.21	38 7.70	42 11.55
65	8.9	. .	. .	. .	. .	. .	. .	59.	40 5.49	6.95	0.85	VII.	4	47.195	11 58.16	6.15	1.43	39 57.69	22 45.74
66	8	. .	45.7	4.5	. .	. .	. .	. .	42 21.99	6.97	0.83	III.	3	32.093	27 48.37	6.14	3.69	42 14.19	38 38.20
67	8	. .	. .	47.	. .	. .	. .	. .	43 4.82	6.98	0.83	III.	3	26.060	34 6.83	6.13	4.60	42 57.01	44 57.56
68	7	. .	. .	. .	. .	. .	. .	26.	42 32.60	6.97	0.85	VII.	4	55.360	3 26.23	6.13	0.25	42 24.78	14 12.61
69	8	. .	. .	. .	. .	. .	16.	. .	43 40.09	6.99	0.83	VI.	3	23.123	37 11.88	6.13	5.05	43 32.27	48 3.06
70	7	. .	29.3	47.5	5.3	. .	. .	. .	46 5.10	7.02	0.85	IV.	4	55.680	3 6.79	6.11	0.20	45 57.23	13 53.10
71	9	. .	. .	34.	. .	. .	. .	. .	49 51.79	7.06	0.83	III.	3	33.250	26 35.85	6.08	3.52	49 43.90	37 25.45
72	9	. .	24.	. .	. .	. .	. .	. .	49 59.92	7.06	0.84	II.	3	38.147	21 28.10	6.08	2.78	49 52.02	32 16.96
73	8	. .	30.	. .	. .	. .	. .	. .	51 5.77	7.07	0.85	II.	4	49.663	9 23.89	6.08	1.06	50 57.85	20 11.03
74	8.9	. .	. .	. .	23.	. .	. .	. .	51 22.20	7.07	0.83	IV.	3	26.230	33 56.66	6.08	4.58	51 14.30	44 47.32
75	6.7	. .	. .	. .	. .	10.5	28.	. .	51 52.53	7.08	0.85	V.	4	50.580	8 26.58	6.08	0.94	51 44.60	19 13.60
76	8	. .	. .	. .	21.3	. .	. .	. .	53 20.32	7.10	0.83	IV.	2	17.475	43 6.95	6.08	5.92	53 12.39	53 58.95
77	6	. .	10.	28.	46.5	. .	. .	. .	54 45.88	7.11	0.84	IV.	3	37.115	22 33.71	6.08	2.94	54 37.93	33 22.73
78	8	. .	. .	. .	. .	39.7	. .	. .	55 21.64	7.12	0.83	V.	2	17.330	48 29.66	6.08	6.68	55 13.69	59 22.42
79	7	. .	. .	21.	40.3	. .	. .	. .	56 39.06	7.13	0.82	IV.	2	13.420	47 21.50	6.09	6.53	56 31.11	58 14.12
80	7	. .	. .	. .	. .	. .	25.	. .	56 49.45	7.13	0.85	VI.	4	56.500	2 15.13	6.09	0.08	56 41.47	13 1.30
81	7	. .	. .	. .	. .	. .	. .	11.3	23 57 17.70	7.14	0.84	VII.	4	42.050	17 20.78	6.09	2.20	23 57 9.72	28 9.07
82	9	. .	. .	38.	. .	. .	. .	. .	0 0 55.86	7.18	0.83	III.	2	17.205	43 23.72	6.10	5.98	0 0 47.85	54 15.80
83	8	54.5	12.	30.	. .	. .	. .	. .	3 47.86	7.22	0.84	III.	4	41.700	17 43.42	6.13	2.24	3 39.80	28 31.79
84	7.8	37.	54.5	12.5	. .	. .	. .	. .	5 30.60	7.23	0.82	III.	2	17.830	42 44.30	6.14	5.89	5 22.55	53 36.33
85	8.9	. .	. .	. .	. .	. .	5.	. .	5 29.40	7.23	0.84	VI.	4	51.620	7 21.05	6.14	0.76	5 21.33	18 7.95
86	7.8	. .	. .	. .	. .	. .	. .	0.	6 6.46	7.24	0.83	VII.	4	45.470	13 46.40	6.15	1.67	5 58.39	30 24 34.22
87	7.8	. .	. .	. .	0.	. .	. .	. .	7 58.90	7.26	0.81	IV.	1	11.515	49 19.83	6.17	0.86	7 50.83	31 0 6.86
88	8.9	. .	. .	. .	. .	35.	. .	. .	9 17.06	7.27	0.83	V.	3	35.720	24 1.41	6.18	3.14	9 8.96	30 34 50.73
89	9	. .	. .	. .	. .	. .	35.	. .	9 59.19	7.28	0.82	VI.	3	31.450	28 29.52	6.19	3.79	9 51.09	39 19.50
90	8	. .	. .	. .	16.	33.5	. .	. .	11 15.33	7.29	0.82	IV.	3	23.670	36 37.18	6.21	4.98	11 7.22	47 28.37
91	7	38.	56.	13.	31.5	. .	. .	. .	13 31.28	7.32	0.82	IV.	4	39.183	20 21.41	6.26	2.61	13 23.14	31 10.28
92	7	5.5	23.	41.5	. .	. .	. .	. .	15 59.15	7.34	0.81	III.	3	30.150	29 50.28	6.31	3.98	15 51.00	40 40.57
93	8.9	. .	. .	. .	. .	31.7	. .	. .	16 13.86	7.34	0.83	V.	4	50.620	8 24.01	6.31	0.91	16 5.69	19 11.23
94	9	. .	. .	15.5	. .	. .	. .	. .	18 33.28	7.35	0.81	III.	3	33.930	25 53.00	6.32	3.41	16 25.12	36 42.73
95	7	. .	. .	. .	53.	. .	. .	. .	19 52.60	7.39	0.81	IV.	4	45.323	13 56.44	6.39	1.69	19 44.40	24 44.52
96	8	. .	. .	. .	33.	. .	. .	. .	20 32.76	7.40	0.82	IV.	4	52.703	6 13.45	6.40	0.60	20 24.54	17 0.45
97	9	. .	. .	. .	. .	4.	. .	. .	21 46.03	7.41	0.80	V.	3	30.323	29 40.18	6.44	3.95	21 37.82	40 30.57
98	6	30.5	48.	6.	24.	. .	. .	. .	26 23.76	7.46	0.82	IV.	4	46.835	12 21.37	6.57	1.47	26 15.48	23 9.41
99	7.8	50.	8.5	26.3	. .	. .	. .	. .	29 44.00	7.49	0.80	III.	3	38.037	21 35.43	6.66	2.79	29 35.71	32 24.88
100	8	. .	. .	28.5	. .	4.3	. .	. .	0 30 46.34	−7.50	−0.81	V.	4	49.560	−9 30.55	−6.69	−1.06	0 30 38.03	−30 20 18.30

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE.							Barom.	THERMOM.				
		A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(139) 78. Micrometer reading assumed as $12^r.313$, not $17^r.313$.

ZONE 140. OCTOBER 18. C. $D_0 = -27° 40' 20''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	16.7	34.5	53.2	9.5	26.3	44.	22 56 51.91	− 8.14	−0.55	IV.	4	43.178	−16 10.84	− 5.42	−1.84	22 56 43.22	−27 56 38.10
2	9.10	. .	. .	44.	3.2	. .	. .	. .	23 1 2.03	8.18	0.56	IV.	4	41.992	17 25.17	5.28	1.97	23 0 53.29	57 52.42
3	9.10	. .	. .	. .	27.	43.	1.7	. .	1 26.35	8.19	0.55	IV.	4	45.114	14 9.42	5.27	1.61	1 17.61	27 54 36.30
4	9	. .	. .	. .	. .	35.	53.7	. .	2 18.14	8.20	0.62	V.	3	34.251	25 33.68	5.24	2.89	2 9.32	28 6 1.81
5	8.9	. .	. .	. .	. .	. .	51.3	. .	3 16.59	8.21	0.47	VI.	4	55.610	3 10.94	5.21	0.39	3 7.91	27 43 36.54
6	9	. .	. .	14.9	32.3	49.7	. .	. .	6 32.14	8.24	0.53	IV.	4	47.822	11 19.46	5.11	1.28	6 23.37	51 45.85
7	8.9	. .	. .	. .	49.5	6.	. .	. .	7 48.76	8.26	0.59	IV.	3	40.256	19 16.74	5.07	2.18	7 39.91	59 43.99
8	8	. .	. .	. .	36.8	54.2	11.6	. .	8 36.66	8.27	0.56	IV.	4	45.761	13 28.72	5.04	1.53	8 27.83	53 55.29
9	7	32.3	. .	7.2	24.3	42.	59.4	16.5	13 24.40	8.32	0.54	IV.	4	50.961	8 2.62	4.91	0.92	13 15.54	27 48 28.45
10	8.9	. .	36.5	53.5	12.	29.	. .	. .	16 11.33	8.35	0.65	IV.	3	34.014	25 48.17	4.83	2.92	16 2.33	28 6 15.92
11	8.9	. .	. .	35.	53.5	10.	. .	. .	16 52.55	8.36	0.69	IV.	3	30.012	29 59.25	4.82	3.40	16 43.50	10 27.47
12	7	. .	47.	4.8	23.	39.7	57.	. .	18 22.15	8.37	0.74	IV.	3	25.686	34 30.67	4.78	3.92	18 13.04	14 59.37
13	8	. .	. .	26.3	44.5	1.6	18.7	. .	19 43.85	8.39	0.66	IV.	3	34.062	25 45.22	4.74	2.91	19 34.80	6 12.87
14	9	. .	25.5	43.8	1.7	19.3	. .	. .	23 1.15	8.42	0.69	IV.	3	33.028	26 50.03	4.66	3.04	22 52.04	7 17.73
15	9	. .	30.2	48.2	7.	. .	. .	. .	27 5.71	8.46	0.87	IV.	2	8.925	52 3.41	4.56	6.02	26 56.38	32 33.99
16	7.8	. .	. .	. .	55.2	11.7	29.3	. .	27 54.24	8.47	0.76	IV.	3	22.034	38 19.84	4.54	4.36	27 45.01	18 48.74
17	9	. .	59.3	17.7	35.3	52.5	. .	. .	34 34.73	8.54	0.86	IV.	2	13.074	47 43.11	4.40	5.42	34 25.33	28 12.93
18	9.10	. .	51.	9.2	27.2	. .	. .	. .	36 26.42	8.56	0.67	IV.	3	38.328	21 17.74	4.36	2.40	36 17.19	1 44.50
19	9	. .	. .	41.3	. .	16.3	33.5	. .	37 58.62	8.58	0.80	IV.	2	19.771	40 42.66	4.32	4.61	37 49.24	28 21 11.59
20	9.10	. .	. .	. .	. .	49.2	7.5	. .	42 32.20	8.62	0.64	V.	3	42.066	17 23.41	4.24	1.96	42 22.94	27 57 49.61
21	10	. .	. .	. .	43.2?	1.5?	. .	35.	44 43.20	8.64	0.64	IV.	4	45.900	13 19.99	4.20	1.51	44 33.96	53 45.70
22	9	. .	. .	27.3	45.2	2.5	19.8	. .	46 44.88	8.66	0.64	IV.	4	46.919	12 16.09	4.17	1.39	46 35.58	52 41.65
23	8.9	. .	. .	27.7	45.7	2.8	20.	. .	46 45.23	8.66	0.64	IV.	4	46.919	12 16.09	4.17	1.39	46 35.93	52 41.65
24	9	. .	. .	25.3	43.3	0.8	. .	. .	54 42.93	8.75	0.67	IV.	4	41.579	17 51.14	4.07	2.02	54 33.51	27 58 17.23
25	8.9	. .	8.	25.7	43.7	. .	. .	. .	57 43.08	8.78	0.74	IV.	3	33.915	25 54.32	4.04	2.93	57 33.56	28 6 21.29
26	9	. .	11.9	29.3	47.5	. .	. .	. .	23 59 46.83	8.80	0.79	IV.	3	26.659	33 29.69	4.01	3.80	23 59 37.24	28 13 57.50
27	9.10	. .	. .	. .	. .	. .	28.7	. .	0 3 53.93	8.84	0.63	V.	4	48.671	10 26.16	4.01	1.16	0 3 44.46	27 50 51.33
28	7.8	. .	18.7	36.7	55.	11.3	. .	. .	6 53.97	8.87	0.85	IV.	2	19.394	41 6.58	4.00	4.66	6 44.25	28 21 35.24
29	9	. .	. .	. .	. .	. .	34.5	51.7	6 59.50	8.87	0.70	VI.	3	39.851	19 42.34	4.00	2.22	6 49.93	28 0 8.56
30	10	. .	. .	. .	56.2	13.5	. .	. .	8 55.86	8.89	0.69	IV.	3	41.212	18 16.78	4.00	2.06	8 46.28	27 58 42.84
31	9	. .	. .	40.9	58.	15.7	32.8	. .	14 58.05	8.95	0.63	IV.	4	48.621	10 29.49	4.05	1.18	14 48.47	50 54.72
32	8	. .	21.5	39.	56.8	13.7	. .	. .	16 56.36	8.97	0.64	IV.	4	47.795	11 21.17	4.07	1.26	16 46.75	51 46.50
33	8	. .	. .	51.	. .	25.7	43.2	. .	17 8.35	8.97	0.59	IV.	4	54.334	4 31.37	4.07	0.49	16 58.79	27 44 55.93
34	7	. .	. .	. .	. .	. .	. .	17.5	18 24.72	8.98	0.94	VII.	2	9.007	51 58.07	4.08	5.94	18 14.80	28 32 28.09
35	8.9	. .	. .	30.2	48.1	5.7	22.5	. .	21 47.82	9.01	0.64	IV.	4	49.111	9 58.76	4.14	1.11	21 38.17	27 50 24.01
36	8	. .	. .	7.5	25.3	. .	59.3	. .	29 24.64	9.08	0.76	IV.	3	34.128	25 41.09	4.30	2.91	29 14.80	28 6 8.30
37	8	. .	. .	. .	28.5	. .	. .	19.7	29 27.44	9.08	0.82	VI.	3	25.856	34 20.33	4.30	3.91	29 17.54	14 48.54
38	8	. .	. .	. .	. .	. .	27.	. .	30 51.88	9.10	0.91	VI.	2	14.367	46 22.01	4.33	5.28	30 41.87	26 51.62
39	8.9	. .	. .	1.	18.7	. .	. .	. .	33 18.23	9.12	0.76	IV.	3	34.636	25 9.21	4.41	2.85	33 8.35	5 36.47
40	8.9	. .	. .	. .	. .	51.3	8.6	. .	33 33.70	9.12	0.80	V.	3	28.628	31 26.40	4.42	3.58	33 23.78	28 11 54.40
41	9.10	. .	. .	43.8	. .	18.8	35.7	. .	38 1.11	9.17	0.70	IV.	4	42.522	16 52.05	4.56	1.90	37 51.24	27 57 18.51
42	9	. .	37.7	55.5	14.5	. .	. .	. .	42 13.15	9.20	0.89	IV.	2	15.744	44 55.46	4.71	5.14	42 3.06	28 25 25.31
43	9.10	. .	. .	. .	50.7	7.7	. .	. .	44 49.89	9.23	0.90	IV.	2	14.746	45 58.09	4.82	5.24	44 39.76	26 28.15
44	6	. .	13.2	31.5	49.8	6.5	24.	. .	48 48.77	9.26	0.97	IV.	2	6.222	54 53.28	4.99	6.30	48 38.54	28 35 24.57
45	8	. .	35.2	53.	10.8	27.9	. .	. .	51 10.33	9.28	0.68	IV.	4	45.456	13 48.03	5.10	1.55	51 0.37	27 54 14.68
46	9.10	. .	. .	7.7	26.2	. .	. .	. .	54 25.25	9.31	0.83	IV.	3	25.102	35 7.39	5.26	4.00	54 15.11	28 15 36.65
47	9.10	. .	. .	. .	. .	. .	14.7	. .	54 39.71	9.31	0.82	VI.	3	27.178	32 57.51	5.28	3.75	54 29.58	28 13 26.54
48	9	. .	56.3	. .	32.8	50.	. .	. .	0 58 32.11	9.35	0.62	IV.	4	53.792	5 5.12	5.47	0.55	0 58 22.14	27 45 31.14
49	9.10	. .	9.3	27.7	. .	. .	. .	. .	1 0 44.59	− 9.36	−0.64	III.	4	51.988	− 6 58.23	− 5.59	−0.75	1 0 34.59	−27 47 24.57

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

October 18. Stars remarkably steady and well defined; 1h, apparently light mist; 2h 30m, moved the circle for other observations; 5h, a mist barely perceptible; fog-bank near the horizon.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 140	Oct. 18,	23 9	67 2 35.0	34.0	32.1	22.6	26.3	36.0	31.00[a]	30.140	59.5	55.9	58.3	56.8	54.7
		23 19	. .	. .	. .	. .	. .	. .	. .	. .	. .	54.0			
		23 42	. .	. .	. .	. .	. .	. .	. .	30.142	59.5	53.5			
		23 59	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.3			
		0 30	34.8	34.0	32.1	22.8	26.3	35.4	30.90	30.132	59.0	53.4	57.5	56.5	
		0 42	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.0			
		1 0	. .	. .	. .	. .	. .	. .	. .	30.125	58.8	52.5			
		1 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	52.1			
		2 0	35.1	34.4	32.4	22.8	26.1	35.5	31.05	30.110	57.5	52.0	55.6	55.4	55.0

[a] Corr. for runs $+0''.07$.

ZONE 140. OCTOBER 18. C. $D_0 = -27° 40' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9.10	. .	. .	22.	. .	56.2	. .	. .	1 10 39.04	− 9.45	−0.63	IV.	4	51.114	− 7 53.16	− 6.19	−0.86	1 10 28.96	−27 48 20.21
51	9.10	. .	. .	22.7	. .	. .	15.4	. .	11 40.23	9.46	0.85	IV.	2	22.434	37 55.80	6.27	4.34	11 29.92	28 18 26.41
52	8	. .	32.1	49.5	7.5	24.1	41.6	. .	15 6.86	9.49	0.72	IV.	3	38.820	20 46.63	6.50	2.33	14 56.65	28 1 15.46
53	8	. .	33.	50.7	8.2	25.2	. .	. .	21 7.88	9.54	0.67	IV.	4	46.192	13 1.88	6.91	1.44	20 57.67	27 53 30.23
54	9	. .	34.	51.	. .	26.3	. .	. .	23 8.67	9.55	0.60	IV.	4	54.428	4 25.48	7.07	0.46	22 58.52	27 44 53.01
55	8	. .	27.6	45.5	4.4	21.	. .	. .	25 3.15	9.57	0.91	IV.	2	12.709	48 5.96	7.21	5.53	24 52.67	28 28 38.70
56	8	. .	53.2	10.5	28.7	45.8	. .	. .	27 28.13	9.58	0.77	IV.	3	32.315	27 34.95	7.40	3.12	27 17.78	28 8 5.47
57	8.9	. .	35.	52.8	10.6	27.5	. .	2.5	31 10.09	9.61	0.70	IV.	4	40.707	18 46.14	7.68	2.10	30 59.78	27 59 15.92
58	9.10	. .	. .	. .	. .	. .	. .	. .	33	. .	0.70	VI.	4	39.002	20 32.33	7.84	2.31	33	28 1 2.48
59	9	. .	12.7	. .	49.	. .	. .	40.5	38 48.06	9.67	0.77	IV.	3	30.635	29 20.23	8.33	3.33	38 37.62	9 51.89
60	7.8	. .	40.	57.7	15.7	32.5	49.6	. .	39 14.98	9.67	0.74	IV.	3	34.306	25 30.04	8.37	2.88	39 4.57	6 1.29
61	9	. .	. .	. .	. .	. .	46.5	. .	40 11.40	9.68	0.88	VI.	2	15.946	44 42.72	8.45	5.13	40 0.84	28 25 16.30
62	9.10	. .	. .	14.	32.	. .	. .	. .	42 31.51	9.69	0.62	IV.	4	50.559	8 27.96	8.66	0.92	42 21.20	27 48 57.54
63	8	. .	. .	. .	. .	. .	. .	32.	42 39.23	9.69	0.92	VII.	2	10.077	50 50.98	8.67	5.86	42 28.62	28 31 25.51
64	9	. .	. .	0.1	. .	. .	. .	. .	45 17.40	9.72	0.62	III.	4	48.250	10 52.82	8.92	1.19	45 7.06	27 51 22.93
65	9	. .	. .	43.	0.7	. .	. .	. .	46 0.28	9.72	0.69	IV.	4	40.740	18 43.64	8.98	2.09	45 49.87	27 59 14.71
66	9	. .	. .	. .	. .	. .	. .	20.?	45 27.25	9.72	0.90	VII.	2	11.408	49 27.56	8.93	5.71	45 16.63	28 30 2.20
67	9	. .	17.6	35.8	53.8	. .	. .	. .	48 52.98	9.74	0.89	IV.	2	14.303	46 26.08	9.24	5.31	48 42.35	27 0.63
68	9	. .	22.2	39.8	58.3	15.3	. .	. .	49 57.45	9.75	0.81	IV.	3	22.923	37 23.98	9.35	4.28	49 46.89	17 57.61
69	9.10	. .	18.6	36.1	54.7	11.7	. .	. .	52 53.84	9.77	0.79	IV.	3	25.734	34 27.66	9.64	3.93	52 43.28	15 1.23
70	9	. .	. .	51.	. .	25.5	43.2	. .	53 8.19	9.77	0.76	IV.	3	28.542	31 31.60	9.66	3.59	52 57.66	12 4.85
71	9	. .	. .	. .	. .	45.	2.5	. .	1 54 27.43	9.78	0.83	V.	3	20.796	39 37.71	9.80	4.54	1 54 16.82	20 12.05
72	9	. .	. .	. .	. .	54.?	. .	. .	2 0 36.35	9.82	0.90	V.	2	9.505	51 27.26	10.42	5.97	2 0 25.63	32 3.65
73	7	. .	. .	. .	. .	50.	7.6	25.2	1 32.55	9.83	0.80	V.	3	23.677	36 37.00	10.52	4.20	1 21.92	17 11.72
74	9	. .	. .	. .	54.2	. .	. .	. .	3 53.10	9.84	0.89	IV.	2	9.932	51 0.20	10.78	5.91	3 42.37	28 31 36.89
75	8.9	. .	. .	. .	. .	41.3	59.	. .	4 24.02	9.85	0.64	V.	4	44.025	15 17.53	10.84	1.68	4 13.53	27 55 50.05
76	8	. .	. .	. .	37.5	54.3	11.7	. .	5 36.75	9.85	0.76	IV.	3	27.523	32 35.53	10.97	3.72	5 26.14	28 13 10.22
77	8.9	. .	15.7	33.3	50.8	8.1	. .	. .	13 50.57	9.90	0.64	IV.	4	42.119	17 17.27	11.90	1.92	13 40.03	27 57 51.09
78	9	. .	. .	. .	. .	. .	31.7	. .	13 56.62	9.90	0.82	VII.	3	17.569	43 0.49	11.91	4.94	13 45.90	28 23 37.34
79	7.8	. .	. .	. .	. .	51.3	8.8	. .	15 33.64	9.91	0.86	V.	2	8.598	52 24.14	12.09	6.07	15 22.87	28 33 2.30
80	8.9	. .	37.6	55.2	12.8	30.1	. .	. .	19 12.55	9.94	0.56	IV.	4	50.162	8 52.86	12.54	0.94	19 2.05	27 49 26.34
81	9.10	. .	26.2	. .	2.5	. .	36.7	. .	21 1.58	9.95	0.76	IV.	3	22.601	37 44.32	12.76	4.33	20 50.87	28 18 21.41
82	9	. .	. .	21.3	40.	. .	13.2	. .	22 38.70	9.96	0.74	IV.	3	25.601	24 8.7	12.96	3.95	22 28.00	28 4 45.6
83	9	. .	. .	. .	. .	. .	21.3	38.5	22 46.29	9.96	0.63	VI.	4	39.051	15 15.5	12.98	2.30	22 35.70	27 55 50.8
84	8.9	. .	. .	49.5	7.5	24.6	. .	. .	25 6.91	9.97	0.69	IV.	3	30.256	29 44.06	13.28	3.37	24 56.25	28 10 20.71
85	9	. .	. .	. .	. .	5.3	22.8	. .	2 25 47.68	− 9.98	−0.81	V.	2	14.008	−46 44.48	−13.37	−5.40	2 25 36.89	−28 27 23.25

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(140) 82. Micrometer reading assumed as 35ʳ.601 instead of 25ʳ.601.

(140) 83. Micrometer reading assumed as 44ʳ.051 instead of 39ʳ.051.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 140	Oct. 18, 2 19	. .	. .	. .	. .	. .	. .	. .	30.102	57.5	51.9			
	3 59	. .	. .	. .	. .	. .	. .	. .	30.088	57.5	51.3			
	4 19	. .	. .	. .	. .	. .	. .	. .	. .	. .	51.2			
	4 40	67 2 33.0	33.7	31.1	21.6	25.1	33.6	29.68[a]	30.080	58.0	51.0	58.5	56.0	55.3
	4 58	. .	. .	. .	. .	. .	. .	. .	30.078	57.5	50.8			

[a] Corr. for runs +0″.07.

ZONE 141. OCTOBER 18. C. $D_{\circ} = -27° 40' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	8.1	25.	43.1	0.5	. .	. .	3 56 42.78	− 9.31	−1.46	IV.	4	45.679	−13 33.92	−25.54	−1.46	3 56 32.01	−27 54 20.92
2	9	. .	. .	7.5	25.5	. .	59.7	. .	58 24.86	9.31	1.76	IV.	3	36.565	23 8.27	25.84	2.59	58 13.79	28 3 56.70
3	7.8	. .	. .	. .	38.	55.3	12.3	. .	3 59 37.55	9.32	1.76	IV.	3	36.584	23 7.09	26.05	2.59	3 59 26.47	28 3 55.73
4	9.10	. .	. .	. .	23.5	. .	58.	. .	4 1 23.23	9.32	1.35	IV.	4	50.661	8 21.50	26.37	0.84	4 1 12.56	27 49 8.71
5	9.10	. .	. .	. .	3.2	. .	. .	. .	6 2.77	9.33	1.48	IV.	4	43.619	15 43.19	27.23	1.71	5 51.96	27 56 32.13
6	9.10	. .	. .	. .	. .	. .	. .	31.5	6 38.86	9.33	1.89	VI.	2	19.132	41 22.90	27.31	4.77	6 27.64	28 22 14.98
7	9	. .	0.	17.2	35.2	. .	. .	. .	17 34.75	9.34	1.58	IV.	4	39.892	19 36.82	29.32	2.21	17 23.83	0 28.35
8	9	. .	. .	. .	48.2	. .	22.5	. .	17 47.52	9.34	1.74	IV.	3	29.995	30 0.31	29.36	3.40	17 36.44	10 53.07
9	9	. .	. .	. .	2.	18.7	35.4	. .	19 0.72	9.34	2.10	IV.	2	8.569	52 25.94	29.59	6.14	18 49.28	33 21.67
10	9	. .	. .	5.7	23.7	40.5	. .	. .	25 23.02	9.34	1.74	IV.	3	30.624	29 20.92	30.79	3.33	25 11.94	28 10 15.04
11	9.10	. .	9.	26.3	44.7	. .	. .	. .	27 43.96	9.34	1.43	IV.	4	49.256	9 49.73	31.23	1.01	27 33.19	27 50 41.97
12	9	. .	. .	23.5	. .	. .	. .	. .	28 40.94	9.34	2.05	III.	2	13.271	47 30.67	31.42	5.53	28 29.55	28 28 27.62
13	9	. .	. .	29.5	. .	3.7	. .	. .	28 46.50	9.34	2.10	IV.	2	10.267	50 39.36	31.44	5.92	28 35.06	31 36.72
14	9.10	. .	. .	. .	55.1	12.	29.3	. .	34 54.20	9.34	2.06	IV.	2	12.753	48 3.12	32.62	5.59	34 42.80	29 1.33
15	9	. .	4.5	23.	40.7	. .	. .	. .	38 40.00	9.34	1.73	IV.	3	27.300	32 49.58	33.35	3.75	38 28.93	28 13 46.68
16	8	. .	. .	. .	. .	. .	. .	15.7	38 23.48	9.34	1.47	VII.	4	48.525	10 34.82	33.30	1.10	38 12.67	27 51 29.22
17	8	. .	. .	. .	38.6	55.5	12.8	. .	40 37.78	9.34	1.95	IV.	2	19.749	40 44.11	33.73	4.70	40 26.49	28 21 42.54
18	9.10	. .	. .	. .	. .	25.7	. .	. .	4 58 8.27	9.33	1.62	V.	4	47.851	11 17.53	37.22	1.18	4 57 57.32	27 52 15.93
19	9.10	. .	. .	. .	12.	30.7	. .	. .	5 6 12.07	− 9.32	−2.05	IV.	2	17.075	−43 32.00	−38.86	−5.04	5 6 0.70	−28 24 35.90

ZONE 142. OCTOBER 26. P. $D_{\circ} = -23° 17' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	17.3	. .	21 0 43.41	. .	. .	VI.	1	5.210	−55 56.00	− 9.49	−4.76	. . .	−24 13 50.25
2	8	. .	. .	. .	. .	29.5	. .	. .	2 12.57	. .	. .	V.	3	23.340	36 58.33	9.27	3.10	. . .	23 54 50.70
3	8	. .	. .	. .	. .	24.	. .	. .	3 7.13	. .	. .	V.	3	34.533	25 16.00	9.13	2.09	. . .	43 7.22
4	7	. .	. .	. .	. .	17.	. .	. .	4 0.23	. .	. .	V.	4	54.240	4 37.14	9.00	0.34	. . .	22 26.48
5	8	. .	. .	. .	7.	. .	. .	57.	6 6.66	. .	. .	IV.	4	47.420	11 44.86	8.69	0.94	. . .	29 34.49
6	8	. .	. .	. .	. .	. .	. .	8.5	8 18.19	. .	. .	VII.	4	51.040	7 57.10	8.36	0.63	. . .	23 25 46.09
7	8	. .	. .	. .	. .	7.5	. .	. .	13 50.53	. .	. .	V.	2	15.200	45 29.80	7.57	3.84	. . .	24 3 21.21
8	7	9.2	26.	42.5	0.3	16.	. .	. .	16 59.48	. .	. .	IV.	2	22.360	38 0.45	7.12	3.19	. . .	23 55 50.76
9	8	4.	. .	38.	. .	. .	. .	. .	21 23 54.54	. .	. .	III.	3	34.575	−25 12.72	− 6.16	−2.09	. . .	−23 43 0.97

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 142	Oct. 26, 21 0	62 39 65.5	67.2	66.2	51.6	55.3	62.6	61.40	30.435	52.5	41.5	52.0		
	21 23	. .	. .	. .	. .	. .	. .	. .	30.454	52.0	41.3	. .	52.0	

REMARKS.

October 18. Unable to observe stars of the 9th magnitude; can observe those of the 8th magnitude only with great difficulty.

ZONE 143. OCTOBER 27. C. $D_0 = -23° 17' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9.10	. .	. .	. .	43.?	. .	. .	. .	1 58 42.14	−16.84	−0.45	IV.	3	19.921	−40 32.37	−6.13	−3.49	1 58 24.85	−23 58 21.99
2	9.10	. .	. .	. .	. .	. .	57.7	. .	1 59 23.85	16.85	0.34	VI.	2	11.304	49 34.33	6.06	4.35	1 59 6.66	24 7 24.74
3	6.7	. .	52.5	9.6	26.3	43.5	0.0	. .	2 2 26.27	16.87	0.62	IV.	3	35.112	24 39.36	5.86	2.00	2 2 8.78	23 42 27.22
4	7	. .	3.3	20.	37.3	53.8	10.4	. .	6 36.88	16.89	0.71	IV.	4	42.314	17 5.10	5.59	1.32	6 19.28	23 34 52.01
5	8	. .	6.3	23.2	41.3	. .	. .	. .	8 40.21	16.91	0.47	IV.	2	19.112	41 24.15	5.46	3.57	8 22.83	23 59 13.18
6	8	. .	. .	44.	1.3	17.5	34.	. .	9 0.46	16.91	0.40	IV.	2	14.164	46 34.70	5.43	4.06	8 43.15	24 4 24.19
7	8	. .	. .	. .	. .	. .	. .	27.3	9 36.77	16.92	0.62	VII.	3	33.001	26 52.15	5.39	2.20	9 19.23	23 44 39.74
8	9	. .	. .	. .	. .	20.3	36.5	. .	11 3.18	16.93	0.70	V.	3	39.188	20 23.99	5.31	1.59	10 45.55	38 10.89
9	8.9	. .	8.2	23.7	42.	. .	. .	. .	19 41.30	16.98	0.74	IV.	3	41.248	18 14.52	4.82	1.42	19 23.58	36 0.76
10	8.9	. .	. .	. .	13.3	29.6	46.5	. .	20 12.81	16.98	0.71	IV.	3	38.228	21 23.95	4.79	1.69	19 55.12	39 10.43
11	8.9	. .	57.3	13.8	32.	48.	. .	. .	22 31.02	16.99	0.57	IV.	3	25.076	35 9.01	4.68	2.98	22 13.46	52 56.67
12	7	. .	. .	. .	. .	38.3	55.4	. .	23 21.74	17.00	0.87	V.	4	55.145	3 40.33	4.64	0.07	23 3.87	21 25.04
13	8	. .	55.5	12.8	29.5	. .	. .	. .	25 29.24	17.01	0.65	IV.	3	32.416	27 28.60	4.53	2.26	25 11.58	45 15.39
14	8.9	. .	. .	. .	56.9	. .	29.5	. .	25 55.87	17.02	0.52	IV.	2	18.502	42 2.49	4.51	3.63	25 38.33	59 50.63
15	9	. .	35.3	52.5	9.6	. .	. .	. .	28 9.11	17.03	0.65	IV.	3	29.422	30 36.45	4.40	2.55	27 51.43	23 48 23.40
16	8.9	. .	57.5	15.	32.8	49.	. .	. .	29 31.77	17.04	0.41	IV.	2	7.908	53 7.26	4.33	4.69	29 14.32	24 10 56.28
17	7	. .	42.2	59.3	17.2	34.	51.	8.	31 16.79	17.05	0.74	IV.	4	38.338	21 14.54	4.26	1.68	30 59.00	23 39 0.48
18	9.10	. .	. .	. .	. .	. .	35.5	52.2	31 1.86	17.05	0.78	VI.	4	42.230	17 10.06	4.27	1.33	30 44.03	34 55.66
19	9.10	. .	. .	. .	20.2?	. .	. .	. .	34 19.75	17.06	0.77	IV.	4	40.940	18 31.09	4.13	1.45	34 1.92	36 16.67
20	10	. .	. .	. .	. .	36.?	. .	. .	40 19.08	17.10	0.64	V.	3	26.050	34 8.15	3.87	2.89	40 1.34	51 54.91
21	9	. .	. .	44.5	2.	18.5	. .	. .	42 1.42	17.11	0.72	IV.	3	34.214	25 35.75	3.81	2.08	41 43.59	43 21.64
22	7.8	. .	50.6	7.	25.	41.	57.3	. .	44 24.08	17.12	0.78	IV.	3	38.237	21 23.38	3.72	1.68	44 6.18	39 8.78
23	8	. .	. .	. .	41.2	58.5	. .	. .	45 24.56	17.12	0.70	IV.	3	29.882	30 7.34	3.67	2.51	45 6.74	23 47 53.52
24	9	. .	. .	. .	. .	. .	. .	2.5	46 11.73	17.13	0.51	VII.	2	13.708	47 3.12	3.65	4.11	45 54.09	24 4 50.88
25	8	. .	. .	. .	. .	. .	53.8	10.3	47 19.95	17.13	0.72	VI.	3	31.918	28 0.04	3.61	2.31	47 2.10	23 45 45.96
26	8.9	. .	58.3	15.2	32.7	. .	. .	. .	49 32.03	17.14	0.70	IV.	3	27.956	32 8.24	3.53	2.70	49 14.19	49 54.47
27	9	. .	. .	10.8	28.3	44.8	. .	17.8	50 27.67	17.15	0.85	IV.	4	41.402	18 2.30	3.50	1.40	50 9.67	35 47.20
28	9	. .	47.2	. .	22.5	38.2	. .	. .	53 21.34	17.16	0.59	IV.	3	19.234	41 15.68	3.41	3.56	53 3.59	59 2.65
29	9	. .	. .	19.8	37.8	. .	. .	. .	54 36.96	17.17	0.90	IV.	4	44.608	14 41.16	3.38	1.12	54 18.89	32 25.66
30	9	. .	. .	. .	1.5	. .	34.4	. .	56 1.09	17.18	0.98	IV.	4	52.438	6 30.19	3.34	0.34	55 42.93	24 13.87
31	9	. .	. .	. .	52.8	. .	25.5	. .	2 57 52.02	17.18	0.78	IV.	3	33.555	26 17.09	3.28	2.15	2 57 34.06	23 44 2.52
32	9.10	. .	. .	. .	19.5	. .	51.5	. .	3 1 18.12	17.20	0.58	IV.	2	14.751	45 57.73	3.21	4.01	3 1 0.34	24 3 44.95
33	9.10	. .	. .	. .	10.2	. .	. .	. .	6 9.79	17.22	0.88	IV.	4	42.668	16 42.78	3.09	1.29	5 51.69	23 34 27.16
34	9	. .	. .	. .	10.3	. .	44.5	. .	7 10.40	17.22	0.89	IV.	4	41.603	17 49.63	3.06	1.39	6 52.29	35 34.08
35	9	. .	17.8	35.	. .	. .	. .	. .	10 51.62	17.24	0.91	III.	4	42.368	17 1.71	2.99	1.32	10 33.47	23 34 46.02
36	7	. .	. .	. .	1.3	. .	34.	51.5	11 0.41	17.24	0.59	IV.	2	13.989	46 45.60	2.99	4.08	10 42.58	24 4 32.67
37	9.10	. .	. .	50.3	. .	26.3	. .	. .	13 9.48	17.25	0.93	IV.	4	44.738	14 32.88	2.95	1.11	12 51.30	23 32 16.94
38	9	. .	. .	. .	. .	42.5	. .	. .	14 25.59	17.26	0.74	V.	3	26.492	33 40.47	2.93	2.84	14 7.59	23 51 26.24
39	6	. .	. .	. .	. .	26.3	43.	59.7	15 9.10	17.26	0.54	V.	2	8.148	52 52.38	2.92	4.67	14 51.30	24 10 39.97
40	9.10	. .	. .	. .	. .	. .	59.2	. .	16 25.67	17.27	0.96	VI.	4	47.137	12 2.30	2.90	0.85	16 7.44	23 29 46.05
41	7	. .	46.6	3.5	21.3	37.4	54.	. .	23 20.38	17.29	0.71	IV.	2	18.484	42 3.62	2.83	3.63	23 2.38	59 50.08
42	9.10	. .	21.3	. .	57.	. .	. .	46.5	24 55.85	17.29	0.86	IV.	3	35.625	24 7.17	2.81	1.95	24 37.70	41 51.93
43	9	. .	. .	6.8	23.5	39.8	. .	. .	27 23.23	17.30	1.02	IV.	4	49.330	9 45.15	2.79	0.65	27 4.91	27 28.59
44	9.10	. .	. .	20.2	. .	. .	. .	28.3	28 37.36	17.31	0.88	IV.	3	35.383	24 22.48	2.78	1.97	28 19.17	42 7.23
45	9	. .	. .	32.3	. .	6.3	. .	39.2	28 49.07	17.31	0.91	IV.	3	38.130	21 30.04	2.78	1.70	28 30.85	23 39 14.52
46	9	. .	. .	. .	. .	. .	. .	38.3	29 47.58	17.31	0.69	VII.	2	17.316	43 16.81	2.77	3.75	29 29.58	24 1 3.33
47	9.10	. .	. .	. .	16.	32.3	. .	. .	32 15.52	17.32	0.96	IV.	3	42.355	17 5.17	2.77	1.32	31 57.24	23 34 49.26
48	9.10	. .	. .	. .	. .	54.2	. .	. .	33 37.28	17.32	0.67	VII.	3	23.991	36 17.47	2.77	3.08	33 19.29	54 3.32
49	8	. .	. .	37.3	54.6	10.8	. .	. .	3 35 53.99	−17.33	−0.87	IV.	3	33.805	−26 1.22	−2.76	−2.12	3 35 35.79	−23 43 46.10

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 143	Oct. 27,	2 0	62 39 67.7	72.4	72.9	56.2	60.9	64.8	65.82	30.586	38.7	31.4	37.3	39.3	49.0
		2 20	.	. .	. .	. .	. .	. .	. .	. . .	. .	31.3			
		2 40	.	. .	. .	. .	. .	. .	. .	30.604	38.5	31.3			
		3 1	.	. .	. .	. .	. .	. .	. .	. .	. .	31.8			
		3 23	.	. .	. .	. .	. .	. .	. .	30.610	38.8	31.2			
		3 50	49.3	54.4	56.1	36.3	43.8	45.8	47.62	. .	. .	. .	37.0	39.5	

REMARKS.

Oct. 27. Stars unsteady; night unfavorable; a very great change in the reading of the circle, which had been left without the usual pressure of the clamp.

(143) 1. Declination 1′ discordant from Arg. Z. 324, 114.

(143) 17. Transits discordant.

(143) 23. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.

(143) 37. Transits discordant; that over T. III probably 2ˢ in error, (see Transit Z., 1847, October. 18,) and rejected.

ZONE 143. OCTOBER 27. C. $D_0 = -23° 17' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	53.2	. .	. .	3 36 36.42	−17.33	−1.08	V.	4	53.206	− 5 41.91	− 2.76	−0.27	3 36 18.01	−23 23 24.94
51	8	. .	8.2	. .	42.8	58.3	15.4	. .	38 41.81	17.34	0.82	IV.	3	26.687	33 27.87	2.76	2.82	38 23.65	51 13.45
52	9	. .	. .	42.8	. .	. .	. .	. .	40 59.49	17.34	1.01	III.	4	43.938	15 23.05	2.76	1.18	40 41.14	33 6.99
53	4	. .	. .	. .	43.3	59.	15.7	. .	40 42.32	17.34	0.93	IV.	3	35.751	23 59.21	2.76	1.94	40 24.05	41 43.91
54	9	. .	. .	. .	. .	8.3	25.	. .	40 51.42	17.34	0.95	V.	3	37.652	22 0.28	2.76	1.75	40 33.13	39 44.79
55	9	. .	57.8	14.7	31.8	. .	. .	. .	45 31.45	17.35	1.13	IV.	4	53.576	5 18.78	2.78	0.24	45 12.97	23 1.80
56	9.10	. .	. .	. .	. .	55.7	. .	. .	46 38.92	17.36	1.12	V.	4	53.106	5 48.13	2.78	0.28	46 20.44	23 31.19
57	7	. .	. .	29.2	45.7	2.8	. .	. .	47 45.72	17.36	1.02	IV.	3	42.882	16 31.86	2.79	1.27	47 27.34	34 15.92
58	9	. .	14.2	30.7	. .	. .	. .	. .	49 47.81	17.37	0.78	III.	2	18.931	41 35.19	2.80	3.59	49 29.66	59 21.58
59	8.9	. .	. .	. .	. .	20.	. .	53.5	3 50 2.99	−17.37	−0.85	V.	3	26.102	−34 4.88	− 2.80	−2.88	3 49 44.77	−23 51 50.56

ZONE 144. OCTOBER 28. P. $D_0 = -23° 17' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	6.	22.5	40.	57.	. .	. .	. .	21 23 56.45	−16.11	−0.21	IV.	3	34.635	−25 9.28	−18.36	−2.54	21 23 40.13	−23 43 0.18
2	6.7	6.3	23.	40.3	. .	. .	. .	. .	26 57.00	16.14	0.31	III.	1	11.613	49 13.31	17.96	4.84	26 40.55	24 7 6.11
3	7.8	. .	. .	. .	6.	. .	39.	. .	27 5.34	16.14	0.23	IV.	3	30.845	29 6.92	17.94	2.92	26 48.97	23 46 57.78
4	8	. .	. .	. .	. .	. .	29.	. .	27 55.47	16.15	0.15	VI.	4	47.670	11 28.81	17.83	1.26	27 39.17	29 17.90
5	8	. .	. .	. .	42.	. .	. .	. .	29 41.40	16.17	0.22	IV.	3	33.490	26 21.23	17.60	2.65	29 25.01	44 11.48
6	7	. .	. .	. .	41.5	. .	. .	. .	31 40.75	16.19	0.24	IV.	3	25.577	34 37.64	17.36	3.44	31 24.32	52 28.44
7	Neb.	. .	. .	. .	. .	. .	. .	59.	32 8.40	16.19	0.24	VII.	3	26.810	33 20.53	17.30	3.32	31 51.97	51 11.15
8	6	. .	. .	. .	. .	1.	. .	34.5	33 43.95	16.21	0.26	V.	3	21.925	38 26.86	17.10	3.81	33 27.48	56 17.77
9	7	. .	. .	. .	. .	. .	18.	. .	34 44.29	16.22	0.24	VI.	3	26.887	33 15.70	16.98	3.31	34 27.83	51 5.99
10	7.8	3.3	21.	. .	55.	. .	. .	. .	40 54.29	16.28	0.14	IV.	4	46.240	12 58.86	16.22	1.41	40 37.87	30 46.49
11	7	18.	34.5	51.5	9.3	. .	. .	. .	43 8.42	16.30	0.27	IV.	2	20.365	40 5.64	15.95	3.96	42 51.85	57 55.55
12	8	. .	. .	. .	. .	. .	26.	. .	43 52.49	16.31	0.12	VI.	4	49.340	9 44.21	15.87	1.10	43 36.06	27 31.18
13	8	. .	. .	. .	. .	. .	. .	12.5	44 22.22	16.32	0.10	VII.	4	53.785	5 4.93	15.80	0.66	44 5.80	22 51.39
14	8	. .	. .	. .	. .	23.5	. .	. .	46 6.65	16.33	0.18	V.	3	37.407	22 15.76	15.60	2.27	45 50.14	40 3.63
15	7	. .	. .	. .	17.	. .	. .	. .	47 16.11	16.35	0.27	IV.	2	18.570	41 58.23	15.46	4.14	46 59.49	59 47.83
16	7	. .	. .	. .	. .	. .	6.	22.7	47 32.25	16.35	0.20	VI.	3	32.165	27 44.61	15.43	2.78	47 15.70	45 32.82
17	8	. .	. .	. .	16.5	. .	. .	. .	49 16.28	16.37	0.11	IV.	4	52.843	6 4.62	15.23	0.76	48 59.80	23 50.61
18	7	. .	. .	. .	. .	18.3	. .	. .	50 1.36	16.38	0.25	V.	3	21.690	38 41.67	15.14	3.83	49 44.73	56 30.64
19	6.7	. .	. .	. .	8.	. .	41.9	. .	51 7.95	16.39	0.15	IV.	4	42.000	17 24.67	15.02	1.82	50 51.41	23 35 11.51
20	7	. .	. .	15.7	. .	49.3	. .	. .	52 32.41	16.40	0.27	V.	2	17.743	42.50.06	14.86	4.23	52 15.74	24 0 39.15
21	8.9	. .	. .	. .	. .	. .	. .	25.	52 34.17	16.40	0.31	VII.	1	8.720	52 15.47	14.86	5.14	52 17.46	24 10 5.47
22	7	. .	. .	. .	. .	. .	28.	. .	21 59 54.55	16.48	0.07	VI.	4	55.920	2 51.37	14.04	0.45	21 59 38.00	23 20 35.86
23	7.8	. .	. .	. .	46.3	. .	. .	. .	22 1 45.67	16.50	0.19	IV.	3	31.780	28 8.26	13.85	2.82	22 1 28.98	45 54.93
24	8	58.	15.	. .	. .	. .	. .	. .	7 48.43	16.56	0.10	II.	4	49.660	9 24.15	13.22	1.07	7 31.77	27 8.44
25	6.7	. .	. .	46.3	4.	20.	. .	. .	8 3.18	16.56	0.19	IV.	3	32.450	27 26.47	13.19	3.77	7 46.43	45 13.43
26	5.6	. .	. .	. .	56.	12.5	. .	. .	8 55.41	16.57	0.22	IV.	3	25.023	35 12.28	13.10	3.50	8 38.62	52 58.88
27	7.8	. .	. .	. .	. .	45.	. .	. .	9 28.08	16.58	0.21	V.	3	26.347	33 49.64	13.04	3.37	9 11.29	23 51 36.05
28	7	. .	. .	. .	26.	. .	59.	. .	10 25.12	16.59	0.26	IV.	2	14.925	46 49.55	12.95	4.53	10 8.27	24 4 37.03
29	7	. .	. .	. .	. .	. .	. .	47.	10 56.62	16.59	0.12	VII.	4	44.470	14 49.25	12.90	1.56	10 39.91	23 32 33.71
30	7.8	. .	. .	. .	49.5	. .	. .	. .	12 49.20	16.61	0.09	IV.	4	48.920	10 10.61	12.72	1.13	12 32.50	27 54.46
31	8	. .	. .	. .	36.	. .	. .	. .	13 35.58	16.62	0.13	IV.	4	42.680	16 42.02	12.64	1.74	13 18.83	23 34 26.40
32	7	42.3	58.5	16.	. .	. .	. .	. .	16 32.74	16.65	0.27	III.	1	11.154	49 42.13	12.36	4.91	16 15.82	24 7 29.40
33	8	13.	. .	46.5	. .	. .	. .	. .	18 3.27	16.67	0.15	III.	3	36.445	23 15.48	12.21	2.37	17 46.45	23 41 0.06
34	8	. .	. .	. .	. .	. .	. .	58.5	18 8.23	16.67	0.06	VII.	4	53.845	5 1.16	12.20	0.64	17 51.50	22 44.00
35	7.8	. .	. .	. .	. .	7.	. .	. .	22 19 50.23	−16.69	−0.06	V.	4	54.673	− 4 9.87	−12.04	−0.55	22 19 33.48	−23 21 52.46

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(144) 28. Micrometer reading assumed as 13ʳ.928 instead of 14ʳ.928.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 144	Oct. 28, 21 20	62 39 65.0	68.0	68.3	47.8	58.5	58.8	61.07	. .	. .	. .	43.5		
	21 26	. .	. .	. .	. .	. .	. .	. .	30.714	45.8	35.8			
	21 50	. .	. .	. .	. .	. .	. .	. .	30.712	44.8	34.7			
	22 39	. .	. .	. .	. .	. .	. .	. .	30.704	43.1	33.2			
	23 1	. .	. .	. .	. .	. .	. .	. .	30.708	42.5	33.2			
	23 59	. .	. .	. .	. .	. .	. .	. .	30.702	41.0	32.0			
	1 33	. .	. .	. .	. .	. .	. .	. .	30.686	39.5	31.0	. .	38.5	

ZONE 144. OCTOBER 28. P. $D_0 = -23° 17' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Declination, 1850.0.	Mean Right Ascension, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	8	. .	. .	. .	. .	36.5	. .	. .	22 21 19.60	−16.70	−0.18	V.	3	29.905	−30 6.15	−11.90	−3.01	22 21 2.72	−23 47 51.06
37	7	25.	41.5	58.5	. .	. .	. .	. .	23 15.31	16.72	0.17	III.	3	31.900	28 0.35	11.73	2.81	22 58.42	45 44.89
38	7.8	. .	. .	. .	. .	54.	. .	. .	23 37.21	16.73	0.08	V.	4	50.340	8 41.69	11.70	0.99	23 20.40	23 26 24.38
39	8	21.	. .	55.	. .	. .	. .	. .	26 11.67	16.76	0.25	III.	1	14.620	46 4.57	11.47	4.46	25 54.66	24 3 50.60
40	8	. .	. .	. .	. .	15.	. .	. .	26 58.03	16.76	0.25	V.	2	16.155	44 29.80	11.40	4.40	26 41.02	2 15.60
41	8	. .	. .	. .	42.5	. .	. .	. .	29 41.56	16.79	0.25	IV.	2	16.083	44 34.25	11.16	4.40	29 24.52	24 2 19.81
42	7	. .	. .	. .	. .	. .	2.5	. .	30 28.96	16.80	0.10	VI.	4	46.030	13 11.59	11.09	1.42	30 12.06	23 30 54.10
43	7	. .	. .	. .	. .	. .	44.3	. .	31 10.81	16.81	0.08	VI.	4	51.870	7 5.31	11.03	0.83	30 53.92	24 47.17
44	7	. .	. .	. .	. .	. .	. .	27.	31 36.60	16.81	0.11	VII.	4	43.625	15 42.18	11.00	1.65	31 19.68	33 24.83
45	8	19.3	. .	52.5	. .	. .	. .	. .	36 9.52	16.86	0.21	III.	2	23.125	37 12.13	10.63	3.70	35 52.45	54 56.46
46	7.8	. .	. .	52.	. .	. .	. .	. .	37 8.74	16.87	0.17	III.	3	31.370	28 33.86	10.55	2.86	36 51.70	46 17.27
47	8	. .	. .	. .	. .	33.	. .	. .	37 16.08	16.87	0.20	V.	3	24.773	35 28.15	10.54	3.53	36 59.01	53 12.22
48	8	54.3	. .	28.	. .	. .	. .	. .	39 44.78	16.90	0.22	III.	2	20.545	39 54.09	10.33	3.96	39 27.66	57 38.38
49	7.8	. .	32.	49.	. .	. .	. .	. .	41 5.66	16.91	0.07	III.	4	50.100	8 56.68	10.23	1.01	40 48.68	26 37.92
50	7	. .	. .	. .	26.3	. .	59.	. .	41 25.41	16.92	0.20	IV.	3	24.970	35 15.60	10.21	3.50	41 8.29	52 59.31
51	8	. .	. .	. .	. .	6.5	. .	. .	42 49.69	16.93	0.08	V.	4	46.710	12 29.14	10.10	1.35	42 32.68	30 10.59
52	8	34.5	. .	8.	. .	. .	. .	. .	45 24.68	16.96	0.06	III.	4	50.605	8 25.08	9.91	0.96	45 7.66	26 5.95
53	7.8	9.5	26.	43.	. .	. .	. .	. .	47 59.87	16.99	0.19	III.	3	23.667	36 37.05	9.72	3.64	47 42.69	54 20.41
54	8	. .	. .	34.5	. .	. .	. .	. .	47 51.16	16.99	0.05	III.	4	52.930	5 59.15	9.73	0.73	47 34.12	23 39.61
55	7	8.	24.3	41.	. .	. .	. .	. .	49 57.92	17.01	0.05	III.	4	52.017	6 56.47	9.57	0.82	49 40.86	24 36.86
56	8	. .	. .	. .	. .	22.	. .	. .	50 5.16	17.01	0.11	V.	3	39.013	20 34.84	9.56	2.11	49 48.04	38 16.51
57	7.8	. .	. .	15.3	. .	49.3	. .	. .	51 32.23	17.02	0.11	IV.	3	39.380	20 11.76	9.47	2.07	51 15.10	37 53.30
58	8	. .	. .	30.	. .	. .	. .	. .	52 46.72	17.04	0.13	III.	3	35.997	23 43.40	9.39	2.41	52 29.55	41 25.20
59	5.6	. .	. .	. .	36.3	53.	9.5	. .	53 35.99	17.04	0.10	IV.	4	41.510	17 55.53	9.33	1.86	53 18.85	35 36.72
60	8	. .	. .	53.5	. .	. .	. .	. .	55 10.16	17.06	0.04	III.	4	51.507	7 28.57	9.23	0.87	54 53.06	25 8.67
61	7	. .	. .	1.	17.5	34.3	. .	. .	56 17.44	17.07	0.07	IV.	4	45.895	13 20.31	9.16	1.43	56 0.30	31 0.90
62	8.9	. .	. .	. .	. .	. .	42.	. .	22 57 8.23	17.08	0.20	VI.	2	20.380	40 4.70	9.10	3.97	22 56 50.95	57 47.77
63	7	. .	. .	39.	. .	. .	. .	. .	23 1 55.76	17.13	0.18	III.	3	23.270	37 2.09	8.80	3.68	23 1 38.45	54 44.57
64	7.8	. .	. .	. .	. .	31.	48.	. .	2 14.17	17.13	0.18	V.	3	23.003	37 19.28	8.78	3.71	1 56.86	55 1.77
65	8	1.3	18.	. .	. .	. .	. .	. .	4 51.80	17.16	0.16	II.	3	28.413	31 38.87	8.63	3.17	4 34.45	49 20.67
66	8	. .	. .	3.5	. .	. .	. .	. .	6 20.27	17.18	0.20	III.	2	19.045	41 28.17	8.54	4.12	6 2.89	59 10.83
67	7	. .	. .	. .	48.	4.5	. .	. .	9 47.58	17.21	0.10	IV.	3	39.290	20 17.40	8.33	2.07	9 30.27	23 37 57.80
68	7	10.7	27.3	44.	. .	. .	. .	. .	12 1.11	17.24	0.20	III.	2	15.710	44 57.42	8.22	4.45	11 43.67	24 2 40.09
69	7	. .	. .	. .	22.5	38.5	. .	. .	12 21.83	17.24	0.10	IV.	4	38.720	20 50.39	8.19	2.13	12 4.49	23 38 30.71
70	7	27.	43.5	0.5	17.5	. .	. .	. .	15 17.21	17.27	0.16	IV.	3	27.103	33 1.83	8.06	3.30	14 59.78	50 43.19
71	7.8	. .	. .	. .	5.7	23.	. .	. .	16 5.82	17.28	0.04	IV.	4	50.783	8 13.79	8.02	0.93	15 48.50	25 52.74
72	7	. .	. .	3.	20.5	. .	. .	. .	17 20.00	17.30	0.01	IV.	4	56.880	1 51.49	7.96	0.32	17 2.69	19 29.77
73	7.8	. .	. .	6.	. .	. .	. .	. .	18 22.65	17.31	0.01	III.	4	55.900	2 52.93	7.90	0.42	18 5.33	20 31.25
74	8	. .	. .	. .	43.5	. .	. .	. .	18 42.72	17.31	0.16	IV.	3	24.255	36 0.59	7.89	3.59	18 25.25	53 42.07
75	7	. .	. .	. .	24.	. .	57.	. .	19 23.67	17.31	0.01	IV.	4	54.135	15 11.13	7.85	1.59	19 6.35	23 32 50.57
76	8.9	. .	0.5	. .	. .	. .	. .	. .	21 34.51	17.34	0.20	II.	2	14.310	46 25.15	7.76	4.60	21 16.97	24 4 7.51
77	8	. .	. .	. .	56.	. .	. .	. .	21 55.24	17.34	0.16	IV.	3	24.965	35 15.91	7.74	3.51	21 37.74	23 52 57.16
78	7	. .	. .	. .	. .	44.7	. .	. .	22 27.90	17.35	0.04	V.	4	47.750	11 23.92	7.72	1.24	22 10.51	29 2.88
79	7	33.	49.5	6.5	23.7	40.	. .	. .	26 23.22	17.39	0.12	IV.	3	31.480	28 27.27	7.56	2.85	26 5.71	46 7.68
80	8.9	. .	44.	. .	. .	. .	. .	. .	28 0.67	17.41	0.03	II.	4	50.320	8 42.88	7.48	0.98	27 43.23	26 21.34
81	7	. .	. .	52.	9.	. .	. .	. .	32 8.74	17.45	0.00	IV.	4	54.715	4 7.30	7.34	0.54	31 51.29	21 45.18
82	8	. .	. .	. .	1.	. .	. .	. .	33 0.57	17.45	0.09	IV.	4	40.090	17 19.09	7.31	1.80	32 43.03	34 58.20
83	8	39.5	. .	. .	. .	. .	. .	. .	35 29.98	17.48	0.16	I.	2	21.910	38 27.55	7.23	3.82	35 12.34	56 8.60
84	7	. .	29.	46.	3.	19.3	. .	. .	23 36 2.59	−17.48	−0.10	IV.	3	33.643	−26 11.51	− 7.21	−2.64	23 35 45.01	−23 43 51.36

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(144) 75. Micrometer reading assumed as $44^r.135$, not $54^r.135$.

(144) 80. Transit over T. III assumed as recorded over T. II.

ZONE 144. OCTOBER 28. P. $D_\circ = -23° 17' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
85	8			2.					23 37 18.78	−17.50	−0.18	III.	2	17.627	−42 57.17	− 7.17	−4.26	23 37 1.10	−24 0 38.60
86	7					54.5			37 37.71	17.50	0.02	V.	4	49.103	9 59.14	7.16	1.10	37 20.19	23 27 37.40
87	8				59.				38 58.22	17.52	0.15	IV.	3	24.375	35 53.13	7.11	3.57	38 40.55	53 33.81
88	8		47.3	4.5	22.				40 21.23	17.53	0.14	IV.	3	26.350	33 49.20	7.07	3.38	40 3.56	51 29.65
89	7.8							13.5	40 23.18	17.53	0.02	VII.	4	50.190	8 50.47	7.07	0.99	40 5.63	23 26 28.53
90	7						14.		41 40.19	17.54	0.19	VI.	2	14.997	45 42.34	7.04	4.52	41 22.46	24 3 23.90
91	8	22.			13.				47 12.35	17.60	0.13	IV.	3	25.870	34 19.07	6.92	3.42	46 54.62	23 51 59.41
92	7.8			28.5					52 45.17	17.65	0.01	III.	4	50.950	8 3.31	6.81	0.92	52 27.51	25 41.04
93	7.8				17.3				53 16.97	17.66	0.02	IV.	4	46.725	12 28.32	6.80	1.34	52 59.29	30 6.46
94	7.8					54.			53 37.16	17.66	0.05	V.	4	40.520	18 57.49	6.80	1.96	53 19.45	36 36.25
95	5.6		53.	10.3	28.				59 27.06	17.72	0.13	IV.	2	21.673	38 43.37	6.72	3.84	59 9.21	23 56 23.93
96	9					7.			23 59 50.05	−17.72	−0.14	V.	2	21.230	−39 11.35	− 6.70	−3.89	23 59 32.19	−23 56 51.94

ZONE 145. OCTOBER 28. P. $D_\circ = -23° 17' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7						40.		1 33 6.38	−18.55	. .	VI.	3	36.950	−22 44.37	− 9.63	−2.31	. . . .	−23 40 26.31
2	8		4.	21.					43 37.69	18.62	. .	III.	4	46.150	13 4.44	10.42	1.38	. . . .	30 46.24
3	8	22.	38.5	55.5					45 12.37	18.64	. .	III.	3	24.465	35 47.10	10.55	3.58	. . . .	53 31.23
4	9		29.						47 2.89	18.65	. .	II.	3	25.695	34 29.29	10.70	3.44	. . . .	23 52 13.43
5	8			14.					49 30.80	18.67	. .	III.	1	9.250	51 41.69	10.90	5.14	. . . .	24 9 27.73
6	7	28.	45.3	1.5					52 18.53	18.69	. .	III.	3	38.277	21 20.56	11.14	2.17	. . . .	23 39 3.87
7	7	29.				36.			1 52 19.23	−18.69	. .	V.	3	38.247	−21 23.01	−11.14	−2.18	. . . .	−23 39 6.33

ZONE 146. NOVEMBER 2. P. $D_\circ = -22° 40' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8				44.				21 31 43.70	−17.26	−0.37	IV.	4	49.320	− 9 45.78	−10.81	0.00	21 31 26.07	−22 49 56.59
2	7	4.	20.3	37.3	54.5				36 54.11	17.32	0.71	IV.	3	25.446	34 45.92	10.15	−1.42	36 36.08	23 14 57.49
3	9		1.		35.			25.	38 34.54	17.33	0.64	IV.	3	29.830	30 10.61	9.92	−1.02	38 16.57	23 10 21.55
4	9		0.		34.				40 33.69	17.35	0.38	IV.	4	50.012	9 2.19	9.69	+0.83	40 15.96	22 49 11.05
5	8						30.		40 56.15	17.36	0.92	VI.	1	10.205	50 42.43	9.64	−2.84	40 37.87	23 30 54.91
6	8		20.						43 54.02	17.39	0.88	II.	2	13.360	47 24.84	9.28	2.52	43 35.75	27 36.64
7	8			7.5					44 24.28	17.39	0.81	III.	2	17.823	42 44.73	9.22	2.14	44 6.08	22 56.09
8	8.9	17.		50.5					47 7.38	17.42	0.78	III.	2	21.445	38 57.68	8.90	−1.79	46 49.18	23 19 8.37
9	9			7.					48 23.67	17.43	0.39	III.	4	50.523	8 30.28	8.74	+0.88	48 5.85	22 48 38.14
10	8				19.				49 18.08	17.44	0.83	IV.	2	16.866	43 44.98	8.62	−2.22	48 59.81	23 23 55.82
11	9			44.5					53 1.28	17.48	0.82	III.	2	17.705	42 52.21	8.20	2.15	52 42.98	23 2.56
12	9				46.				53 45.25	17.49	0.72	IV.	3	25.540	34 39.97	8.12	−1.41	53 27.04	23 14 49.50
13	9							59.	53 8.68	17.48	0.39	VII.	4	49.930	9 6.71	8.10	+0.82	52 50.81	22 49 14.08
14	8		16.		50.5				56 49.90	17.52	0.52	IV.	4	41.397	18 2.67	7.79	+0.05	56 31.86	22 58 10.39
15	9							37.	57 46.54	17.52	0.55	VII.	4	38.935	20 36.27	7.78	−0.18	56 28.47	23 0 44.23
16	7	21.3			12.3				21 59 11.72	17.54	0.52	IV.	4	41.320	18 7.51	7.48	+0.05	58 53.66	22 58 14.94
17	9					13.			22 0 56.05	17.58	0.81	V.	2	19.990	40 29.04	7.41	−1.93	21 59 37.67	23 20 38.38
18	8.9	18.	35.						3 8.65	17.59	0.70	II.	2	28.210	31 52.87	7.08	−1.17	22 2 50.36	23 12 1.12
19	8				21.			10.5	3 20.34	17.59	0.50	IV.	4	42.780	16 35.68	7.06	+0.18	3 2.25	22 56 42.56
20	8	2.		35.					5 52.00	17.61	0.53	III.	4	39.550	19 58.39	6.79	−0.12	5 33.86	23 0 5.30
21	8	0.3	16.3	34.					7 50.65	17.63	0.90	III.	2	13.715	47 2.62	6.58	2.51	7 32.12	27 11.71
22	7	21.3	37.5	54.7	11.5	28.3	45.		22 10 11.35	−17.66	−0.58	IV.	3	37.060	−22 37.16	− 6.33	−0.35	22 9 53.11	−23 2 43.84

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 146	Nov. 2, 21 30	62 2 36.8	35.0	34.2	22.3	28.3	37.2	32.30[a]	30.052	61.0	56.2	60.0	58.0	

REMARKS.

(144) 87. Declination 2′ discordant from Arg. Z. 270, 8; and 6′ from Transit Z., 1847, October 18.

(146) 15. Minutes assumed as 56 instead of 57.

(146) 17. Minutes assumed as 59 instead of 0.

[a] Corr. for runs +0.″07.

ZONE 146. NOVEMBER 2. P. $D_0 = -22° 40' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
23	8.9	. . .	28.5	45.3	2.	. .	. .	. .	22 12 1.95	−17.68	−0.37	IV.	4	52.920	− 5 59.78	− 6.15	+1.11	22 11 43.90	−22 46 4.82
24	8	34.	50.	7.3	. .	. .	. .	. .	16 24.02	17.72	0.59	III.	4	38.770	20 47.20	5.72	−0.19	16 5.71	23 0 53.11
25	8.9	19.5	. .	53.3	. .	. .	. .	. .	18 10.05	17.74	0.80	III.	2	17.960	42 36.20	5.55	2.13	17 51.51	22 43.88
26	8	. .	55.	. .	29.5	. .	. .	. .	19 28.80	17.75	0.79	IV.	3	22.743	37 35.34	5.41	1.69	19 10.26	17 42.44
27	9	. .	. .	. .	. .	9.	. .	. .	19 52.05	17.76	0.82	V.	2	18.813	41 42.85	5.38	−2.06	19 33.48	23 21 50.29
28	7	. .	. .	. .	. .	8.7	25.3	. .	20 51.85	17.77	0.43	V.	4	49.053	10 2.27	5.30	+0.75	20 33.65	22 50 6.82
29	9	48.5	. .	22.5	. .	. .	. .	. .	23 39.17	17.80	0.91	III.	2	14.416	46 18.81	5.04	−2.44	23 20.46	23 26 26.29
30	8.9	. .	26.5	. .	0.	. .	. .	. .	26 59.93	17.83	0.48	IV.	4	46.785	12 24.51	4.74	+0.55	26 41.62	22 52 28.70
31	8	. .	. .	. .	. .	44.	0.	. .	26 26.63	17.82	0.87	V.	2	18.170	42 23.40	4.78	−2.12	26 7.94	23 22 30.30
32	9	. .	. .	46.	. .	. .	. .	. .	29 2.79	17.85	0.90	III.	2	15.680	44 59.30	4.56	2.34	28 44.04	25 6.20
33	7	. .	. .	. .	. .	. .	5.	. .	30 31.15	17.87	0.98	VI.	1	10.070	50 50.79	4.43	2.88	30 12.30	30 58.10
34	7.8	. .	. .	. .	. .	. .	46.	. .	31 12.19	17.88	0.89	VI.	2	15.907	44 45.17	4.37	2.32	30 53.42	24 51.86
35	9	. .	. .	52.	. .	. .	. .	. .	33 8.75	17.90	0.77	III.	3	26.430	33 43.80	4.22	1.33	32 50.08	13 49.35
36	9	. .	. .	. .	. .	46.	. .	. .	33 29.05	17.90	0.85	V.	3	20.410	40 2.18	4.18	1.89	33 10.30	20 8.25
37	9	42.	. .	15.5	. .	. .	. .	. .	37 32.42	17.94	0.90	III.	2	16.185	44 27.73	3.85	−2.30	37 13.58	23 24 33.88
38	9	6.5	. .	40.	. .	. .	. .	. .	40 56.73	17.98	0.55	III.	4	43.385	15 57.92	3.58	+0.23	40 38.20	22 56 1.27
39	8	. .	. .	50.5	. .	24.5	. .	. .	41 7.41	17.98	0.94	III.	2	14.115	46 37.58	3.57	−2.47	40 48.49	23 26 43.62
40	8	. .	. .	35.	. .	. .	. .	. .	42 51.80	18.00	0.99	III.	1	10.745	50 7.66	3.44	2.81	42 32.81	30 13.91
41	8	36.3	. .	10.	. .	. .	. .	. .	45 26.82	18.03	0.93	III.	2	14.633	46 5.06	3.25	2.42	45 7.86	26 10.73
42	8	. .	. .	9.	. .	. .	. .	. .	47 25.75	18.05	0.79	III.	3	24.956	35 16.10	3.11	1.46	47 6.91	15 20.67
43	7	. .	. .	50.3	7.5	24.	. .	. .	47 7.00	18.04	0.73	IV.	3	30.577	29 23.92	3.13	0.95	46 48.23	9 28.00
44	9	. .	. .	. .	. .	9.	. .	. .	47 52.04	18.05	0.90	V.	2	16.997	43 36.89	3.08	2.22	47 33.09	23 42.19
45	8	9.5	26.	43.3	0.7	. .	. .	. .	50 59.97	18.07	0.92	IV.	2	16.047	44 36.45	2.94	−2.31	49 40.96	23 24 41.70
46	8	. .	. .	. .	. .	. .	47.7	. .	50 14.18	18.08	0.47	VI.	4	48.980	10 6.60	2.92	+0.75	49 55.63	22 50 8.77
47	9	. .	. .	. .	. .	0.5	. .	. .	51 43.67	18.09	0.57	V.	4	42.217	17 11.06	2.81	+0.13	51 25.01	22 57 13.74
48	7.8	. .	. .	. .	41.5	. .	. .	. .	52 40.66	18.10	0.86	IV.	3	20.697	39 43.74	2.75	−1.87	52 21.70	23 19 48.36
49	7	. .	. .	. .	49.5	5.	. .	. .	53 48.44	18.11	0.76	IV.	3	26.903	33 14.25	2.67	1.29	53 29.57	13 18.21
50	9	. .	. .	55.	. .	. .	. .	. .	54 11.79	18.13	0.92	III.	2	15.630	45 2.50	2.59	2.35	54 52.76	25 7.44
51	7	. .	45.3	2.5	20.5	. .	. .	. .	56 19.36	18.14	1.00	IV.	1	9.930	50 59.13	2.51	2.88	56 0.22	31 4.52
52	7	. .	8.	25.3	42.5	. .	. .	. .	57 41.89	18.15	0.83	IV.	3	22.715	37 37.10	2.43	1.69	57 22.91	17 41.22
53	9	. .	. .	. .	19.3	. .	. .	. .	22 59 18.79	18.17	0.63	IV.	3	38.103	21 31.74	2.31	0.25	22 58 59.99	1 34.30
54	5	22.5	39.	56.5	13.7	29.7	46.5	. .	23 2 12.93	18.20	0.81	IV.	3	24.167	36 6.12	2.15	−1.56	23 1 53.92	23 16 9.83
55	8	. .	. .	. .	. .	23.	. .	. .	5 6.23	18.23	0.43	V.	4	53.620	5 15.89	1.99	+1.17	4 47.57	22 45 16.71
56	9	. .	. .	. .	. .	0.	. .	. .	7 43.10	18.26	0.78	V.	3	28.650	31 25.02	1.90	−1.14	6 24.06	23 11 28.06
57	9	. .	. .	46.	. .	. .	. .	. .	7 2.72	18.25	0.68	III.	3	35.090	24 40.36	1.82	−0.52	7 43.79	23 4 42.70
58	9	. .	38.	. .	. .	. .	. .	. .	11 11.73	18.29	0.58	II.	4	42.323	17 4.41	1.65	+0.14	10 52.86	22 57 5.92
59	8	. .	34.	51.	. .	. .	. .	. .	16 7.90	18.35	0.96	III.	2	14.820	45 53.20	1.42	−2.40	15 48.59	23 25 57.02
60	8	. .	. .	. .	. .	38.5	. .	. .	16 21.60	18.35	0.75	V.	3	30.963	28 59.83	1.41	0.91	16 2.50	9 2.15
61	8	. .	. .	. .	22.7	. .	. .	. .	17 21.86	16.36	0.88	IV.	2	20.970	39 27.48	1.36	1.84	17 2.62	19 30.68
62	8.9	. .	. .	7.	. .	. .	57.	. .	18 23.50	18.37	0.89	VI.	2	19.903	40 34.38	1.31	1.94	18 4.24	20 37.63
63	7	. .	. .	. .	. .	. .	59.	. .	19 25.14	18.38	1.06	VI.	1	8.125	52 52.95	1.25	−3.05	19 5.70	23 32 57.25
64	7	. .	4.7	. .	39.	. .	. .	. .	21 38.50	18.40	0.61	IV.	4	41.075	18 22.69	1.17	+0.03	21 19.49	22 58 23.83
65	7.8	. .	23.	39.5	. .	. .	. .	. .	22 56.42	18.42	0.51	III.	4	49.030	10 3.78	1.12	+0.75	22 37.49	22 50 4.15
66	7	. .	. .	. .	. .	. .	. .	20.	22 29.21	18.41	1.01	VII.	1	11.760	49 4.64	1.13	−2.71	22 9.79	23 29 8.48
67	7.8	. .	. .	. .	28.5	. .	. .	. .	31 45.15	18.50	0.46	IV.	4	53.590	5 17.90	0.80	+1.17	31 26.19	22 45 17.53
68	7	. .	. .	. .	. .	. .	27.5	44.	32 10.38	18.51	0.93	V.	2	18.785	41 44.61	0.75	−2.06	31 50.94	23 21 47.42
69	8	. .	5.3	. .	40.5	. .	. .	. .	37 39.40	18.57	1.01	IV.	2	13.163	47 37.59	0.61	2.56	37 19.82	27 40.76
70	[illegible]	. .	. .	41.7	. .	15.5	. .	. .	39 58.52	18.59	0.74	IV.	3	33.584	26 15.28	0.54	0.68	39 39.19	6 16.50
71	8	9.3	26.	43.	. .	. .	. .	. .	23 43 59.72	−18.63	−0.72	III.	3	35.200	−24 33.52	− 0.46	−0.51	23 43 40.37	−23 4 34.49

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(146) 45. Minutes of transit assumed as 49, not 50.

(146) 50. Minutes of transit assumed as 55, not 54.

(146) 56. Minutes of transit assumed as 6, not 7.

(146) 57. Minutes of transit assumed as 8, not 7.

(146) 67. Transit over T. III assumed as recorded over T. IV.

(146) 68. Transits over T.'s V and VI assumed as recorded over T.'s VI and VII.

ZONE 146. NOVEMBER 2. P. $D_0 = -22° 40' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	7	52.5	9.	26.3	43.	59.5	16.	32.7	23 48 42.66	−18.68	−0.53	IV.	4	49.426	− 9 39.06	− 0.36	+0.79	23 48 23.45	−22 49 38.63
73	8	. .	11.	. .	. .	. .	. .	. .	50 44.60	18.70	0.47	II.	4	54.650	4 11.26	0.32	+1.27	50 25.43	22 44 10.31
74	8	38.	55.5	12.5	. .	. .	. .	. .	52 29.03	18.72	0.88	III.	3	24.420	35 49.93	0.30	−1.53	52 9.43	23 15 51.76
75	8	. .	. .	. .	. .	4.	. .	. .	52 47.03	18.72	1.00	V.	2	14.970	45 44.10	0.30	2.40	52 27.31	25 46.80
76	8	. .	. .	. .	. .	. .	52.	. .	23 53 18.15	18.73	1.06	VI.	1	10.763	50 7.22	0.30	2.81	23 52 58.36	30 10.33
77	5	36.	52.	9.3	27.3	43.5	0.	16.5	24 1 26.22	−18.81	−0.94	IV.	2	19.983	−40 29.42	− 0.22	−1.95	0 1 6.47	−23 20 31.59

ZONE 147. NOVEMBER 15. C. $D_0 = -23° 55' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	50.6	7.8	25.	41.5	. .	. .	23 34 24.52	−28.17	−1.37	IV.	3	28.757	−31 17.98	− 6.15	−3.13	23 33 54.98	−24 26 27.26
2	8	. .	. .	34.7	52.3	8.6	25.6	. .	35 51.59	28.18	1.55	IV.	3	25.008	35 13.22	6.07	3.50	35 21.86	30 22.79
3	7.8	. .	0.5	18.5	35.2	51.8	. .	. .	37 34.81	28.21	1.49	IV.	3	34.734	25 3.01	5.97	2.53	37 5.11	20 11.51
4	9	. .	. .	. .	. .	. .	. .	21.2	37 30.68	28.21	1.28	VII.	4	53.332	5 33.57	5.97	0.70	37 1.19	0 40.24
5	8.9	. .	. .	36.	53.	9.6	26.	. .	41 52.63	28.26	1.36	IV.	4	50.710	8 18.42	5.75	0.96	41 23.01	3 25.13
6	9.10	. .	. .	. .	. .	36.	52.6	. .	43 19.02	28.27	1.42	V.	4	47.589	11 34.15	5.69	1.26	42 49.33	6 41.10
7	9.10	. .	. .	. .	50.?	. .	. .	. .	45 49.36	28.30	1.62	IV.	3	31.601	28 19.62	5.58	2.84	45 19.44	23 28.04
8	9.10	. .	. .	19.3	36.3	. .	. .	. .	48 35.86	28.31	1.68	IV.	3	28.758	31 17.92	5.46	3.13	48 5.87	26 26.51
9	9	. .	. .	47.6	5.2	21.8	. .	. .	53 4.64	28.39	1.67	IV.	3	37.452	22 12.69	5.31	2.26	52 34.58	17 20.26
10	9.10	. .	. .	. .	47.2	. .	21.2	. .	53 47.05	28.40	1.67	IV.	3	38.198	21 25.84	5.29	2.18	53 16.98	16 33.31
11	9.10	. .	. .	. .	. .	. .	25.5	42.5	53 51.76	28.40	1.66	V.	3	38.648	20 57.79	5.29	2.14	53 21.70	16 5.22
12	9	. .	. .	49.	6.6	. .	. .	. .	56 5.86	28.43	1.83	IV.	3	28.266	31 48.98	5.23	3.17	55 35.60	26 57.38
13	9	. .	. .	52.3	. .	. .	42.	. .	57 8.68	28.44	1.59	IV.	4	48.856	10 14.63	5.20	1.14	56 38.65	5 20.97
14	9.10	. .	. .	. .	26.2	. .	0.	. .	23 59 25.98	28.47	1.72	IV.	3	40.288	19 14.80	5.12	1.98	23 58 55.79	14 21.90
15	9	. .	22.	. .	56.7	. .	29.2	. .	24 4 55.79	28.53	1.92	IV.	3	29.216	30 49.31	5.04	3.08	0 4 25.34	25 57.43
16	8	. .	. .	. .	29.	45.5	2.3	. .	4 28.40	28.52	1.94	IV.	3	27.258	32 52.16	5.04	3.28	3 57.94	28 0.48
17	9	. .	36.2	53.5	. .	. .	. .	. .	24 6 10.32	−28.54	−2.13	III.	3	21.500	−38 53.10	− 5.02	−3.85	0 5 39.65	−24 34 1.97

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.		B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″							″	in.	°	°	°	°	°
Zone 147	Nov. 15,	23 30	63. 17	37.1 35.9	37.9 38.1	34.9 36.8	22.9 24.2	30.1 30.2	34.4 35.	33.12[a]	30.152	54.	43.4	51.5	51.5	53.
		23 40		. .	. .	. .	. .	. .	. .	. .	. .	. .	44.1			
		0 0		. .	. .	. .	. .	. .	. .	. .	30.152	54.2	44.5			
		0 10		37.1 36.	37.9 38.2	35.6 37.4	22.5 23.8	30.7 30.4	33.1 34.2	33.07	. . .	. .	44.1	49.7	50.2	

REMARKS.

[a]Corr. for runs +0″.07.

ZONE 148. NOVEMBER 20. C. $D_0 = -23° 17' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	18.?	. .	. .	23 52 1.21	−34.69	−0.39	IV.	4	50.812	− 8 11.97	− 1.01	+0.03	23 52 26.	−23 25 42.95
2	9	. .	. .	. .	. .	50.?	. .	. .	53 33.19	34.70	0.39	V.	4	46.618	12 34.97	0.99	−0.37	52 58.	30 6.33
3	8.9	. .	. .	. .	. .	. .	27.5	. .	53 53.91	34.71	0.39	VI.	4	40.459	19 1.20	0.98	0.98	53 18.81	36 33.16
4	7	. .	10.6	27.6	45.5	. .	18.1	. .	23 59 44.48	34.77	0.37	IV.	3	21.540	38 50.96	0.87	2.84	59 9.34	56 24.67
5	9	. .	. .	. .	7.8	. .	. .	. .	0 0 6.96	34.77	0.37	IV.	3	21.041	39 22.15	0.87	−2.89	23 59 31.82	56 55.91
6	7	. .	. .	. .	. .	. .	. .	32.	1 41.75	34.79	0.39	VII.	4	55.765	3 0.77	0.86	+0.50	0 1 6.57	20 31.13
7	8.9	. .	. .	36.	53.	8.5?	. .	42.2	5 52.15	34.82	0.39	IV.	3	38.129	21 30.10	0.84	−1.20	4 16.93	23 39 2.14
8	8	. .	8.5	25.5	43.2	59.2	16.2	. .	6 42.33	34.84	0.37	IV.	2	15.488	45 11.65	0.82	−3.44	6 7.12	24 2 45.91
9	9	. .	48.5	5.3	22.3	39.1	. .	. .	9 22.12	34.89	0.39	IV.	4	51.281	7 42.75	0.81	+0.08	8 46.84	23 25 13.48
10	10	. .	. .	. .	. .	23.5	. .	57.	12 6.55	34.91	0.38	V.	3	32.741	27 8.29	0.80	−1.73	11 31.26	44 40.82
11	8	. .	18.1	35.2	53.	. .	. .	. .	14 52.07	34.94	0.38	III.	3	27.510	32 35.97	0.80	2.24	14 16.75	50 9.01
12	9	. .	. .	. .	. .	. .	. .	43.	15 52.66	34.94	0.39	V.	4	48.270	10 51.50	0.80	0.20	14 17.33	28 22.50
13	9	. .	. .	10.1	26.5	42.8	. .	. .	21 26.23	35.02	0.40	IV.	3	36.187	23 31.99	0.83	1.39	20 50.81	41 4.22
14	7	. .	40.6	57.2	. .	31.5	48.1	. .	29 14.35	35.11	0.40	IV.	3	37.202	22 28.31	0.92	1.29	28 38.84	40 0.52
15	10	. .	. .	55.	. .	. .	45.6	. .	34 11.80	35.17	0.39	IV.	2	19.728	40 45.42	1.00	3.02	33 36.24	58 19.44
16	10	. .	. .	. .	38.2	55.	. .	. .	36 38.06	35.20	0.41	IV.	4	49.125	9 57.88	1.05	0.12	36 2.45	23 27 29.05
17	8	. .	. .	17.	34.2	. .	7.2	. .	42 33.48	35.26	0.39	IV.	2	16.077	44 34.63	1.17	3.39	41 57.83	24 2 9.19
18	9	. .	. .	. .	35.	. .	7.5	. .	42 33.78	35.26	0.39	VI.	2	8.698	52 17.74	1.17	4.13	41 58.13	9 53.04
19	7	. .	. .	. .	. .	. .	. .	36.5	43 45.67	35.26	0.39	VII.	3	7.841	53 11.03	1.18	−4.22	42 10.02	24 10 46.43
20	8.9	. .	. .	. .	. .	43.5	. .	17.	45 26.70	35.29	0.42	V.	4	51.022	7 58.73	1.25	+0.05	44 50.99	23 25 29.93
21	10	. .	41.5	58.2	15.7	. .	. .	. .	51 15.15	35.36	0.42	IV.	4	52.135	6 49.13	1.39	+0.16	50 39.37	24 20.36
22	9	. .	55.8	13.5	31.	. .	. .	. .	0 56 30.05	−35.41	−0.40	IV.	2	18.894	−41 37.71	− 1.55	−3.10	0 55 54.24	−23 59 12.36

ZONE 149. DECEMBER 18. C. $D_0 = -25° 10' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
1	7	46.9	3.7	21.1	38.1	54.9	12.4	29.4	23 49 37.97	−50.94	−1.12	IV.	3	35.469	−24 17.08	− 4.06	−2.43	23 48 45.91	−25 34 23.57
2	8.9	. .	19.2	36.4	53.4	. .	. .	. .	52 53.25	50.98	1.14	IV.	4	40.822	18 41.38	3.88	1.89	51 1.13	28 47.15
3	8.9	30.3	. .	4.4	21.	38.1	. .	. .	56 21.07	51.03	1.15	IV.	4	44.008	15 21.61	3.68	1.57	55 28.89	25 26.86
4	9	. .	10.5	27.2	44.2	. .	. .	. .	59 27.16	51.07	1.16	IV.	4	48.928	10 12.99	3.48	1.07	58 34.93	20 17.54
5	9	. .	. .	. .	. .	9.2	26.5	43.5	23 59 52.29	51.07	1.13	V.	4	42.332	17 6.67	3.47	1.74	23 59 0.09	27 11.88
6	10	. .	. .	58.2	17.	. .	. .	. .	0 6 15.70	51.15	1.03	IV.	3	23.155	37 9.62	3.14	3.73	0 5 23.52	47 16.49
7	9	. .	. .	. .	29.	45.5	. .	20.3	8 28.80	51.18	1.14	IV.	4	50.067	9 1.69	3.01	0.95	7 36.48	19 5.65
8	9	. .	43.5	0.7	17.5	35.1	. .	. .	12 17.64	51.23	1.14	IV.	4	52.498	6 29.38	2.83	0.70	11 25.27	16 32.91
9	7.8	. .	. .	. .	16.3	. .	50.5	7.5	13 15.80	51.24	0.96	IV.	2	13.869	46 58.03	2.80	4.67	12 23.60	57 5.50
10	8.9	. .	. .	. .	. .	. .	. .	29.5	13 38.27	51.24	1.08	VII.	3	37.598	22 2.91	2.78	2.22	12 45.95	32 7.91
11	8.9	. .	. .	. .	. .	9.5	27.	. .	14 52.47	51.27	0.97	V.	2	16.358	44 22.58	2.73	4.43	14 0.23	54 29.74
12	8.9	. .	. .	. .	. .	. .	29.5	36.3	15 45.04	51.28	0.99	VI.	2	21.413	39 5.65	2.68	3.90	14 52.77	49 12.23
13	9	. .	18.6	35.3	52.5	. .	26.8	. .	18 52.39	51.32	0.98	IV.	3	22.341	38 0.77	2.56	3.81	18 0.09	48 7.14
14	9	. .	40.2	57.1	14.2	. .	. .	. .	21 14.05	51.35	1.02	IV.	3	29.302	30 43.98	2.48	3.09	20 21.68	40 49.55
15	7	. .	37.5	55.4	12.	29.5	46.	3.5	22 12.05	51.36	1.08	IV.	4	41.505	17 58.77	2.45	1.82	21 19.61	28 3.04
16	9	. .	. .	. .	. .	. .	. .	28.1	22 36.70	51.37	0.97	VII.	3	24.988	35 13.97	2.44	3.52	21 44.34	45 19.93
17	8.9	. .	27.5	. .	52.1	9.3	26.3	. .	24 51.80	51.40	0.94	IV.	2	15.958	44 46.99	2.38	4.46	23 59.46	54 53.83
18	8	. .	. .	. .	. .	0.8	18.1	. .	25 43.86	51.41	1.06	V.	4	41.024	18 28.52	2.36	1.87	24 51.39	28 32.75
19	8	. .	15.5	32.5	49.3	6.5	. .	. .	28 49.33	51.45	0.99	IV.	3	28.661	31 24.08	2.27	3.15	27 56.89	41 29.50
20	8	. .	. .	. .	. .	32.5	49.	. .	29 15.06	51.45	0.99	IV.	3	27.894	32 12.07	2.26	3.23	28 22.62	42 17.56
21	5	. .	. .	13.3	30.	47.5	4.6	21.5	30 30.14	51.47	1.02	IV.	3	34.295	25 30.73	2.23	2.57	29 37.65	35 35.53
22	8.9	. .	. .	. .	50.2	7.5	24.5	. .	31 50.17	51.49	1.05	IV.	3	40.272	19 15.81	2.21	1.94	30 57.63	29 19.96
23	6.7	. .	. .	. .	. .	. .	. .	5.5	0 32 13.97	−51.49	−0.92	VII.	2	14.984	−45 49.06	− 2.21	−4.56	0 31 21.56	−25 55 55.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 148	Nov. 20,	23 50	62 39 62.7	66.4	66.1	49.8	54.7	59.1	59.80	. .	. .	35.4	46.5	45.5	54.
		0 0	. .	. .	. .	. .	. .	. .	. .	30.390	44.	35.			
		0 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	34.7			
		0 40	. .	. .	. .	. .	. .	. .	. .	30.406	43.0	33.5			
		0 50	62.0	67.4	65.9	50.7	54.7	58.2	59.82	30.400	43.0	33.0	44.5	43.3	
Zone 149	Dec. 18,	23 45	64 32 30.2	31.0	35.5	25.0	29.5	22.6	28.97[a]	30.150	42.5	34.6	43.8	43.4	44.0
		23 59		. .	. .	. .	. .	. .	. .	. .	. .	34.6			
		0 28		. .	. .	. .	. .	. .	. .	. .	. .	35.5			
		0 41		. .	. .	. .	. .	. .	. .	30.148	41.2	35.6			

REMARKS.

(148) 1. Minutes of transit assumed as 53, not 52.

(148) 7. Minutes of transit assumed as 4, not 5.

(148) 12. Minutes of transit assumed as 14, to agree with Arg. Z. 270, 47.

(148) 18. Declination 1′ larger than in Oeltzen.

(148) 19. Minutes of transit assumed as 42, to agree with Arg. Z. 338, 14.

(149) 4. Transits over T.'s III, IV, and V assumed to have been recorded as over T.'s II, III, and IV.

(149) 12. Transit over T. VI assumed to have been at $19^s.5$ instead of $29^s.5$.

(149) 17. Transit over T. I assumed to have been at $17^s.5$ instead of $27^s.5$.

[a] Corr. for runs $+0''.07$.

ZONE 149. DECEMBER 18. C. $D_0=-25° 10' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
24	7	. .	28.	45.2	2.5	. .	. .	. .	0 35 2.10	−51.53	−0.94	IV.	2	19.022	−41 34.69	− 2.17	−4.16	0 34 9.63	−25 51 41.02
25	8	. .	. .	. .	. .	27.	44.	. .	35 9.87	51.53	1.01	VI.	3	34.812	24 57.87	2.17	2.52	34 17.33	35 2.56
26	9	. .	53.2	10.	27.5	44.5	. .	. .	37 27.18	51.56	0.97	IV.	3	28.541	31 31.66	2.14	3.17	36 34.65	41 36.97
27	9.10	. .	. .	14.8	32.	49.2	. .	. .	41 31.63	51.61	0.91	IV.	2	16.987	43 42.41	2.10	4.36	40 39.11	54 48.87
28	9.10	. .	. .	12.1	29.2	. .	. .	. .	42 28.94	51.62	1.05	IV.	4	46.032	13 14.73	2.10	1.36	41 36.27	23 18.19
29	7	. .	. .	26.4	42.5	0.5	17.8	. .	46 43.07	51.67	0.98	IV.	3	34.206	25 36.25	2.09	2.58	45 50.42	35 40.92
30	9	. .	. .	. .	31.	49.	5.1	23.1	47 31.08	51.68	0.91	IV.	2	19.296	41 17.69	2.09	4.13	46 38.49	51 23.91
31	9	. .	. .	. .	. .	49.8	5.9	23.8	47 32.17	51.68	0.91	VI.	2	19.202	41 24.34	2.09	4.14	46 39.58	51 30.57
32	7.8	. .	. .	. .	. .	. .	29.	46.2	48 54.96	51.71	1.01	VII.	3	41.115	18 22.31	2.08	1.86	48 2.24	28 26.25
33	9.10	. .	. .	25.2?	42.6	. .	. .	. .	52 42.01	51.76	0.92	IV.	3	24.474	35 46.92	2.11	3.59	51 49.33	45 52.62
34	9	. .	. .	. .	. .	. .	49.	16.	53 14.93	51.76	1.03	VII.	4	47.492	11 42.11	2.11	1.21	52 22.14	21 45.43
35	9	. .	. .	. .	. .	. .	15.8	33.	0 54 41.70	51.78	0.97	VI.	3	36.371	23 20.25	2.13	2.34	53 48.95	33 24.72
36	9	. .	. .	0.	17.5	. .	. .	. .	1 0 16 78	51.85	0.85	IV.	2	14.566	46 14.48	2.18	4.59	59 24.08	56 21.25
37	7.8	. .	. .	. .	. .	5.7	23.7	40.3	0 49.01	51.86	0.93	V.	3	30.555	29 25.24	2.20	2.95	0 59 56.22	39 30.39
38	9	. .	. .	. .	. .	. .	. .	23.5	11 32.36	51.87	1.00	VII.	4	44.884	14 25.48	2.21	1.48	1 0 39.49	24 29.17
39	8	. .	. .	55.5	12.	29.5	46.6	. .	13 12.11	52.02	0.88	IV.	3	26.124	34 3.26	2.50	3.41	12 19.21	44 9.17
40	8	. .	. .	12.8	30.7	47.5	. .	. .	14 29.95	52.03	0.84	IV.	3	17.252	43 20.07	2.54	4.34	13 37.08	53 26.95
41	9	. .	40.3?	. .	14. ?	32.5	49.5	. .	19 14.72	52.09	0.93	IV.	3	39.744	19 48.74	2.71	2.01	18 21.70	29 53.46
42	9.10	. .	. .	. .	6. ?	. .	. .	. .	21 5.38	52.12	0.89	IV.	3	32.855	27 0.83	2.79	2.72	20 12.37	37 6.34
43	7.8	. .	0.5	17.6	34.5	. .	8.9	. .	22 34.51	52.14	0.91	IV.	3	35.274	24 29.32	2.88	2.45	21 41.46	34 34.65
44	9.10	. .	. .	4.5	21.	. .	. .	. .	24 20.88	52.16	0.85	IV.	3	26.582	33 34.58	2.97	3.36	23 27.87	43 40.91
45	9.10	. .	47.5	. .	23.5	. .	57.8	. .	30 22.90	52.23	0.97	IV.	4	52.668	6 18.60	3.33	0.68	29 29.70	16 22.61
46	9	. .	. .	. .	59.6	17.6	34.	. .	30 59.65	52.24	0.83	IV.	3	23.486	36 48.91	3.37	3.69	30 6.58	46 55.97
47	7.8	. .	. .	24.5	40.8	58.	14.	. .	32 40.51	52.26	0.83	IV.	3	23.246	37 3.90	3.50	3.72	31 47.42	47 11.12
48	9	. .	. .	. .	. .	. .	. .	46.7	33 55.20	52.28	0.78	VII.	2	16.550	44 11.03	3.59	4.41	33 2.14	54 19.03
49	6	39.4	56.	13.3	30.5	47.9	5.1	22.2	39 30.48	52.35	0.80	IV.	3	22.260	38 5.78	4.01	3.81	38 37.33	48 13.60
50	9	. .	32.3	49.5	56.	13.1	. .	. .	43 56.16	52.40	0.94	IV.	4	51.915	7 5.75	4.22	0.76	43 2.82	17 10.73
51	9	. .	42.	. .	16.4	33.5	. .	. .	46 16.11	52.43	0.79	IV.	3	23.152	37 9.81	4.32	3.73	45 22.89	47 17.86
52	7.8	. .	27.	44.6	1.5	18.6	. .	. .	49 1.31	52.46	0.82	IV.	3	32.280	27 37.14	4.44	2.77	48 8.03	37 44.35
53	9	. .	. .	. .	. .	. .	. .	6.	49 14.95	52.46	0.92	VII.	4	51.354	7 39.97	4.45	0.82	48 21.57	25 17 45.24
54	9	. .	. .	. .	. .	. .	. .	6.3	50 14.71	52.48	0.71	VII.	2	10.234	50 47.47	4.48	5.07	49 21.52	26 0 57.02
55	9.10	. .	. .	. .	56.8	. .	. .	. .	54 56.61	52.53	0.92	IV.	4	54.644	4 14.70	4.50	0.49	54 3.16	25 14 19.69
56	9	. .	36.5	53.8	10.8	. .	. .	. .	57 10.61	52.56	0.87	IV.	3	44.068	15 17.60	4.51	1.56	56 17.18	25 23.67
57	9	. .	. .	. .	. .	. .	59.8	16.7	1 57 25.38	52.56	0.75	VI.	2	19.683	40 54.09	4.51	4.09	56 32.07	51 2.69
58	9	. .	. .	10.6	26.8	44.7	. .	. .	2 0 27.20	52.60	0.87	IV.	4	45.697	13 35.69	4.52	1.39	1 59 33.73	23 41.60
59	9	. .	17.5	34.2	51.7	. .	. .	. .	1 51.40	52.62	0.91	IV.	4	53.068	5 53.51	4.52	0.64	2 0 57.87	15 58.67
60	9	. .	. .	. .	. .	31.5	. .	. .	2 2 14.43	−52.62	−0.86	V.	4	44.962	−14 21.52	− 4.53	−1.46	2 1 20.95	−25 24 27.51

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 149	Dec. 18, 1 0	64 32 30.3	30.9	35.3	24.7	28.7	21.9	28.63[a]	. .	. .	35.5	38.5	40.3	
	1 19	. .	. .	. .	. .	. .	. .	. .	30.148	40.5	35.1			
	1 39	. .	. .	. .	. .	. .	. .	. .	. .	. .	33.3			
	2 0	30.5	30.7	35.1	24.9	28.7	21.6	28.58	30.144	39.2	32.5	37.5	38.7	43.8

REMARKS.

(149) 34. One of the transits erroneous by 10^s; if T. VII is correct, T=$24^s.93$.

(149) 50. Either the transits over T.'s II and III or those over T.'s IV and V are erroneous by 10^s; in the latter case, T=$6^s.16$.

[a] Corr. for runs +0″.07.

ZONE 150. JANUARY 3. C. $D_\circ = -23° 17' 20''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	34.5	51.5	. .	. .	1 50 34.43	−64.86	−0.25	IV.	2	9.182	−51 51.64	− 2.56	−9.19	1 49 29.32	−24 9 23.39
2	9	. .	32.	49.	. .	21.3	38.5	. .	52 5.28	64.90	0.73	III.	3	30.019	29 58.75	2.65	7.00	50 59.65	23 47 28.40
3	9	. .	32.3	49.7	. .	22.	39.	. .	1 52 5.84	64.90	0.89	V.	3	37.956	21 40.71	2.65	6.18	1 51 0.05	39 9.54
4	8	24.5	. .	57.	. .	31.7	. .	. .	2 3 14.56	65.00	0.83	IV.	3	35.090	24 40.70	3.33	6.48	2 2 8.73	42 10.51
5	8	. .	51.5	8.5	. .	. .	59.	. .	7 25.40	65.06	0.99	IV.	4	42.375	17 3.95	3.59	5.73	6 19.35	34 33.27
6	9	. .	54.3?	10.5?	28.	. .	. .	. .	9 27.84	65.09	0.45	IV.	3	19.069	41 25.75	3.72	8.16	8 22.30	23 58 57.63
7	9	. .	. .	. .	. .	. .	22.5	39.5	2 9 48.73	−65.09	−0.33	VI.	2	14.274	−46 33.23	− 3.74	−8.64	2 8 43.31	−24 4 5.61

ZONE 151. JANUARY 4. P. $D_\circ = -27° 2' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	. .	. .	52.3	2 10 0.15	−66.20	−1.27	.	4	58.557	−10 34.98	− 4.84	−1.64	2 8 52.68	−27 13 21.46
2	7	19.	36.3	53.5	11.	28.3	45.5	2.7	13 10.90	66.24	1.27	IV.	4	53.60	5 19.22	5.11	0.84	12 3.39	8 5.17
3	7	. .	. .	. .	. .	. .	22.5	. .	14 47.68	66.26	1.29	.	1	6.13	54 55.09	5.24	7.30	13 40.13	57 47.63
4	6.7	57.5	14.5	32.	49.5	7.	24.3	41.3	17 49.44	66.30	1.28	IV.	3	22.53	37 48.73	5.49	5.02	16 41.86	40 39.24
5	8.9	. .	. .	52.7	9.	. .	. .	. .	20 9.58	66.33	1.28	IV.	2	14.28	46 32.04	5.69	6.17	19 1.97	49 23.90
6	9	. .	4.	21.5	. .	. .	. .	. .	21 38.93	66.35	1.27	III.	3	32.95	26 54.79	5.82	3.58	20 31 31	29 44.19
7	7	. .	. .	24.7	41.7	59.	. .	. .	22 41.88	66.36	1.26	IV.	4	55.255	3 35.38	5.93	0.61	21 34.26	6 21.92
8	7	. .	. .	. .	. .	1.	. .	. .	23 43.33	66.38	1.28	.	1	8.053	52 55.03	6.02	7.03	22 35.67	55 48.08
9	9	. .	. .	. .	. .	14.	. .	. .	24 56.63	66.39	1.27	.	3	37.29	22 22.69	6.13	3.01	23 48.97	25 11.83
10	6.7	7.3	24.5	42.	59.3	. .	34.3	51.5	26 59.39	66.41	1.27	IV.	3	23.11	37 12.29	6.33	4.94	25 51.71	40 3.56
11	9	. .	56.	13.5	31.	. .	. .	. .	29 30.91	66.45	1.27	IV.	3	37.275	22 23.70	6.56	3.01	28 23.19	25 13.27
12	9	. .	. .	. .	14.	. .	. .	. .	30 13.87	66.45	1.26	.	4	41.14	18 21.40	6.63	2.51	29 6.16	21 10.54
13	9	. .	. .	. .	54.5	. .	. .	. .	31 54.37	66.48	1.26	.	3	25.163	35 3.58	6.80	4.66	30 46.63	37 55.04
14	9	18.5	35.3	. .	10.	. .	. .	. .	47 10.16	66.66	1.24	IV.	4	41.983	17 28.36	8.41	2.39	46 2.26	20 19.16
15	7.8	28.	. .	3.	20.5	. .	55.	. .	53 20.30	66.73	1.25	IV.	3	31.063	28 53.37	9.11	3.85	52 12.32	31 46.33
16	8.9	56.	. .	31.	. .	. .	. .	. .	55 48.23	66.76	1.25	III.	3	34.387	25 24.87	9.39	3.51	54 40.22	28 17.77
17	8	49.	6.	24.	. .	58.5	. .	. .	2 57 41.13	66.79	1.24	V.	3	28.57	31 29.78	9.61	4.19	2 56 33.10	34 23.58
18	7	. .	. .	. .	54.7	. .	29.3	. .	3 3 54.62	66.86	1.23	IV.	4	44.718	14 36.76	10.37	2.02	3 2 46.53	17 29.15
19	9	. .	. .	. .	17.	. .	. .	. .	7 16.85	66.89	1.24	.	3	31.66	28 15.92	10.79	3.78	6 8.72	31 10.49
20	7	46.3	3.	20.7	38.	55.3	13.	30.5	10 38.11	66.94	1.23	IV.	3	22.163	38 11.76	11.21	5.07	9 29.94	41 8.04
21	6	. .	54.	11.7	29.	46.7	3.7	. .	15 29.10	66.99	1.22	IV.	4	52.773	6 11.03	11.85	0.94	14 20.89	9 3.82
22	8	. .	57.	14.5	. .	. .	. .	. .	17 32.00	67.02	1.24	III.	2	17.065	43 36.64	12.11	5.77	16 23.74	46 34.52
23	7	. .	. .	. .	. .	59.3	16.	. .	17 41.46	67.02	1.24	V.	2	13.465	47 23.59	12.14	5.26	16 33.20	50 20.99
24	8.9	. .	. .	. .	. .	16.3	. .	. .	18 58.80	67.03	1.23	.	3	22.85	37 28.54	12.31	4.98	17 50.54	40 25.83
25	8	. .	. .	. .	59.	. .	. .	. .	19 58.91	67.04	1.23	.	2	17.115	43 34.13	12.44	5.77	18 50.64	46 32.34
26	7	. .	. .	. .	. .	41.5	. .	. .	20 23.92	67.04	1.23	.	2	15.577	45 11.08	12.49	5.99	19 15.65	48 9.56
27	6	. .	. .	. .	11.	28.5	46.	. .	21 11.02	67.05	1.23	IV.	2	13.003	47 51.93	12.61	6.33	20 2.74	50 50.87
28	8.9	. .	. .	. .	. .	. .	. .	53.	21 0.79	67.05	1.22	.	3	36.51	23 11.08	12.58	3.12	19 52.52	26 6.78
29	9	. .	. .	. .	. .	. .	47.	. .	23 12.30	67.07	1.21	.	4	53.745	5 9.30	12.88	0.80	22 4.02	8 2.98
30	8	. .	15.	32.	49.3	. .	. .	. .	25 49.55	67.09	1.21	IV.	4	53.78	5 7.79	13.23	0.80	24 41.25	8 1.82
31	8	. .	. .	22.3	39.5	57.	. .	. .	30 39.63	67.15	1.21	IV.	4	45.027	14 17.29	13.88	1.98	29 31.27	17 13.15
32	8	1.	18.	35.5	52.7	. .	. .	. .	33 52.84	67.19	1.20	IV.	4	43.98	15 23.00	14.36	2.13	32 44.45	18 19.49
33	8	. .	. .	. .	. .	. .	. .	18.5	34 25.94	67.20	1.22	.	2	12.695	48 12.25	14.43	6.37	33 17.52	51 13.05
34	9	25.	. .	0.	. .	. .	. .	. .	37 17.18	67.22	1.20	III	4	43.71	15 40.15	14.84	2.17	36 8.76	18 37.16
35	9	. .	57.	14.3	31.7	. .	. .	. .	41 31.77	67.28	1.21	IV.	3	24.26	36 0.23	15.60	4.77	41 23.28	39 0.60
36	8.9	. .	. .	. .	. .	21.5	. .	. .	43 4.23	67.28	1.19	.	4	49.50	9 36.37	15.69	1.39	41 55.76	12 33.45
37	7.8	. .	. .	10.	27.	44.3	. .	. .	44 27.05	67.29	1.20	IV.	3	29.02	31 1.49	15.90	4.14	43 18.56	34 1.53
38	8.9	. .	. .	. .	. .	. .	27.	44.	3 51 52.08	−67.37	−1.19	VII.	4	50.867	− 8 9.43	−17.03	−1.20	3 50 43.52	−27 11 7.66

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Jan. 3,	0	. .	. .	. .	. .	. .	359 59 60.20	29.9876
Jan. 4,	0	. .	. .	. .	. .	. .	58.51	29.9930

REMARKS.

(151) 1. Micrometer reading assumed as 48r.557, not 58r.557.
(151) 37. Differs 2′ in declination from Arg. Z. 322, 94.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 150	Jan. 3,	1 50	72 39 63.6	66.5	65.9	58.8	61.3	57.9	62.33	30.144	45.	37.2	50.	45.7	47.2
		2 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	36.9			
		2 20	. .	. .	. .	. .	. .	. .	. .	30.130	43.5	37.			
Zone 151	Jan. 4,	2 10	76 24 61.0	63.7	65.3	54.8	59.0	53.5	59.55	30.212	46.	39.7	. .	47.5	46.5
		3 10	. .	. .	. .	. .	. .	. .	. .	30.236	44.8	37.8			
		4 0	. .	. .	. .	. .	. .	. .	. .	30.240	43.1	37.	. .	43.	

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
ZONE 151. JANUARY 4. P. $D_0 = -27° 2' 40''$—Continued.																			
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
39	8	. .	. .	. .	. .	48.5	. .	. .	3 53 31.12	−67.39	−1.20	.	3	35.25	−24 30.72	−17.28	−3.29	3 52 22.53	−27 27 31.29
40	8.9	. .	. .	. .	59.	. .	. .	. .	54 58.89	67.40	1.20	.	2	21.895	38 34.22	17.52	5.10	53 50.29	41 36.84
41	9	. .	. .	. .	52.	. .	. .	. .	55 51.91	67.40	1.20	.	2	16.695	44 0.41	17.66	5.82	54 43.31	47 3.89
42	9	. .	. .	. .	. .	. .	. .	0.	56 7.46	67.42	1.20	.	2	13.985	46 51.36	17.69	6.19	54 58.84	49 55.24
43	7	. .	. .	. .	40.5	58.	15.5	. .	3 57 40.50	67.43	1.20	IV.	1	9.66	51 14.65	17.93	6.79	3 56 31.87	54 19.37
44	8	7.5	24.3	42.	59.	. .	. .	. .	4 1 59.26	−67.46	−1.19	IV.	3	30.675	−29 17.65	−18.62	−3.91	4 0 50.61	−27 32 20.18
ZONE 152. JANUARY 4. P. $D_0 = -26° 25' 50''$.																			
1	8	. .	. .	. .	. .	. .	36.5	. .	6 35 2.03	−68.32	−0.65	.	4	46.047	−13 12.64	− 5.36	− 7.95	6 33 53.06	−26 39 15.92
2	7	10.5	27.7	45.	2.3	19.7	37.	. .	40 2.40	68.33	1.06	IV.	2	14.863	45 55.24	6.41	11.98	38 54.01	27 12 3.63
3	7.8	53.	10.	27.5	. .	. .	. .	. .	43 44.96	68.33	1.09	III.	2	14.025	46 47.28	7.21	12.09	42 35.54	12 56.58
4	7	. .	41.	58.5	. .	. .	. .	. .	45 15.86	68.34	1.07	III.	2	17.00	43 40.72	7.53	11.72	44 6.45	27 9 49.97
5	8	. .	. .	. .	41.	. .	. .	. .	45 40.85	68.34	0.95	.	3	28.795	31 15.54	7.62	10.16	44 31.56	26 57 23.32
6	8	. .	. .	. .	20.	. .	. .	. .	46 19.89	68.34	1.03	.	3	21.335	39 3.76	7.76	11.15	45 10.52	27 5 12.67
7	9	. .	. .	. .	. .	14.	. .	. .	46 56.77	68.34	0.78	.	4	42.333	17 6.33	7.89	8.42	45 47.65	26 43 13.26
8	7.8	. .	. .	51.	8.	. .	. .	59.5	48 7.92	68.34	0.83	IV.	4	39.27	20 18.82	8.15	8.80	46 58.75	46 25.77
9	9	. .	4.5	22.	. .	. .	. .	. .	50 39.26	68.34	0.98	III.	3	29.303	30 43.80	8.69	10.09	49 29.94	56 52.58
10	9	. .	58.7	16.	. .	. .	. .	. .	51 33.38	68.34	1.01	.	3	26.84	33 18.12	8.89	10.42	51 24.03	59 27.43
11	7.8	. .	. .	58.5	15.5	33.	. .	. .	53 15.62	68.34	1.02	IV.	3	28.33	31 44.97	9.26	10.22	52 6.26	57 54.45
12	9	. .	. .	. .	. .	. .	. .	34.7	53 42.84	68.34	0.72	.	4	54.183	4 41.43	9.36	6.87	52 33.78	30 47.66
13	9	. .	. .	36.	. .	. .	. .	. .	55 53.32	68.34	1.01	.	3	30.814	29 8.81	9.84	9.90	54 43.97	55 18.55
14	9	. .	. .	. .	. .	15.	. .	. .	55 57.79	68.35	0.84	.	4	45.65	13 38.01	9.85	7.99	54 48.60	39 45.85
15	9	. .	. .	. .	. .	52.	. .	. .	56 34.79	68.35	0.83	.	4	45.647	13 38.20	9.98	7.99	55 25.61	39 46.17
16	9	. .	. .	. .	5.5	. .	. .	. .	6 59 5.37	68.35	0.94	.	3	37.82	21 49.25	10.54	8.99	57 56.08	47 58.78
17	8	. .	. .	50.	7.	. .	. .	. .	7 0 7.10	68.35	1.04	IV.	3	32.567	27 19.07	10.76	9.67	6 58 57.71	26 53 29.50
18	8	35.5	. .	10.	. .	. .	. .	. .	7 5 27.58	−68.35	−1.35	III.	2	10.173	−48 46.94	−11.93	−12.35	7 4 17.88	−27 15 1.20
ZONE 153. JANUARY 18. S. $D_0 = -25° 47' 50''$.																			
1	8	. .	. .	13.	. .	. .	. .	. .	4 21 30.33	−76.65	−1.49	III.	2	11.508	−49 25.24	− 0.92	−12.32	4 20 12.19	−26 37 28.48
2	7	. .	. .	. .	10.	. .	. .	. .	23 9.86	76.67	1.31	IV.	3	28.280	31 48.10	1.20	10.24	21 51.88	19 49.54
3	7	. .	28.	. .	. .	. .	. .	. .	26 2.52	76.69	1.16	II.	4	42.592	16 50.39	1.67	8.44	24 44.67	4 50.50
4	8	. .	. .	. .	. .	. .	. .	13.	26 21.31	76.69	1.32	VII.	3	28.148	31 55.76	1.75	10.26	25 3.30	19 57.77
5	9	. .	. .	53.	. .	. .	. .	. .	30 10.22	76.73	1.30	III.	3	30.892	29 3.91	2.39	9.90	28 52.19	17 6.20
6	9	. .	. .	16.	. .	50.	. .	. .	33 32.96	76.76	1.45	III.	2	18.250	42 22.45	2.92	11.45	32 14.75	30 26.82
7	10	. .	. .	. .	. .	3.	. .	36.5	35 45.38	76.77	1.18	V.	4	43.338	16 3.25	3.29	8.35	34 27.43	4 4.89
8	8	20.	. .	54.	. .	. .	. .	. .	39 11.34	76.81	1.27	III.	3	35.808	23 55.44	3.88	9.27	37 53.26	11 58.59
9	8	. .	. .	11.5	. .	. .	. .	20.	40 28.53	76.81	1.35	III.	3	29.078	30 57.85	4.11	10.11	39 10.37	19 2.07
10	8	. .	. .	. .	. .	18.	. .	52.	41 0.64	76.82	1.19	V.	2	44.412	15 2.04	4.19	8.22	39 42.63	3 4.45
11	9	. .	. .	48.	. .	. .	. .	. .	46 5.25	76.87	1.41	III.	3	25.182	35 2.33	5.05	10.60	44 46.97	23 8.00
12	8	. .	. .	34.	. .	8.	. .	. .	47 51.10	76.88	1.19	III.	4	45.780	13 30.16	5.37	8.04	46 33.03	1 33.57
13	7	. .	. .	23.	. .	57.	. .	. .	50 40.12	76.90	1.17	III.	5	48.818	10 19.45	5.90	7.66	49 22.05	58 23.01
14	6	. .	. .	. .	40.	. .	. .	. .	4 57 22.67	76.95	1.51	IV.	2	19.165	41 25.63	7.15	11.38	56 4.21	29 34.16
15	6	. .	. .	12.	. .	. .	. .	. .	5 0 29.24	76.97	1.43	III.	3	26.802	33 20.51	7.67	10.40	4 59 10.84	21 28.58
16	7	. .	23.	. .	. .	14.	. .	. .	5 57.20	77.01	1.29	II.	4	41.375	18 6.89	8.68	8.60	5 4 38.90	6 14.17
17	10	. .	. .	34.	. .	. .	. .	. .	5 7 51.22	−77.03	−1.41	IV.	3	30.758	−29 12.38	− 8.82	− 9.91	5 6 32.78	−26 17 21.11

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Jan. 18, 0	. .	. .	. .	. .	. .	359 59 57.07	29.9820

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 152	Jan. 4, 6 55	75 47 {35.3 33.7	40.4 40.	40.6 41.5	31.6 32.6	36.0 36.8	27.7 27.7	35.32	30.234	42.	33.2	. .	40.5	
	7 5	. .	. .	. .	. .	. .	. .	. .	30.228	41.3	33.2			
Zone 153	Jan. 18, 4 21	75 9 60.	68.0	67.4	54.2	64.9	51.9	61.07	30.380	39.5	28.8			
	5 36	. .	. .	. .	. .	. .	. .	. .	30.386	39.0	27.5			
	5 38	. .	. .	. .	. .	. .	. .	. .	30.398	38.2	28.2			
	6 38	. .	. .	. .	. .	. .	. .	. .	30.404	37.8	27.2			

REMARKS.

(152) 10. Minutes assumed as 52, not 51.
(152) 18. Micrometer reading assumed as 12r.038.
(153) 4. Right ascension 9s discordant from Arg. Z. 325, 129.
(153) 8. Minutes assumed as 38, not 39.
(153) 14. Transit over T. V assumed to have been recorded as over T. IV.

ZONE 153. JANUARY 18. S. $D_o = -25° 47' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	9	. .	. .	. .	. .	. .	55.	. .	5 8 20.74	−77.03	−1.35	VI.	3	36.352	−23 21.37	− 9.12	− 9.22	5 7 2.36	−26 11 29.71
19	7	. .	. .	. .	. .	. .	18.	. .	9 43.72	77.04	1.48	VI.	2	25.602	34 42.68	9.37	10.55	8 25.20	22 52.60
20	7	. .	25.	. .	59.5	. .	. .	. .	14 59.45	77.08	1.31	IV.	4	42.330	17 6.77	10.37	8.48	13 41.06	5 15.62
21	10	. .	44.5	. .	. .	. .	. .	. .	21 19.04	77.12	1.44	II.	3	31.545	28 22.88	11.56	9.82	20 0.48	16 34.26
22	10	. .	43.	. .	17.	. .	. .	. .	23 17.20	74.13	1.47	II.	3	30.179	29 48.59	11.95	9.98	21 58.60	17 0.52
23	9	. .	. .	13.	. .	. .	. .	. .	25 12.85	77.14	1.47	III.	3	30.330	29 39.42	12.37	9.96	23 54.24	17 51.75
24	8	. .	33.	. .	. .	. .	. .	. .	28 7.56	77.17	1.52	II.	3	26.024	34 9.18	12.87	10.50	26 48.87	22 22.55
25	7	43.	. .	19.	. .	. .	. .	. .	5 36 36.45	−77.21	−1.57	III.	3	23.039	−37 16.62	−14.55	−10.86	5 35 17.67	−26 25 32.03

ZONE 154. JANUARY 18. S. $D_o = -25° 47' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	9.	. .	. .	. .	. .	34.	5 38 42.95	−76.23	−1.08	II.	4	35.068	−24 42.58	−14.95	− 9.37	5 37 25.64	−26 12 56.90
2	9	. .	. .	. .	. .	14.5	. .	. .	39 57.32	76.24	1.12	V.	4	35.030	24 44.46	15.21	9.38	38 39.96	12 59.05
3	9	. .	. .	45.4	. .	. .	. .	. .	43 2.62	76.26	1.00	III.	3	29.395	30 38.09	15.83	10.10	41 45.36	18 54.02
4	8	. .	. .	36.	. .	. .	27.5	. .	44 53.24	76.26	0.90	III.	3	24.810	35 25.48	16.21	10.66	43 36.08	23 42.35
5	8	49.	. .	23.	40.2	. .	. .	. .	47 40.26	76.28	1.13	IV.	3	28.519	31 33.04	16.76	10.20	46 22.85	19 50.00
6	10	59.	. .	33.	50.	. .	. .	. .	51 50.34	76.30	0.79	III.	2	16.150	44 34.08	17.62	11.72	50 33.25	32 53.42
7	10	. .	. .	. .	35.	. .	. .	. .	5 53 34.86	76.31	1.53	IV.	3	34.735	25 2.90	17.96	9.41	5 52 17.02	13 20.27
8	7	39.	. .	. .	30.5	. .	. .	. .	6 6 30.53	76.37	1.43	V.	2	21.715	38 46.07	20.62	11.05	6 5 12.73	27 7.74
9	9	42.	. .	. .	34.	. .	. .	. .	7 33.62	76.37	2.16	IV.	4	40.490	19 2.25	20.84	8.69	6 15.09	7 21.78
10	10	. .	. .	. .	. .	0.	. .	. .	10 51.60	76.39	2.17	V.	4	38.338	21 17.06	21.50	8.97	8 33.04	9 37.53
11	10	. .	10.	. .	. .	. .	. .	. .	12 44.51	76.40	2.62	II.	5	49.142	9 58.55	21.90	7.63	11 25.49	58 18.08
12	9	. .	58.	. .	. .	. .	. .	. .	16 32.58	76.41	1.80	II.	3	23.260	37 2.69	22.71	10.84	15 14.37	25 26.24
13	8	. .	. .	. .	. .	32.	. .	. .	17 14.79	76.41	2.07	.	3	30.325	29 39.74	22.86	9.96	15 56.31	18 2.56
14	8	. .	. .	42.	. .	. .	. .	. .	19 59.22	76.42	2.14	.	3	30.076	29 55.23	23.44	9.99	18 40.66	18 18.66
15	8	. .	. .	. .	. .	. .	6.	. .	19 31.73	76.42	2.00	.	3	26.323	33 50.62	23.33	10.47	18 13.31	22 14.42
16	9	. .	. .	. .	48.	. .	. .	. .	21 47.88	76.42	2.80	.	4	46.398	12 51.42	23.82	7.96	20 28.66	1 13.20
17	9	. .	. .	. .	. .	. .	4.	. .	22 29.71	76.42	2.88	.	5	48.098	11 4.02	23.96	7.72	21 10.41	59 25.70
18	9	. .	. .	. .	. .	. .	1.	. .	24 26.72	76.43	2.86	.	4	46.180	13 4.41	24.37	7.98	23 7.43	1 26.76
19	8	. .	. .	. .	4.	. .	39.	. .	26 4.30	76.44	2.52	.	3	34.838	24 56.38	24.71	9.39	24 45.34	13 20.48
20	7	. .	21.	. .	55.	. .	. .	. .	28 55.20	76.45	2.59	IV.	3	35.055	24 42.89	25.32	9.38	27 36.16	13 7.59
21	7	. .	0.1	. .	35.5	. .	. .	. .	31 35.48	76.46	2.26	IV.	2	23.998	36 22.36	25.88	10.77	30 16.76	24 49.01
22	8	. .	54.	. .	. .	. .	. .	. .	34 28.59	76.47	2.29	.	2	22.426	37 59.85	26.50	10.96	33 9.83	26 27.32
23	7	. .	. .	. .	44.	. .	18.	. .	35 43.80	76.48	2.89	.	3	37.660	21 59.42	26.76	9.02	34 24.43	10 25.20
24	8	. .	0.1	. .	35.	. .	. .	. .	38 35.20	76.49	2.66	.	3	29.072	30 58.29	27.37	10.14	37 16.05	19 25.80
25	7	. .	. .	35.5	. .	. .	. .	. .	46 52.74	76.50	2.80	III.	3	26.065	34 6.80	29.14	10.50	45 33.44	22 36.44
26	7	. .	. .	. .	. .	22.	. .	. .	47 4.72	76.50	2.74	V.	3	24.398	35 51.57	29.18	10.72	45 45.48	24 21.47
27	9	15.	. .	49.5	. .	. .	. .	. .	53 6.58	76.52	3.27	III.	3	33.512	26 19.71	30.46	9.54	51 46.79	14 49.71
28	8	. .	. .	58.	. .	. .	49.5	. .	54 15.24	76.52	3.26	III.	3	32.050	27 51.32	30.71	9.76	52 55.46	16 21.79
29	8	. .	. .	. .	. .	54.	. .	. .	55 36.77	76.53	3.16	V.	3	28.202	31 52.87	31.00	10.25	54 17.08	20 24.12
30	7	. .	. .	. .	12.	. .	. .	. .	57 11.90	76.53	2.92	IV.	2	20.239	40 18.33	31.34	11.23	55 52.45	28 50.90
31	6	. .	39.5	. .	13.	. .	. .	. .	6 59 13.48	76.53	3.10	IV.	3	23.265	37 2.69	31.77	10.86	6 57 53.85	25 35.32
32	4	. .	. .	19.	. .	53.	. .	. .	7 3 36.06	−76.53	−3.81	III.	4	38.632	−20 58.93	−32.71	− 8.93	7 2 15.72	−26 9 30.57

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(153) 23. Transit over T. IV assumed to have been recorded as over T. III.

(154) 3. Differs 38s.5 in right ascension from Arg. Z. 323, 94, and Mer. Circle, 1849, February 16.

(154) 10. Transit over T. I assumed as recorded over T. V,

(154) 31. Differs 8s in right ascension from Arg. Z. 287, 51, and 1848, January 22, and Transit Inst., 1848, January 20.

ZONE 155. JANUARY 19. C. $D_0 = -23° 17' 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	32.	48.9	5.5	22.7	39.6	. .	2 2 5.78	+ 2.07	+0.98	IV.	3	35.149	−24 37.06	− 2.77	− 2.11	2 2 8.83	−23 42 11.94
2	8	26.	42.6	59.5	16.2	32.9	49.6	. .	6 16.23	2.02	1.02	IV.	4	42.405	17 2.06	3.04	1.36	6 19.27	34 36.46
3	9	. .	45.5	2.8	19.5	. .	52.5?	. .	8 19 36	1.99	0.91	IV.	2	19.249	41 20.42	3.16	3.75	8 22.26	23 58 57.33
4	9	. .	6.	23.6	. .	. .	13.5	30.5	8 39.98	1.99	0.88	V.	2	14.338	46 28.91	3.18	4.28	8 42.85	24 4 6.37
5	9	. .	. .	4.6	21.5	. .	. .	. .	19 21.46	1.88	1.02	III.	4	41.319	18 10.34	3.89	1.47	19 24.36	23 35 45.70
6	9	. .	. .	. .	52.4	9.5	. .	42.4	19 52.26	1.87	1.00	IV.	4	38.295	21 20.01	3.95	1.79	19 55.13	38 55.75
7	8	. .	. .	54.	10.8	27.6	. .	. .	22 10.75	1.85	0.94	V.	3	25.166	35 3.33	4.10	3.14	22 13.54	52 40.57
8	8.9	. .	35.1	42.	8.3	25.7	42.5	. .	25 8.76	1.82	0.97	IV.	3	32.469	27 25.28	4.31	2.39	25 11.55	45 1.98
9	9	. .	. .	. .	. .	. .	. .	26.2?	25 35.40	1.81	0.90	IV.	2	18.639	41 58.56	4.34	3.82	25 38.11	59 36.72
10	9	. .	. .	31.6	48.7	5.8	22.	. .	27 48.60	1.79	0.96	IV.	3	29.483	30 32.56	4.51	2.71	27 51.35	23 48 9.78
11	9	. .	. .	. .	10.8	27.8	44.6	1.6	29 10.74	1.77	0.85	V.	2	8.039	53 3.75	4.61	4.96	29 13.36	24 10 43.32
12	7.8	. .	. .	. .	54.8	11.2	28.	45.2	30 54.52	1.75	1.01	V.	4	38.488	21 7.64	4.74	1.77	30 57.28	23 38 44.15
13	9	. .	8.8	25.5	. .	. .	. .	. .	41 42.52	1.64	0.99	III.	3	34.269	25 32.20	5.64	2.21	41 45.15	43 10.05
14	7.8	13.5	29.8	47.1	3.5	20.5	37.4	53.6	44 3.63	1.61	1.01	IV.	3	38.278	21 20.75	5.85	1.79	44 6.25	38 58.39
15	9	. .	. .	. .	. .	. .	38.2	55.	45 4.52	1.60	0.97	VI.	3	29.945	30 3.26	5.95	2.64	45 7.09	47 41.85
16	9	. .	. .	43.2	59.3	16.6	. .	. .	46 59.67	1.58	0.98	IV.	3	31.952	27 57.46	6.13	2.44	47 2.23	45 36.03
17	9	. .	. .	. .	46.	3.2	19.7	. .	47 46.13	1.57	1.04	V.	4	43.245	16 9.08	6.20	1.28	47 48.74	33 46.56
18	8.9	. .	. .	. .	11.5	28.5	. .	. .	49 11.50	1.56	0.96	V.	3	28.008	32 4.91	6.33	2.86	49 14.02	49 44.10
19	8.9	. .	. .	. .	. .	23.7	40.7	. .	50 7.01	1.55	1.03	V.	4	41.497	17 58.80	6.41	1.45	50 9.59	23 35 36.66
20	6	. .	. .	. .	22.5	. .	56.6	. .	51 22.68	1.54	0.85	V.	2	6.175	55 0.60	6.54	5.16	51 25.07	24 12 42.30
21	9	25.5	. .	. .	15.7	32.8	. .	. .	54 15.79	1.51	1.04	V.	4	44.705	14 37.26	6.83	1.13	54 18.34	23 32 15.22
22	5	. .	10.5	27.5	43.7	1.5	. .	. .	2 54 44.25	1.51	0.85	IV.	2	6.015	55 10.07	6.87	5.18	2 54 46.61	24 12 52.12
23	7	. .	6.8	24.2	. .	57.5	14.5	. .	3 10 40.79	1.34	0.88	V.	2	13.116	47 45.41	8.58	4.45	3 10 43.01	24 5 28.44
24	9	. .	. .	48.5	5.	. .	. .	. .	14 5.14	1.30	0.95	III.	3	26.556	33 36.12	8.98	3.00	14 7.39	23 51 18.10
25	6.7	. .	. .	. .	. .	5.3	23.	39.5	14 48.66	1.29	0.86	V.	2	8.284	52 48.52	9.06	4.94	14 50.81	24 10 32.52
26	7.8	9.5	26.5	43.5	0.1	. .	. .	. .	23 0.35	1.21	0.91	III.	2	18.582	42 1.56	10.06	3.83	23 2.47	23 59 45.45
27	9	12.5	28.8	45.7	3.	. .	. .	. .	27 2.73	1.16	1.07	III.	4	49.371	9 44.99	10.57	0.64	27 4.96	27 26.20
28	9	. .	55.5	. .	. .	. .	2.8	. .	28 29.28	1.15	1.01	IV.	3	38.112	21 31.06	10.76	1.78	28 31.44	23 39 13.60
29	9	. .	. .	. .	. .	. .	. .	18.6	29 27.77	1.14	0.91	VII.	2	17.483	43 12.94	10.88	3.97	29 29.82	24 0 57.79
30	9	39.5	55.8	13.4	29.5	. .	. .	. .	35 29.98	1.09	0.88	III.	2	11.087	49 51.58	11.70	4.65	35 31.95	24 7 37.93
31	8.9	. .	. .	. .	. .	. .	49.5	6.2	36 15.74	1.09	1.09	IV.	4	53.218	5 43.26	11.80	0.24	36 17.92	23 23.25.30
32	9	. .	. .	. .	21.3	38.5	. .	12.	38 21.37	1.07	0.96	V.	3	26.711	33 26.28	12.09	2.99	38 23.40	51 11.36
33	4	. .	. .	5.2?	21.5	38.7	55.4	12.2	40 21.76	1.05	1.01	IV.	3	35.745	23 59.53	12.36	2.05	40 23.82	41 43.94
34	9	. .	. .	. .	. .	. .	5.2	22.2	41 31.62	1.04	1.02	VI.	3	37.659	21 59.23	12.53	1.86	41 33.68	39 43.62
35	9	. .	37.4	55.	11.6	. .	. .	. .	45 11.58	1.01	1.10	III.	4	53.610	5 18.72	13.07	0.20	45 13.69	23 1.99
36	9.10	. .	. .	. .	18.	. .	. .	. .	46 17.90	1.00	1.09	IV.	4	53.145	5 47.80	13.23	0.25	46 19.99	23 31.28
37	8	. .	. .	9.2	25.5	43.	59.5	. .	47 25.92	0.99	1.04	IV.	3	42.861	16 32.88	13.39	1.30	47 27.95	34 17.57
38	9	. .	. .	10.5	27.5	. .	. .	. .	49 27.43	0.97	0.92	III.	3	18.882	41 37.30	13.69	3.83	49 29.32	59 24.82
39	9	. .	. .	. .	. .	59.2	16.8	. .	49 42.76	0.96	0.96	V.	3	26.108	34 4.24	13.72	3.05	49 44.68	51 51.01
40	9	. .	. .	11.8	28.2	. .	. .	. .	52 28.42	0.94	1.04	III.	4	42.724	16 42.04	14.15	1.32	52 30.40	34 27.51
41	9	. .	. .	. .	26.5	. .	. .	17.	53 26.40	0.93	1.03	V.	4	40.992	18 30.30	14.30	1.49	53 28.36	36 16.09
42	9	. .	. .	. .	48.5	. .	. .	39.5	53 48.64	0.92	1.04	V.	4	41.374	18 6.52	14.36	1.45	53 50.60	35 52.33
43	9	. .	12.2	29.5	. .	. .	19.5	35.	59 45.68	0.87	0.95	II.	3	24.752	35 28.98	15.28	3.18	59 47.50	53 17.44
44	9	. .	. .	. .	. .	. .	18.2	36.5	3 59 45.27	+ 0.87	+1.01	VI.	3	36.172	−23 32.61	−15.28	− 2.00	3 59 47.15	−23 41 19.89

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Jan. 19, 0	. .	. .	. .	. .	. .	359 59 56.59	29.9858

REMARKS.

(155) 17. Differs 17s in right ascension from Arg. Z. 313, 53; probably recorded over wrong threads.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 155	Jan. 19, 2 0	72 39 59.7	70.	67.	57.1	64.2	53.9	61.98	30.540	34.	28.2	36.3	35.5	40.
	2 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.2			
	3 0	59.7	69.5	68.1	56.6	64.2	52.9	61.83	30.534	33.7	26.5			
	3 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	26.3			
	3 20	59.6	69.2	68.2	56.2	66.2	52.5	62.02	30.532	33.	25.9	. .	. .	33.
	0 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	25.4			
	0 0	. .	. .	. .	. .	. .	. .	. .	30.526	32.5	24.4	31.	32.4	

Reading of micrometer E assumed as 63″.2. [Observing book has 66s.2]

ZONE 156. JANUARY 20. S. $D_0 = -23° 17' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	56.	. .	30.	. .	. .	. .	. .	4 47 46.66	+ 1.62	−0.79	.	3	32.750	−27 7.34	− 1.85	− 9.74	4 47 47.49	−23 44 58.93
2	8	. .	. .	. .	. .	46.	. .	. .	48 12.39	1.61	0.79	.	3	32.668	27 12.60	1.99	9.75	48 13.21	45 4.34
3	9	. .	. .	. .	. .	54.	. .	. .	49 20.39	1.60	0.97	.	4	47.660	11 31.83	2.18	8.15	49 21.02	29 22.16
4	8	. .	. .	. .	. .	. .	. .	59.	50 8.42	1.60	0.94	.	4	45.405	13 52.56	2.27	8.39	50 9.08	31 43.22
5	7	11.5	28.	45.	. .	. .	. .	. .	55 1.97	1.57	0.68	.	2	22.398	38 2.35	3.13	10.78	55 2.86	23 55 56.26
6	9	. .	37.	. .	. .	. .	. .	. .	56 10.90	1.57	0.64	.	1	18.320	42 12.17	3.34	11.22	56 11.83	24 0 6.73
7	9	57.5	. .	. .	. .	. .	. .	. .	58 47.85	1.54	0.88	.	3	38.095	21 31.50	3.80	9.14	58 48.51	23 39 24.44
8	9	. .	. .	. .	. .	29.	. .	. .	4 59 12.10	1.53	0.75	.	2	26.810	33 26.40	3.86	10.32	4 59 12.88	51 20.58
9	10	. .	. .	. .	. .	. .	21.	. .	5 0 47.40	1.50	0.94	.	3	43.024	16 22.52	4.15	8.61	5 0 47.99	34 15.28
10	9	46.	. .	20.	. .	. .	. .	. .	4 36.66	1.50	0.80	.	3	32.025	27 52.89	4.84	9.78	4 37.36	23 45 47.51
11	.	. .	17.5	. .	. .	. .	. .	. .	6 51.45	1.49	0.56	.	1	10.142	50 44.93	5.24	12.12	6 52.38	24 8 42.29
12	9	2.5	. .	. .	. .	. .	. .	. .	9 52.81	1.47	0.94	.	4	42.630	16 47.88	5.79	8.66	9 53.34	23 34 42.33
13	9	. .	9.	. .	. .	. .	. .	. .	11 42.83	1.46	0.94	.	4	41.854	17 36.58	6.10	8.73	11 43.35	35 31.41
14	9	. .	. .	26.	. .	. .	. .	. .	15 42.95	1.44	0.95	.	4	42.430	17 0.68	6.84	8.68	15 43.44	34 56.20
15	9	. .	. .	. .	. .	. .	58.	. .	16 24.37	1.43	1.08	.	5	52.462	6 29.79	6.98	7.65	16 24.72	24 24.42
16	9	55.	. .	. .	. .	. .	. .	. .	20 45.23	1.40	1.03	.	4	48.246	10 55.54	7.78	8.08	20 45.60	28 51.40
17	8	. .	. .	47.	. .	. .	. .	. .	24 3.93	1.38	0.92	.	4	38.962	20 38.08	8.39	9.05	24 4.39	38 35.52
18	8	. .	. .	. .	. .	17.	. .	. .	25 0.23	1.37	0.99	.	5	44.755	14 34.12	8.58	8.14	25 0.61	32 31.14
19	7	. .	. .	. .	. .	. .	24.	. .	25 50.40	1.37	0.99	.	5	44.645	14 40.72	8.74	8.45	25 50.78	32 37.91
20	8	. .	. .	59.5	. .	. .	. .	. .	28 16.44	1.36	0.94	.	4	39.838	19 43.11	9.19	8.95	28 16.86	37 41.25
21	9	. .	. .	. .	. .	. .	. .	20.5	28 29.92	1.36	0.99	.	5	44.010	15 20.00	9.23	8.53	28 30.29	33 17.76
22	9	. .	. .	. .	. .	. .	19.5	. .	30 45.90	1.35	0.74	.	3	22.360	37 59.28	9.65	10.79	30 46.51	55 59.72
23	6	2.5	. .	35.8	. .	. .	. .	. .	33 52.82	1.33	0.83	.	3	29.708	30 18.26	10.25	10.04	33 53.32	48 18.55
24	8	. .	. .	12.5	. .	. .	. .	. .	36 29.41	1.32	0.77	.	3	24.221	36 2.60	10.75	10.61	36 29.96	54 3.96
25	9	. .	. .	46.5	. .	. .	. .	. .	38 3.39	1.31	0.80	.	3	27.428	32 41.48	11.04	10.30	38 3.90	50 42.82
26	8	. .	. .	. .	. .	25.	. .	. .	39 8.07	1.31	0.78	.	3	24.390	35 52.07	11.25	10.64	39 8.60	53 53.96
27	7	. .	. .	. .	. .	. .	34.	. .	39 0.43	1.30	0.90	.	4	35.421	24 19.73	11.23	9.40	39 0.83	42 20.36
28	8	48.	. .	31.5	. .	. .	. .	. .	42 48.48	1.29	0.79	.	3	25.430	34 46.82	11.96	10.52	42 48.98	52 49.30
29	9	. .	8.8	. .	. .	. .	. .	. .	48 42.70	1.26	0.74	.	2	19.742	40 48.00	13.10	11.09	48 43.22	23 58 52.19
30	8	. .	33.5	. .	. .	. .	. .	. .	50 7.44	1.25	0.64	.	1	12.105	48 41.79	13.38	11.90	50 8.05	24 6 47.07
31	9	. .	. .	. .	56.5	. .	. .	. .	51 56.36	1.25	0.85	.	3	29.430	30 35.95	13.73	10.08	51 56.76	23 48 39.76
32	8	. .	. .	. .	20.5	. .	. .	. .	53 20.37	1.24	0.92	.	3	34.936	24 50.23	14.02	9.46	53 20.69	42 53.71
33	8	. .	. .	. .	55.5	. .	. .	. .	54 55.39	1.23	0.80	.	2	24.288	36 4.37	14.32	10.61	54 55.82	54 9.30
34	.	. .	. .	. .	. .	. .	59.	. .	5 56 25.44	1.23	0.84	.	3	27.706	32 23.66	14.62	10.26	5 56 25.83	50 28.54
35	7	. .	51.	. .	. .	. .	. .	. .	6 0 24.82	1.21	1.06	.	4	45.682	13 36.38	15.41	8.30	6 0 24.97	31 40.09
36	8	. .	. .	. .	. .	12.	. .	. .	0 55.24	1.21	1.08	.	4	47.410	11 47.66	15.51	8.11	0 55.37	29 51.28
37	8	. .	. .	. .	35.	. .	. .	. .	2 34.87	1.20	0.90	.	3	32.628	27 15.18	15.84	9.71	2 35.17	45 20.73
38	7	28.	. .	2.	. .	. .	. .	. .	5 18.66	1.19	0.91	.	3	32.825	27 2.63	16.39	9.69	5 18.94	45 8.71
39	8	. .	. .	59.5	. .	. .	. .	. .	6 16.50	1.18	1.13	.	5	50.831	8 13.07	16.58	7.79	6 16.55	26 17.44
40	8	. .	. .	. .	. .	. .	. .	19.5	6 28.92	1.18	1.06	.	4	44.625	14 42.03	16.63	8.45	6 29.04	32 47.11
41	6	. .	. .	. .	. .	. .	. .	24.	7 33.38	1.18	0.86	.	3	28.551	31 30.53	16.84	10.16	7 33.70	23 49 37.53
42	6	. .	27.	. .	. .	. .	. .	. .	10 0.91	1.17	0.75	.	2	17.488	43 9.75	17.33	11.37	11 1.33	24 1 18.45
43	8	. .	. .	. .	. .	. .	36.	. .	10 2.38	1.17	1.11	.	4	48.698	10 26.22	17.33	8.02	10 2.44	23 28 31.57
44	7	. .	. .	32.	. .	. .	. .	. .	12 49.00	1.16	1.11	.	4	48.770	10 22.46	17.89	8.02	12 49.05	28 28.37
45	7	. .	. .	33.	. .	. .	. .	. .	13 49.91	1.15	0.95	.	3	34.882	24 53.56	18.09	9.48	13 50.11	43 1.13
46	7	. .	. .	. .	. .	38.	55.	. .	14 21.31	1.15	1.05	V.	4	43.244	16 9.14	18.21	8.59	14 21.41	34 15.94
47	7	. .	. .	. .	10.	. .	. .	. .	16 9.88	1.14	1.08	.	4	46.172	13 5.55	18.58	8.29	16 9.94	31 12.42
48	9	. .	57.	. .	. .	48.	. .	. .	21 31.00	1.13	0.97	.	3	35.695	24 2.61	19.65	9.38	21 31.16	42 11.64
49	8	. .	. .	. .	12.	. .	. .	. .	6 23 11.88	+ 1.12	−0.84	.	3	25.265	−34 57.24	−20.00	−10.52	6 23 12.16	−23 53 7.76

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Jan. 20,	0	. .	. .	. .	. .	. .	359 59 57.11	29.9845

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 156	Jan. 20,	4 46	72 39 60.0	68.5	67.5	53.0	67.5	51.0	61.25	30.340	37.7	29.8			
		5 39	. .	. .	. .	. .	. .	. .	. .	30.314	36.5	29.0			
		6 24	. .	. .	. .	. .	. .	. .	. .	30.306	36.	29.			
		6 26	. .	. .	. .	. .	. .	. .	. .	30.302	35.5	28.7			
		7 20	. .	. .	. .	. .	. .	. .	. .	30.286	35.	28.			
		7 21	. .	. .	. .	. .	. .	. .	. .	30.286	35.	28.			
		8 6	. .	. .	. .	. .	. .	. .	. .	30.280	35.	28.			
		8 48	. .	. .	. .	. .	. .	. .	. .	30.274	34.5	27.8			

REMARKS.

(156) 2. Transit over T. VI assumed to have been recorded as over T. V.

(156) 3. Transit over T. VI assumed to have been recorded as over T. V.

(156) 18. Right ascension differs $16^s.5$ from Arg. Z. 274, 40; probably recorded over wrong thread.

(156) 27. Right ascension differs $2^s.5$ and declination 41″ from Arg. Z. 274, 62.

(156) 28. Time of transit over T. I assumed as 58^s instead of 48^s.

(156) 42. Minutes assumed as 10 instead of 11.

ZONE 156. JANUARY 20. S. $D_0 = -23° 17' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	.	. .	. .	. .	. .	. .	46.	. .	6 24 12.34	+ 1.12	−0.73	.	2	15.295	−44 26.53	−20.21	−11.58	6 24 12.83	−24 2 38.32
51	8	. .	. .	. .	. .	. .	. .	14.	25 23.42	1.11	1.11	.	4	46.792	17 39.07	20.45	8.22	25 23.42	23 35 47.74
52	9	. .	. .	. .	. .	26.	. .	. .	28 9.15	1.11	0.93	.	3	32.370	27 31.43	21.02	9.74	28 9.33	45 42.19
53	6	. .	25.	. .	. .	. .	32.	. .	48 58.64	1.06	0.98	II.	3	33.450	26 23.47	25.31	9.62	48 58.72	44 38.40
54	7	58.	. .	31.	. .	. .	. .	. .	50 48.12	1.06	1.11	III.	4	44.202	15 9.46	25.68	8.48	50 48.07	33 23.62
55	5	. .	47.	. .	. .	. .	. .	. .	52 20.83	1.06	1.03	.	3	37.062	22 36.69	25.99	9.22	52 20.86	40 51.90
56	7	58.5	. .	. .	. .	. .	. .	. .	53 48.87	1.06	1.03	.	3	37.042	22 37.63	26.28	9.23	53 48.90	40 53.14
57	8	. .	. .	. .	21.	. .	. .	. .	54 20.88	1.05	1.06	.	3	38.940	20 38.96	26.39	9.04	54 20.87	38 54.39
58	3	55.	. .	29.	. .	. .	. .	. .	56 45.64	1.05	1.08	.	4	40.742	18 46.44	26.92	8.83	56 45.61	23 37 2.19
59	7	. .	. .	. .	. .	. .	. .	38.	6 56 47.18	1.05	0.81	.	2	17.918	42 40.26	26.93	11.32	6 56 47.42	24 0 58.51
60	4	16.	. .	50.	. .	. .	. .	. .	7 1 6.63	1.04	1.09	III.	4	41.282	18 12.67	27.82	8.78	7 1 6.68	23 36 29.27
61	7	. .	38.	. .	. .	. .	. .	. .	2 11.85	1.04	0.93	.	3	27.892	32 11.93	28.05	10.23	2 11.96	50 30.21
62	6	. .	. .	. .	51.	. .	. .	. .	3 50.86	1.04	0.96	.	3	29.925	30 4.64	28.37	10.00	3 50.94	48 23.01
63	9	. .	. .	. .	. .	. .	. .	17.5	4 26.83	1.04	0.91	.	3	26.025	34 8.93	28.50	10.43	4 26.96	52 27.86
64	7	58.	. .	. .	. .	. .	. .	. .	6 48.65	1.04	0.85	.	2	20.185	40 19.52	29.00	11.06	6 48.84	58 39.58
65	8	. .	. .	. .	. .	15.	. .	. .	6 58.04	1.04	0.87	.	2	22.488	37 57.71	29.05	10.81	6 58.21	56 17.57
66	8	. .	41.	. .	. .	. .	. .	. .	9 14.82	1.04	1.21	.	4	50.615	8 26.82	29.51	7.79	9 14.65	26 44.12
67	6	. .	. .	. .	. .	. .	3.	. .	9 29.38	1.04	1.20	.	4	48.720	10 24.84	29.56	7.98	9 29.22	28 42.38
68	7	. .	. .	. .	. .	. .	. .	9.	10 18.42	1.03	1.15	.	4	43.960	15 23.13	29.73	8.48	10 18.30	33 41.34
69	8	. .	. .	23.	. .	. .	. .	. .	12 39.98	1.03	1.18	.	5	47.213	12 0.38	30.21	8.15	12 39.83	23 30 18.74
70	7	. .	. .	. .	. .	4.5	. .	. .	13 47.35	1.03	0.69	.	2	5.932	55 15.72	30.45	12.62	13 47.01	24 13 38.79
71	6	. .	. .	. .	25.	. .	. .	. .	15 24.87	1.03	0.94	.	3	26.705	33 26.72	30.79	10.35	15 24.96	23 51 47.86
72	8	. .	. .	51.	. .	. .	. .	. .	17 7.93	1.03	1.10	.	5	39.282	20 18.18	31.15	8.99	17 7.86	23 38 38.32
73	8	. .	. .	26.5	. .	. .	. .	. .	18 43.48	1.03	0.76	.	2	11.292	49 38.78	31.47	12.03	18 43.75	24 8 2.28
74	6	. .	47.5	. .	21.	. .	. .	. .	20 21.10	1.03	1.24	.	5	52.340	6 38.40	31.81	7.61	20 21.89	23 24 57.82
75	8	. .	. .	45.	. .	. .	. .	. .	1.88	1.03	0.98	.	3	29.275	30 45.61	. .	10.07	(21) 1.93	48 35.68
76	8	. .	. .	. .	. .	. .	. .	53.	21 2.38	1.03	0.98	.	3	29.283	30 44.67	31.95	10.07	21 2.43	49 6.69
77	7	. .	21.	. .	. .	. .	. .	. .	29 54.83	1.03	1.08	.	4	37.080	22 36.32	33.77	9 23	29 54.78	40 59.32
78	9	. .	. .	. .	. .	41.5	. .	. .	30 24.65	1.03	1.02	.	3	31.744	28 10.52	33.88	9.81	30 24.66	46 34.21
79	7	. .	36.5	. .	. .	. .	. .	. .	10.37	1.03	0.95	.	3	25.314	34 53.92	. .	10.51	(32) 10.45	52 44.43
80	6	40.5	. .	. .	. .	. .	. .	. .	34 31.07	1.03	0.93	.	3	23.622	36 39.62	34.72	10.68	34 31.17	55 5.02
81	7	. .	. .	. .	. .	. .	2.	. .	34 28.43	1.03	1.05	.	4	33.690	26 8.16	34.71	9.60	34 28.41	44 32.47
82	7	. .	. .	. .	. .	. .	20.	. .	35 46.44	1.03	1.03	.	3	32.409	27 28.85	34.98	9.74	35 46.44	45 53.57
83	6	. .	13.	. .	. .	. .	. .	. .	37 56.82	1.03	1.20	.	4	45.722	13 33.85	35.39	8.31	37 56.65	31 57.55
84	7	. .	. .	. .	. .	. .	21.	. .	37 4.08	1.03	1.20	.	4	46.132	13 7.37	35.39	8.27	38 3.91	31 31.03
85	5	. .	. .	. .	32.	. .	. .	. .	39 31.88	1.03	0.96	.	3	25.051	35 10.54	35.75	10.54	39 31.95	53 36.83
86	7	. .	. .	. .	. .	. .	46.	. .	40 12.45	1.03	1.03	.	3	31.140	28 48.35	35.89	9.88	40 12.45	47 14.12
87	8	13.	. .	. .	. .	. .	. .	. .	43 3.50	1.03	0.99	.	3	27.519	32 35.21	36.47	10.27	43 3.54	51 1.95
88	8	9.8	. .	. .	. .	. .	. .	. .	46 0.24	1.04	1.04	.	3	30.838	29 6.80	37.07	9.91	46 0.24	47 33.78
89	7	. .	. .	. .	17.5	. .	. .	. .	47 17.38	1.04	0.97	.	3	25.351	34 51.85	37.33	10.50	47 17.45	53 19.68
90	7	. .	. .	. .	. .	43.5	. .	. .	48 26.57	1.04	0.96	.	3	23.820	36 27.57	37.56	10.66	48 26.65	54 55.79
91	7	. .	. .	. .	. .	. .	. .	4.	49 13.41	1.04	1.13	.	4	38.190	21 25.41	37.72	9.11	49 13.32	23 39 52.24
92	7	. .	. .	. .	. .	21.	. .	. .	51 3.92	1.04	0.81	.	2	12.119	48 47.93	38.09	11.94	51 4.15	24 7 17.96
93	7	. .	. .	. .	45.	. .	. .	. .	52 54.88	1.04	1.22	.	4	45.230	14 4.74	38.43	8.37	52 54.70	23 32 31.54
94	8	. .	. .	58.5	. .	. .	. .	. .	55 15.49	1.05	1.26	.	4	48.042	11 8.23	38.94	8.06	55 15.28	29 35.23
95	7	25.	. .	58.	. .	. .	. .	. .	7 58 15.26	1.05	0.95	3	2	22.419	38 1.03	39.54	10.82	7 58 15.36	56 31.39
96	3	18.5	. .	52.	9.	. .	. .	. .	8 1 8.94	1.06	1.00	.	3	26.235	33 56.32	40.12	10.42	8 1 9.00	52 26.86
97	7	. .	. .	. .	. .	34.	. .	. .	2 17.04	1.06	0.95	.	3	21.768	38 36.35	40.35	11.91	2 17.15	23 57 8.61
98	8	. .	. .	. .	. .	. .	. .	19.5	8 3 28.61	+ 1.07	−0.86	.	2	14.498	−46 19.44	−40.58	−11.71	8 3 28.82	−24 4 51.73

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(156) 50. Micrometer reading assumed as 16r.295 instead of 15r.295.
(156) 51. Micrometer reading assumed as 41r.792 instead of 46r.792.
(156) 83. Transit over T. II assumed as 23s, not 13s.
(156) 84. Transit over T. V assumed as recorded over T. VI, and minutes assumed as 38, not 37.
(156) 87. Right ascension differs 20s.9 from Arg. Z. 362, 143; and Arg. probably wrong by 1 thread interval.
(156) 93. Transit over T. IV assumed as 55s, not 45s.
(156) 94. Declination differs 5′ from Arg. Z. 280, 146, and Z. 362, 165.

ZONE 156. JANUARY 20. S. $D_{\circ} = -23° 17' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	8	38.	. .	. .	. .	. .	. .	. .	8 6 28.40	+ 1.07	−1.11	.	3	33.868	−25 56.69	−41.17	− 9.58	8 6 28.36	−23 44 27.44
100	6	. .	. .	. .	51.	. .	. .	. .	6 50.87	1.07	1.04	.	3	28.065	32 1.46	41.24	10.21	6 50.90	23 50 32.91
101	8	19.	36.	. .	. .	. .	. .	. .	33 9.81	1.14	0.94	.	2	16.560	44 7.94	46.38	11.48	33 10.01	24 2 45.80
102	8	. .	. .	6.	. .	. .	. .	. .	34 22.97	1.14	0.92	.	2	14.189	46 37.12	46.61	11.73	34 23.19	24 5 15.46
103	7	. .	27.	. .	. .	. .	. .	. .	36 0.83	1.15	1.20	.	4	37.674	21 59.04	46.93	9.16	36 0.78	23 40 35.13
104	7	. .	. .	. .	. .	33.	. .	. .	36 16.08	1.15	1.05	.	3	24.638	35 36.39	46.98	10.59	36 16.18	23 54 13.96
105	8	. .	. .	. .	38.	. .	. .	. .	37.95	1.16	. .	.	2	11.583	49 21.10	. .	12.03	(39)	24 7 13.13
106	8	. .	. .	. .	5.	. .	. .	. .	41 4.87	1.17	1.09	.	3	28.072	32 1.03	47.89	10.21	41 4.95	23 50 39.13
107	.9	35.	. .	. .	. .	. .	. .	. .	44 25.69	1.18	0.97	.	2	17.805	42 48.66	48.51	11.33	44 25.90	24 1 28.50
108	9	. .	52.	. .	. .	. .	. .	. .	8 48 25.85	+ 1.19	−1.11	.	3	28.825	−31 13.41	−49.26	−10.13	8 48 25.93	−23 49 52.80

ZONE 157. JANUARY 22. S. $D_{\circ} = -25° 48' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	. .	29.	. .	. .	4 59 11.75	+ 0.21	−1.16	.	3	26.823	−33 19.19	− 1.32	− 6.39	4 59 10.80	−26 21 26.91
2	7	48.5	. .	23.	39.5	. .	. .	. .	5 4 39.83	0.17	0.97	IV.	4	41.560	17 55.03	2.30	4.63	5 4 39.03	6 1.96
3	9	. .	. .	46.	. .	. .	. .	. .	7 3.24	0.16	1.18	.	3	26.328	33 50.49	2.73	6.44	7 2.22	21 59.66
4	7	. .	. .	. .	. .	44.	. .	. .	8 26.73	0.14	1.20	.	3	25.472	34 44.19	2.99	6.55	8 25.67	22 53.73
5	9	. .	. .	. .	39.8	. .	. .	. .	10 39.71	0.13	1.31	.	3	18.408	42 7.34	3.39	7.40	10 38.53	30 18.13
6	7	. .	7.8	. .	. .	. .	16.	. .	13 42.03	0.11	0.97	V.	4	42.383	17 3.19	3.96	4.53	13 41.17	5 11.68
7	9	. .	. .	. .	. .	19.8	. .	. .	20 2.60	0.06	1.13	.	3	31.545	28 23.13	5.13	5.82	20 1.53	16 34.08
8	9	. .	57.5	. .	. .	. .	. .	. .	22 32.15	0.05	1.41	.	1	11.132	49 42.79	5.61	8.29	22 30.79	37 56.69
9	9	. .	. .	38.5	. .	. .	. .	. .	22 55.72	0.04	1.15	.	3	30.314	29 40.43	5.68	5.96	22 54.61	17 52.07
10	10	. .	. .	. .	. .	. .	. .	45.	23 53.14	0.03	1.31	.	3	18.820	36 27.17	5.87	6.78	23 51.86	24 39.82
11	9	. .	16.	. .	. .	. .	. .	. .	26 50.56	0.02	1.22	.	3	26.068	34 6.42	6.43	6.47	26 49.36	26 22 19.32
12	9	. .	57.8	. .	. .	. .	. .	. .	30 32.30	+ 0.00	0.80	.	5	56.535	7 28.89	7.13	3.41	30 31.50	25 55 39.43
13	8	. .	. .	40.	. .	. .	. .	. .	35 57.23	− 0.03	1.20	.	3	28.023	32 3.97	8.18	6.24	35 56.00	26 20 18.39
14	9	. .	. .	9.	. .	. .	0.	. .	37 26.00	0.05	1.11	III.	4	35.048	24 43.76	8.46	5.40	37 24.84	12 57.62
15	8	53.4	. .	. .	. .	. .	. .	. .	40 28.02	0.07	1.29	III.	3	22.375	37 58.47	9.12	6.92	40 26.66	26 14.51
16	8	. .	. .	. .	. .	. .	42.	. .	41 7.75	0.07	1.19	.	3	29.389	30 38.21	9.19	6.08	41 6.49	18 53.48
17	7	. .	1.3	. .	. .	. .	. .	. .	43 35.87	0.08	1.25	.	3	24.823	35 24.46	9.68	6.62	43 34.54	26 23 40.76
18	9	. .	. .	. .	57.	. .	. .	. .	44 56.90	0.09	0.87	.	5	52.985	5 57.70	9.94	3.27	44 55.94	25 54 10.91
19	7	. .	. .	. .	. .	20.	. .	. .	46 2.90	0.10	0.96	.	4	48.294	10 52.15	10.16	3.83	46 1.84	25 59 6.14
20	8	42.	. .	16.	. .	. .	. .	. .	50 33.54	0.13	1.40	.	2	16.182	44 32.14	11.06	7.67	50 32.01	26 32 50.87
21	9	. .	. .	1.	. .	. .	. .	9.	52 17.36	0.14	1.13	III.	3	34.718	25 3.91	11.41	5.44	52 16.09	26 13 20.76
22	10	. .	59.4	. .	. .	. .	. .	. .	55 33.91	0.15	0.93	.	4	49.285	9 50.38	12.06	3.72	55 32.83	25 58 6.16
23	5	. .	40.	. .	. .	31.5	. .	. .	57 14.42	0.16	1.19	.	3	31.070	28 52.93	12.40	5.88	57 13.07	26 17 11.21
24	10	. .	. .	30.	. .	. .	. .	. .	5 59 47.22	0.18	1.22	.	3	29.472	30 33.19	12.91	6.07	5 59 45.82	18 52.17
25	7	. .	. .	. .	49.	. .	. .	. .	6 3 48.96	0.20	1.52	.	1	8.789	52 9.20	13.72	8.61	6 3 47.24	40 31.53
26	5	. .	. .	. .	. .	31.	. .	. .	5 13.69	0.21	1.35	.	3	21.638	38 44.57	14.02	7.02	5 12.13	27 5.61
27	8	. .	43.	. .	. .	. .	. .	. .	8 17.53	0.22	1.08	.	4	40.475	19 3.37	14.63	4.75	8 16.23	7 22.75
28	9	. .	. .	. .	. .	. .	10.	. .	8 35.73	0.22	1.11	.	4	38.378	21 14.17	14.69	4.99	8 34.40	26 9 33.85
29	9	. .	. .	9.8	. .	. .	. .	. .	11 27.14	0.23	0.96	.	5	49.120	10 0.56	15.28	3.71	11 25.95	25 58 19.55
30	10	. .	. .	. .	. .	2.	. .	. .	12 44.80	0.24	1.20	.	3	32.095	27 48.56	15.54	5.75	12 43.36	26 16 9.85
31	8	. .	40.	. .	14.	. .	. .	. .	15 14.20	0.25	1.26	IV.	3	28.323	36 59.11	16.06	6.67	15 12.69	25 21.84
32	7	. .	. .	. .	. .	42.	. .	. .	17 24.78	0.26	1.25	.	3	29.085	30 57.41	16.49	6.12	17 23.27	19 20.02
33	6	. .	. .	. .	. .	. .	47.	. .	18 12.73	0.26	1.30	.	3	26.484	33 40.52	16.66	6.44	18 11.17	26 22 3.62
34	9	. .	. .	. .	22.4	. .	. .	. .	6 20 22.26	− 0.27	−1.17	.	3	35.372	−24 23.12	−17.10	− 5.35	6 20 20.82	−26 12 45.57

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Jan. 22,	0	. .	. .	. .	. .	. .	359 59 56.13	29.9862

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 157	Jan. 22, 4 59	75 9 60.0	69.0	67.2	59.3	65.6	57.9	63.17	30.082	43.8	33.9			
	6 3	. .	. .	. .	. .	. .	. .	. .	30.080	43.	33.8			
	6 5	. .	. .	. .	. .	. .	. .	. .	30.086	41.8	33.1			
	6 57	. .	. .	. .	. .	. .	. .	. .	30.082	41.8	33.2			
	7 19	. .	. .	. .	. .	. .	. .	. .	30.084	41.0	32.8			
	7 44	. .	. .	. .	. .	. .	. .	. .	30.078	40.8	32.8			
	8 38	. .	. .	. .	. .	. .	. .	. .	30.070	40.2	32.0			
	9 0	. .	. .	. .	. .	. .	. .	. .	30.072	40.	32.			

REMARKS.

(157) 10. Micrometer reading assumed as $23^r.820$, not $18^r.820$.

(157) 12. Micrometer reading assumed as $51^r.535$, not $56^r.535$.

(157) 18. Differs 2′ in declination from Arg. Z. 323, 101; and 1′ from Mer. Circle, 1849, February 16.

(157) 31. Micrometer reading assumed as $23^r.323$, not $28^r.323$.

(157) 32. Differs 1′ in declination from Arg. Z. 323, 60; and Z. 360, 31.

ZONE 157. JANUARY 22. S. $D_0 = -25° 48' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	10	. .	. .	. .	. .	. .	4.	. .	6 21 29.71	− 0.28	−0.99	.	4	48.252	−10 54.35	−17.34	− 3.81	6 21 28.44	−25 59 15.50
36	9	. .	. .	. .	. .	. .	44.	. .	23 9.72	0.29	1.03	.	4	46.229	13 1.34	17.68	4.06	23 8.40	26 1 23.08
37	7	. .	. .	. .	. .	. .	22.	. .	24 47.74	0.29	1.18	.	3	34.830	24 56.63	18.02	5.42	24 46.27	13 20.07
38	6	. .	4.	. .	. .	. .	. .	. .	27 38.54	0.30	1.18	.	3	35.050	24 42.88	18.61	5.40	27 37.06	13 6.89
39	6	27.5	. .	1.5	. .	. .	. .	. .	30 18.94	0.31	1.34	III.	3	23.930	36 20.66	19.16	6.74	30 17.29	24 46.56
40	8	. .	37.	. .	. .	. .	. .	. .	33 11.59	0.32	1.37	.	3	22.313	38 2.10	19.77	6.93	33 9.90	26 28.80
41	8	. .	. .	9.	. .	. .	. .	. .	34 26.28	0.33	1.16	.	4	37.685	21 58.29	20.02	5.08	34 24.79	26 10 23.39
42	7	. .	. .	34.	. .	. .	. .	. .	36 8.66	0.34	1.00	.	5	48.570	10 35.14	20.52	3.78	37 7.34	25 58 59.44
43	7	. .	. .	. .	. .	. .	52.5	. .	18.24	. .	1.27	.	3	29.068	30 58.29	. .	6.12	38	26
44	6	. .	23.	. .	57.	. .	. .	. .	41 57.21	0.35	1.32	.	3	26.296	33 52.56	21.60	6.46	41 55.54	22 20.62
45	8	. .	. .	. .	. .	. .	. .	27.	45 35.30	0.36	1.32	.	3	27.060	33 3.94	21.37	6.36	45 33.62	21 31.67
46	7	. .	14.5	. .	. .	. .	. .	. .	51 49.04	0.38	1.24	.	3	33.534	26 18.14	23.67	5.58	51 47.42	14 47.39
47	4	. .	. .	40.5	. .	. .	. .	. .	52 57.73	0.38	1.26	.	3	32.042	27 51.82	23.91	5.76	52 56.09	16 21.49
48	6	. .	. .	1.	19.	. .	. .	. .	54 18.54	0.38	1.32	.	3	28.150	31 56.20	24.19	6.22	54 16.84	20 26.61
49	6	. .	. .	. .	55.4	. .	. .	. .	55 55.30	0.39	1.43	.	2	20.209	40 20.15	24.53	7.19	55 53.48	28 51.87
50	8	. .	. .	. .	. .	5.8	. .	. .	6 57 48.51	0.39	1.42	.	3	23.408	36 53.66	24.93	6.80	6 57 46.70	25 25.39
51	5	. .	. .	39.8	. .	. .	. .	. .	7 0 57.06	0.40	1.40	.	3	23.259	37 2.95	25.60	6.83	7 0 55.26	25 35.38
52	3	. .	. .	1.5	. .	35.8	. .	. .	2 18.71	0.40	1.18	V.	4	38.658	20 56.86	25.87	4.94	2 17.13	9 27.67
53	8	23.	. .	. .	. .	. .	. .	. .	6 14.43	0.41	1.26	.	3	33.920	25 53.41	26.69	5.53	6 12.76	14 25.63
54	4	. .	36.	. .	. .	. .	. .	. .	8 10.53	0.41	1.14	.	4	42.145	17 18.45	27.11	4.53	8 8.98	5 50.09
55	4	. .	. .	. .	45.	. .	. .	36.5	8 44.78	0.41	1.48	VII.	2	18.308	42 20.45	27.22	7.42	8 42.89	30 55.09
56	8	. .	. .	. .	. .	. .	. .	53.8	9 1.89	0.41	1.51	.	2	15.690	45 4.50	27.28	7.78	9 59.97	33 39.56
57	6	. .	. .	. .	. .	51.	. .	. .	11 43.65	0.42	1.50	.	2	17.528	43 8.79	27.80	7.55	11 41.73	31 44.14
58	5	. .	. .	. .	. .	58.5	. .	. .	12 46.29	0.42	1.32	.	3	29.742	30 16.12	28.05	6.06	12 44.55	18 50.23
59	6	. .	. .	11.	. .	. .	. .	. .	14 28.26	0.42	1.41	.	3	23.458	36 50.53	28.43	6.81	14 26.43	25 25.77
60	8	. .	. .	25.	. .	. .	. .	. .	16 42.31	0.42	1.14	.	5	43.152	16 15.24	28.90	4.42	16 40.75	4 48.56
61	7	. .	56.5	. .	. .	. .	. .	. .	18 31.07	0.42	1.39	.	3	25.520	34 40.93	29.27	6.56	18 29.26	23 16.76
62	6	. .	. .	10.5	. .	. .	. .	. .	19 27.73	0.43	1.34	.	3	28.806	31 14.79	29.47	6.16	19 25.96	19 50.42
63	7	. .	. .	. .	. .	17.5	. .	. .	20 0.17	0.43	1.48	.	2	19.525	41 3.55	29.58	7.28	19 58.26	29 40.41
64	5	. .	. .	. .	56.5	. .	. .	. .	21 56.42	0.43	1.51	.	2	17.137	43 32.81	29.99	7.60	21 54.48	32 10.40
65	8	. .	56.	. .	. .	. .	. .	. .	25 30.56	0.43	1.40	.	3	26.260	23 27.18	30.72	4.95	25 28.73	12 2.85
66	9	. .	. .	. .	. .	. .	. .	25.	25 32.78	0.43	. .	.	.	.813	33 19.38	30.72	6.38	25 (32)	21 56.48
67	6	. .	35.	. .	26.	. .	. .	. .	29 26.17	0.43	1.34	II.	3	30.504	29 28.25	31.56	5.94	29 24.40	18 5.75
68	7	. .	22.	. .	. .	. .	. .	. .	30 56.60	0.44	1.49	.	2	20.340	40 10.68	31.87	7.18	30 54.67	28 49.73
69	5	51.	. .	. .	. .	. .	. .	. .	32 42.69	0.44	1.48	.	3	21.104	39 17.49	32.23	7.09	32 40.77	27 56.81
70	5	. .	. .	. .	42.	. .	. .	33.5	32 41.78	0.44	1.48	IV.	3	21.272	39 7.71	32.23	7.08	32 39.86	26 27 47.02
71	7	47.	. .	. .	. .	. .	. .	. .	36 38.25	0.44	1.10	.	5	47.843	11 20.54	33.05	3.83	36 36.71	25 59 57.42
72	8	14.	. .	. .	. .	. .	. .	. .	38 5.51	0.44	1.39	.	3	28.610	31 26.71	33.35	6.19	38 3.68	26 20 6.25
73	8	. .	27.	. .	. .	. .	. .	. .	40 1.61	0.44	1.53	.	2	18.248	42 21.83	33.76	7.46	39 59.64	31 3.05
74	9	. .	. .	. .	. .	. .	. .	49.	40 14.67	0.44	1.14	.	4	46.332	12 54.37	33.96	4.04	40 13.09	1 32.37
75	8	. .	. .	3.5	. .	. .	. .	. .	43 20.76	0.44	1.29	.	3	36.063	23 39.50	34.46	5.25	43 19.03	12 19.21
76	7	. .	. .	. .	. .	. .	41.5	. .	44 7.24	0.44	1.27	.	3	37.192	22 28.60	34.60	5.12	44 5.53	11 8.32
77	6	. .	18.8	. .	. .	. .	. .	. .	46 53.32	0.44	1.15	.	2	46.200	13 8.00	35.17	4.04	46 57.73	26 1 47.21
78	6	. .	. .	. .	. .	. .	. .	. .	47	0.44	1.09	.	5	50.030	9 3.29	35.38	3.59	47	25 57 42.26
79	7	. .	. .	29.5	. .	. .	. .	. .	49 46.82	0.44	1.15	.	4	45.956	13 19.10	35.79	4.05	49 45.23	26 1 58.94
80	8	. .	. .	. .	6.	. .	. .	. .	54 5.87	0.43	1.28	.	3	37.370	22 17.74	36.69	4.98	54 4.16	10 59.41
81	9	. .	. .	. .	. .	30.5	. .	. .	56 13.38	0.43	1.17	.	4	44.942	14 22.38	37.14	4.17	56 11.78	3 3.69
82	8	. .	. .	. .	22.	. .	. .	. .	58 21.86	0.43	1.32	.	3	35.568	24 10.76	37.57	5.32	58 20.11	12 53.65
83	7	. .	. .	. .	. .	. .	43.	. .	7 59 8.75	− 0.43	−1.41	.	3	28.592	−31 28.21	−38.72	− 6.19	7 59 6.91	−26 20 13.12

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(157) 42. Transit over T. II assumed as recorded over T. III; and minutes as 37, not 36.

(157) 56. Minutes assumed as 10, not 9.

(157) 57. Transit over T. V assumed as 1^s, not 51^s.

(157) 58. Transit over T. V assumed as $3^s.5$, not $58^s.5$, to agree with Arg. Z. 360, 140; and Transit Z., 1848, January 20.

(157) 65. Micrometer reading assumed as $36^r.260$, not $26^r.260$.

(157) 67. Transit at 35^s assumed to have been over T. I.

(157) 74. Transit over T. VI assumed as recorded over T. VII.

(157) 81. Differs 17^s in right ascension from Arg. Z. 290, 1.

ZONE 157. JANUARY 22. S. $D_\circ = -25° 48' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
84	7	2.8	..	..	..	..	..	..	8 31 54.17	− 0.37	−1.28	.	4	41.188	−18 18.45	−44.32	− 4.64	8 31 52.52	−26 7 7.41
85	9	..	9.	..	..	..	..	..	33 43.54	0.36	1.40	.	3	33.522	26 18.88	44.66	5.55	33 41.78	26 15 9.12
86	9	..	..	..	..	24.	..	..	38 6.92	0.35	1.17	.	4	49.500	9 36.37	45.53	3.62	38 5.40	25 58 25.52
87	6	..	..	..	45.8	..	..	..	39 45.68	0.34	1.25	.	4	44.128	15 13.85	45.84	4.27	39 44.09	26 4 3.98
88	8	..	..	..	..	..	..	54.	39 2.39	0.34	1.27	.	4	43.324	16 3.18	45.70	4.38	40 0.78	4 53.26
89	9	29.6	..	..	4.	..	..	..	46 21.28	0.32	1.52	IV.	3	25.968	34 12.88	47.06	6.51	46 19.43	23 6.45
90	10	..	..	..	36.	..	..	..	47 35.86	0.32	1.49	.	3	27.930	32 9.80	47.35	6.28	47 34.05	21 3.43
91	9	..	55.4	..	..	..	..	..	49 29.92	0.31	1.27	.	4	43.710	15 40.14	47.72	4.34	49 28.34	4 32.20
92	9	..	..	30.	..	..	..	..	51 47.25	0.31	1.40	.	4	34.828	24 57.51	48.14	5.42	51 45.54	13 51.07
93	6	..	8.	..	..	..	..	..	54 42.52	0.30	1.28	.	5	43.634	15 44.98	48.67	4.35	54 40.94	26 4 38.00
94	7	..	..	..	22.8	..	..	..	55 22.69	0.29	1.22	.	5	48.603	10 32.95	48.82	3.73	55 21.18	25 59 25.50
95	7	..	..	49.	..	..	..	..	8 58 6.28	0.28	1.62	.	2	19.840	40 42.54	49.33	7.27	8 58 4.38	26 29 39.14
96	9	..	36.	..	..	..	..	..	9 0 10.55	0.27	1.50	.	3	28.745	31 18.42	49.71	6.15	9 0 8.78	20 14.35
97	6	..	39.	..	..	30.	..	..	9 2 13.18	− 0.27	−1.36	.	4	38.720	−20 53.15	−50.09	− 4.92	9 2 11.55	−26 9 48.16

ZONE 158. MARCH 6. C. $D_\circ = -27° 41' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	..	42.5	59.5	16.7	34.4	..	10 59 59.59	−33.81	−0.81	IV.	4	45.743	−13 23.69	− 0.32	− 6.78	10 59 24.97	−27 55 0.79
2	9.10	..	31.6	49.3	6.5	..	..	..	11 11 6.68	33.76	0.78	III.	2	21.288	39 2.26	1.72	11.80	11 10 32.14	28 20 45.78
3	9	..	28.	45.3	2.7	20.8	..	..	13 3.02	33.74	0.85	IV.	5	52.701	6 8.76	1.94	5.40	12 28.43	27 47 46.10
4	9	..	..	..	19.5	37.8	..	..	14 19.89	33.74	6.83	V.	4	45.648	13 30.09	2.09	6.83	13 45.32	27 55 9.01
5	8	..	42.	59.8	17.3	35.5	53.4	..	17 17.67	33.73	0.82	IV.	3	36.902	22 46.85	2.43	8.60	16 43.12	28 4 27.88
6	8	..	..	34.	52.	9.3	26.6	..	17 51.71	33.72	0.79	IV.	2	20.622	39 44.27	2.50	11.93	17 17.20	28 21 28.70
7	9	..	..	..	..	..	..	10.3	18 17.84	33.72	0.85	VII.	5	50.036	8 55.71	2.54	5.94	17 43.27	27 50 34.19
8	9	..	6.3	23.	41.3	59.5	..	..	20 41.28	33.71	0.82	IV.	3	33.076	26 47.07	2.81	9.36	20 6.75	28 8 29.24
9	9.10	..	58.1	..	33.	..	8.	..	22 33.09	33.70	0.80	IV.	3	22.606	37 43.92	2.99	11.51	21 58.59	28 19 28.42
10	8	..	37.2	55.3	12.8	29.8	47.5	..	24 12.58	33.69	0.85	V.	5	42.758	16 32.88	3.17	7.42	23 38.04	27 58 13.47
11	8.9	..	..	..	..	..	..	17.3	25 24.49	33.68	0.79	VII.	2	15.828	44 44.88	3.29	12.93	24 50.02	28 26 31.10
12	8.9	..	..	..	..	..	..	17.5	25 24.69	33.67	0.79	VII.	2	15.9	44 40.35	3.29	12.91	24 50.23	26 26.55
13	9.10	..	..	..	23.	..	..	..	30 22.85	33.65	0.83	IV.	3	29.036	31 0.48	3.79	10.19	29 48.37	12 44.46
14	9.10	..	39.3	56.3	14.7	..	..	..	33 14.37	33.63	0.79	III.	2	12.189	48 32.82	4.05	13.69	32 39.95	30 20.56
15	7	..	..	59.2	16.5	34.1	51.5	..	34 16.56	33.63	0.81	IV.	3	19.820	40 38.53	4.14	12.09	33 42.12	22 24.76
16	9	..	..	11.8	28.5	46.4	..	..	39 28.84	33.61	0.81	IV.	2	15.666	44 55.04	4.62	12.97	38 54.42	26 42.63
17	9	..	..	..	..	9.2	26.8	44.6	39 51.65	33.60	0.80	V.	2	11.306	49 28.75	4.66	13.87	39 17.25	31 17.28
18	9.10	..	..	1.3	18.5	36.1	..	..	42 18.58	33.59	0.83	IV.	3	24.379	35 52.82	4.85	11.15	41 44.16	17 38.82
19	9.10	..	..	58.5	..	..	51.1	..	48 16.15	33.55	0.86	IV.	3	31.872	28 2.49	5.35	9.62	47 41.74	9 47.46
20	9.10	..	39.7	..	13.7	..	..	..	50 14.19	33.53	0.84	II.	3	25.964	34 13.07	5.51	10.83	49 39.82	15 59.41
21	8.9	..	..	..	4.5	22.5	39.6	..	56 4.64	33.50	0.83	V.	2	16.798	43 44.10	5.94	12.74	55 30.31	28 25 32.78
22	9	..	..	27.2	46.2	..	10.8	..	57 45.62	33.49	0.91	IV.	5	51.156	7 45.88	6.07	5.71	57 11.22	27 49 27.66
23	9	..	..	46.5	..	11.	28.3	..	58 4.05	33.48	0.91	V.	4	48.871	10 7.64	6.10	6.18	57 29.66	27 51 49.92
24	9	..	..	..	..	..	20.6	..	11 59 44.91	33.48	0.86	V.	2	24.571	35 36.76	6.17	11.11	59 10.57	28 17 24.04
25	8.9	..	..	..	..	..	3.5	..	12 0 28.65	33.47	0.87	V.	3	28.278	31 48.04	6.29	10.36	11 59 54.31	13 34.69
26	7.8	..	..	37.5	54.5	12.	..	..	7 54.62	33.42	0.86	IV.	2	18.228	42 14.49	6.78	12.45	12 7 20.34	24 3.72
27	9	..	..	29.2	46.3	3.8	..	..	12 46.39	33.38	0.89	IV.	3	29.782	30 13.61	7.09	10.05	12 12.12	12 0.75
28	9	..	..	..	..	34.	51.6	..	13 16.48	33.38	0.86	V.	2	15.848	44 43.68	7.13	12.95	12 42.24	26 33.76
29	9	..	..	6.5	23.4	41.3	..	..	17 23.70	33.35	0.91	IV.	3	34.	25 49.02	7.37	9.16	16 49.44	28 7 35.55
30	8	..	34.	51.8	8.9	26.6	43.9	..	12 20 9.11	−33.33	−0.94	IV.	4	47.689	−11 21.60	− 7.55	− 6.39	12 19 34.84	−27 53 5.54

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Mar. 6,	0	..	..	..	..	..	359 59 61.73	29.9876

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 158	Mar. 6,	11	77 2 {32.9 / 31.6}	31.7 / 30.8	39.2 / 39.2	33.3 / 34.8	35.8 / 35.5	30.9 / 31.3	} 33.92	30.148	37.8	31.9	37.5	..	38.2
		11 25	..	..	..	..	..	..	..	..	..	30.5	37.		
		11 40	..	..	..	..	..	..	..	30.152	36.8	30.5			
		12	{32.9 / 31.5}	31.8 / 30.8	38.6 / 39.2	32.9 / 34.4	35.4 / 35.1	30.1 / 30.1	} 33.56	..	..	30.4	35.8		
		12 20	..	..	..	..	..	..	..	30.152	36.5	30.2	34.		

REMARKS.

(157) 88. Minutes assumed as 40, not 39.
(157) 89. Transit over T. III assumed to have been recorded over T. IV; and as $4^s.0$, not $0^s.4$.
(158) 22. Time of transit over T. VI assumed as $20^s.8$ instead of $10^s.8$.
(158) 23. T.'s II and III of following star assumed as recorded over T.'s IV and V.
(158) 24. T. VI assumed as recorded over T. V, and combined with its T.'s II and III, as above.
(158) 25. T. VI assumed as recorded over T. V.

ZONE 159. MARCH 7. S. $D_{\circ} = -25° 10' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	57.	. .	. .	. .	. .	. .	9 4 31.33	−34.64	−1.62	.	5	45.590	−13 34.93	− 8.15	− 1.22	9 3 55.08	−25 24 34.30
2	7	. .	. .	. .	29.8	. .	. .	. .	4 29.66	34.63	1.53	.	3	29.311	29 40.68	8.15	4.07	3 53.50	40 42.90
3	9	. .	44.	. .	. .	. .	. .	. .	6 18.42	34.64	1.47	.	2	19.695	40 41.41	8.46	5.86	5 42.31	51 45.73
4	9	. .	. .	30.3	. .	. .	. .	. .	12 44.64	34.64	1.51	.	3	32.752	27 7.33	9.59	3.51	12 28.49	38 10.43
5	8	. .	. .	8.	. .	. .	. .	. .	15 42.34	34.64	1.53	.	4	37.792	21 42.22	10.04	2.60	15 6.17	32 44.86
6	9	. .	. .	3.	. .	. .	. .	. .	17 20.19	34.64	1.52	.	4	38.904	20 32.44	10.39	2.40	16 44.03	31 35.23
7	.	. .	. .	. .	36.	. .	. .	. .	20 35.93	34.64	1.40	.	2	15.892	44 40.73	10.92	6.54	19 59.89	55 48.19
8	.	. .	2.	. .	. .	. .	. .	. .	22 36.35	34.64	1.47	.	3	29.408	30 37.26	11.26	4.11	22 0.24	41 42.63
9	7	. .	. .	. .	. .	. .	10.5	. .	22 36.42	34.64	1.47	.	3	29.438	30 34.94	11.26	4.11	22 0.31	41 40.31
10	4	. .	. .	. .	. .	8.	. .	. .	23 50.71	34.64	1.39	.	2	15.642	44 56.72	11.45	6.59	23 14.68	56 4.76
11	7	. .	52.	. .	. .	. .	. .	. .	26 26.38	34.64	1.43	.	3	25.433	34 46.64	11.90	4.83	25 50.31	45 53.37
12	7	. .	. .	45.5	. .	. .	. .	. .	30 2.77	34.64	1.55	.	6	52.285	6 34.95	12.50	0.03	29 26.58	17 37.48
13	7	. .	. .	. .	. .	14.	. .	. .	30 56.98	34.64	1.52	.	4	44.945	14 14.10	12.65	1.32	30 20.82	25 18.07
14	8	. .	33.5	. .	. .	. .	. .	. .	34 24.69	34.64	1.44	.	3	32.772	27 6.01	13.18	3.51	33 48.61	38 12.70
15	7	. .	16.	. .	. .	. .	24.	. .	39 50.12	34.64	1.44	II.	3	36.600	23 5.93	14.11	2.81	39 14.04	34 12.85
16	5	. .	59.5	. .	. .	. .	7.5	. .	42 33.64	34.64	1.39	.	3	27.032	33 6.14	14.54	4.54	41 57.61	44 15.22
17	9	. .	. .	. .	. .	35.	. .	. .	44 17.90	34.63	1.40	.	3	32.945	26 55.03	14.83	3.48	43 41.87	38 3.34
18	9	. .	. .	33.5	. .	. .	. .	. .	46 50.72	34.63	1.46	.	4	43.045	16 12.73	15.23	1.67	46 14.63	27 19.63
19	8	. .	. .	. .	. .	12.5	. .	. .	48 55.28	34.63	1.35	.	2	21.750	38 33.59	15.55	5.49	48 19.30	49 44.63
20	6	. .	. .	17.	. .	. .	8.	. .	50 34.02	34.62	1.34	III.	2	21.132	39 11.97	15.81	5.60	49 58.06	50 23.38
21	6	. .	3.	. .	. .	54.	. .	. .	53 37.12	34.62	1.38	.	3	30.279	29 42.68	16.29	3.96	53 1.12	40 52.93
22	7	. .	56.5	. .	. .	. .	4.	. .	9 55 30.40	34.62	1.38	V.	3	26.685	33 27.91	16.59	4.61	54 54.40	44 39.11
23	8	. .	. .	52.	. .	. .	43.	. .	10 0 9.02	34.62	1.30	III.	2	19.495	40 54.71	17.30	5.91	9 59 33.10	52 7.92
24	9	. .	. .	. .	21.5	. .	. .	. .	5 21.45	34.61	1.25	.	2	13.532	47 8.91	18.09	7.00	10 4 45.59	58 24.00
25	.	. .	7.	. .	. .	. .	. .	. .	9 41.42	34.60	1.27	.	2	20.520	39 49.98	18.75	5.72	9 5.55	51 4.45
26	9	. .	28.5	. .	. .	. .	37.2	. .	12 2.98	34.60	1.30	.	3	26.438	33 43.64	19.08	4.66	11 27.08	44 57.38
27	9	. .	28.	. .	1.5	. .	. .	. .	15 1.86	34.59	1.36	IV.	4	40.095	19 18.26	19.53	2.19	14 25.91	30 29.98
28	8	. .	32.	. .	5.5	. .	. .	. .	17 5.86	34.58	1.41	.	6	51.960	6 55.10	19.83	0.05	16 29.87	18 4.98
29	9	. .	. .	23.	. .	. .	. .	. .	18 40.16	34.58	1.32	.	3	35.058	24 42.69	20.07	3.08	18 4.26	35 55.84
30	9	. .	. .	. .	. .	. .	. .	49.	18 57.46	34.58	1.24	.	2	21.348	38 58.99	20.10	5.58	18 21.64	50 14.67
31	6	. .	51.	. .	. .	42.	. .	. .	24 25.11	34.57	1.27	.	3	28.346	31 43.90	20.88	4.32	23 49.27	42 59.10
32	7	. .	. .	7.	. .	. .	. .	. .	10 26 24.18	−34.56	−1.22	.	2	21.198	−39 7.83	−21.17	− 5.60	10 25 48.40	−25 50 24.60

ZONE 160. MARCH 24. S. $D_{\circ} = -25° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	. .	36.	. .	. .	. .	. .	. .	9 15 10.33	−17.80	−1.55	.	6	50.298	− 8 39.43	− 3.90	− 2.39	9 14 50.98	−25 19 45.72
2	9	. .	. .	. .	. .	42.5	. .	. .	15 25.43	17.80	1.52	.	4	37.850	21 39.40	3.94	4.60	15 6.11	32 47.94
3	9	. .	. .	. .	. .	. .	36.8	. .	17 2.71	17.80	1.50	.	4	39.042	20 24.91	4.21	4.38	16 43.41	31 33.50
4	10	. .	45.5	. .	. .	. .	. .	. .	20 19.95	17.81	1.46	.	2	15.012	44 32.78	4.77	8.47	20 0.68	55 46.02
5	9	. .	5.	. .	. .	. .	. .	. .	21 39.36	17.81	1.46	.	3	28.670	31 23.45	4.99	6.25	21 20.09	42 34.69
6	8	. .	. .	4.	. .	. .	. .	. .	22 21.14	17.81	1.46	.	3	32.350	27 32.80	5.10	5.59	22 1.87	38 43.49
7	7	. .	. .	4.	. .	. .	. .	. .	23 21.22	17.81	1.42	.	2	15.520	45 4.00	5.27	8.61	23 1.99	56 17.88
8	6	. .	. .	. .	. .	. .	8.5	. .	23 34.32	17.81	1.42	.	2	15.710	44 52.45	5.31	8.57	23 15.09	56 6.33
9	9	. .	35.	. .	. .	. .	. .	. .	26 9.38	17.82	1.42	.	3	25.523	34 41.00	5.74	6.81	25 50.14	45 53.55
10	10	. .	11.	. .	. .	. .	. .	. .	29 45.33	17.82	1.42	.	6	52.413	6 26.66	6.34	2.01	29 26.09	17 35.01
11	10	. .	. .	40.	. .	. .	. .	. .	30 39.88	17.82	1.40	.	4	45.050	14 6.83	6.54	3.32	30 20.66	25 16.69
12	10	. .	33.	. .	. .	. .	. .	. .	34 7.34	17.83	1.36	.	3	32.938	26 55.59	7.06	5.48	33 48.15	38 8.13
13	10	. .	59.	. .	. .	. .	. .	. .	9 38 33.43	−17.83	−1.31	.	2	19.065	−41 21.11	− 7.78	− 7.98	9 38 14.29	−25 52 36.87

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Mar. 7,	0	. .	. .	. .	. .	. .	359 59 60.99	29.9840
Mar. 24,	0	. .	. .	. .	. .	. .	54.27	29.9819

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 159	Mar. 7,	9 4	74 32 {29.5 / 28.8	27.8 / 27.8	32.4 / 35.0	29.8 / 31.8	31.0 / 31.0	29.5 / 29.0	30.28	30.056	45.	40.3			
		10 9	. .	. .	. .	. .	. .	. .	. .	30.042	44.8	38.2			
Zone 160	Mar. 24,	9 15	74 32 {30.5 / 30.0	26.2 / 26.8	35.4 / 37.0	32.8 / 33.8	30.3 / 29.0	31.0 / 30.8	31.13	30.282	48.	39.			
		9 45	. .	. .	. .	. .	. .	. .	. .	30.300	47.	38.			
		9 46	. .	. .	. .	. .	. .	. .	. .	30.280	46.5	37.2			
		10 48	. .	. .	. .	. .	. .	. .	. .	30.280	45.8	35.8			

REMARKS.

(159) 2. Micrometer reading assumed as $30^r.311$, not $29^r.311$.

(159) 4. Transit over T. II assumed to have been recorded as over T. III, and minutes assumed as 13 instead of 12.

(159) 5. Transit over T. II assumed to have been recorded as over T. III.

(159) 14. Transit over T. I assumed as recorded over T. II.

(159) 17. Transit over T. IV probably recorded as over T. V, to agree with Arg. Z. 288, 23.

(160) 4. Micrometer reading assumed as $16^r.012$, not $15^r.012$.

(160) 11. Transit over T. IV assumed as recorded over T. III.

ZONE 160. MARCH 24. S. $D_0 = -25° 11' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
14	8	. .	. .	. .	33.	. .	. .	. .	9 39 32.87	−17.84	−1.32	.	3	36.735	−22 57.39	− 7.94	− 4.79	9 39 13.71	−25 34 10.12
15	6	. .	42.5	. .	. .	. .	50.5	. .	42 16.64	17.84	1.29	.	3	28.149	31 56.76	8.38	6.34	41 57.51	25 43 11.48
16	10	. .	12.	. .	. .	. .	. .	. .	45 46.48	17.84	1.24	.	1	9.840	50 58.41	8.93	9.66	45 27.40	26 2 17.00
17	7	. .	. .	. .	28.	. .	. .	. .	46 27.96	17.84	1.23	.	1	8.993	51 52.90	9.04	9.80	46 8.89	26 3 11.74
18	8	. .	. .	. .	38.	. .	. .	. .	48 37.87	17.84	1.24	.	3	26.932	38 26.12	9.37	7.44	48 18.79	25 49 42.93
19	7	. .	. .	. .	18.	. .	. .	. .	50 17.88	17.84	1.22	.	3	26.304	39 5.21	9.65	7.56	49 58.82	50 22.43
20	7	. .	. .	. .	. .	37.	. .	. .	52 19.88	17.84	1.21	.	3	30.450	29 31.76	9.96	5.93	52 0.83	40 47.65
21	8	. .	. .	35.	. .	. .	26.	. .	9 59 52.02	17.85	1.12	.	2	19.634	40 46.18	11.12	7.87	9 59 43.05	52 5.17
22	10	. .	. .	15.	. .	. .	. .	. .	10 1 32.16	17.85	1.12	.	3	34.570	25 13.38	11.35	5.19	10 1 13.19	36 29.92
23	10	. .	5.	. .	. .	. .	. .	. .	3 39.33	17.85	1.12	.	5	49.645	9 20.30	11.66	2.48	3 20.36	20 34.44
24	10	. .	. .	. .	. .	. .	. .	55.	4 3.66	17.85	1.11	.	5	46.368	12 46.14	11.71	3.07	3 44.79	24 0.92
25	8	. .	. .	. .	24.	. .	. .	. .	9 23.91	17.85	1.04	.	2	20.758	39 35.62	12.50	7.68	9 5.02	50 55.80
26	8	. .	11.5	. .	45.	. .	. .	. .	11 45.38	17.84	1.03	II.	3	26.523	33 38.26	12.83	6.62	11 26.51	44 57.71
27	7	. .	27.5	. .	. .	. .	18.	. .	14 44.30	17.84	1.02	II.	5	40.305	19 6.71	13.25	4.15	14 25.54	30 24.11
28	9	. .	. .	. .	. .	27.5	. .	. .	16 10.22	17.84	0.99	.	2	16.920	43 36.45	13.45	8.38	15 51.39	54 58.28
29	10	. .	. .	23.	. .	. .	. .	. .	18 40.18	17.84	0.97	.	2	21.480	38 50.21	13.81	7.55	18 21.37	50 11.57
30	6	. .	. .	51.5	8.5	25.	. .	. .	24 8.29	17.84	0.93	V.	3	28.470	31 35.99	14.55	6.29	23 49.52	42 56.83
31	8	. .	. .	. .	7.	. .	. .	. .	26 6.90	17.84	0.91	.	3	21.490	38 53.97	14.80	7.54	25 48.15	50 16.31
32	7	. .	. .	0.	. .	. .	. .	8.5	28 17.15	17.84	0.90	III.	3	34.715	25 4.22	15.10	5.15	27 58.41	36 24.47
33	7	. .	. .	. .	. .	. .	36.	. .	28 18.73	17.84	0.89	.	2	18.082	42 23.77	15.17	8.19	29 0.00	53 47.13
34	9	. .	. .	19.5	. .	. .	. .	. .	33 36.70	17.83	0.86	.	4	39.450	19 58.42	15.78	4.29	33 18.01	25 31 18.49
35	9	. .	. .	43.	. .	. .	. .	. .	34 0.24	17.83	0.83	.	1	11.902	48 49.81	15.84	9.29	33 41.58	26 0 14.94
36	10	. .	. .	. .	43.5	. .	. .	. .	35 43.38	17.83	0.84	.	4	42.736	16 32.44	16.06	3.71	35 24.71	25 27 52.21
37	8	. .	22.	. .	56.	. .	. .	. .	39 56.10	17.82	0.79	II.	3	34.708	25 4.54	16.60	5.15	39 37.49	36 26.29
38	9	. .	. .	0.	. .	. .	. .	. .	41 17.16	17.82	0.78	.	3	34.762	25 1.21	16.78	5.15	40 58.56	25 36 23.14
39	9	. .	. .	8.	. .	. .	. .	. .	42 25.25	17.82	0.76	.	1	10.798	49 59.03	16.92	9.49	42 6.67	26 1 25.44
40	8	. .	. .	. .	6.	. .	. .	. .	47 5.94	17.81	0.72	.	2	15.155	45 27.14	17.49	8.70	46 47.41	25 56 53.33
41	10	. .	. .	. .	45.	. .	. .	. .	10 48 44.87	−17.81	−0.74	.	4	37.802	−21 42.09	−17.69	− 4.60	10 48 26.32	−25 33 4.38

ZONE 161. MARCH 29. S. $D_0 = -25° 56' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	18.	. .	. .	. .	. .	. .	9 13 52.56	−19.51	−1.03	.	4	42.115	−17 10.47	− 3.75	− 1.81	9 13 32.02	−26 13 16.03
2	8	. .	11.5	28.	. .	. .	. .	. .	16 45.70	19.51	1.66	.	3	24.182	36 5.18	4.22	5.08	16 24.53	32 14.48
3	8	. .	. .	. .	27.	. .	. .	. .	21 26.85	19.52	1.49	.	3	28.852	31 11.96	4.99	4.21	21 5.84	27 21.16
4	9	. .	. .	22.	. .	. .	. .	. .	23 39.30	19.52	1.77	.	2	20.928	39 24.64	5.34	5.67	23 18.01	35 35.65
5	8	. .	5.	23.	. .	. .	. .	. .	25 39.92	19.53	1.56	.	3	27.225	32 54.28	5.67	4.52	25 18.83	29 4.47
6	9	. .	. .	. .	. .	. .	. .	56.	26 4.32	19.53	1.12	.	5	40.200	19 13.23	5.74	2.15	25 43.67	15 21.12
7	8	. .	. .	54.	. .	. .	. .	. .	30 11.31	19.54	1.91	.	2	17.585	42 54.44	6.40	6.29	29 49.86	39 7.13
8	9	. .	32.5	. .	. .	. .	. .	. .	34 7.05	19.55	0.89	.	5	47.272	11 49.41	7.02	0.89	33 46.61	7 57.32
9	6	. .	25.	. .	. .	17.	. .	. .	40 59.64	19.56	1.79	II.	2	21.555	38 45.07	8.10	5.56	40 38.29	34 58.73
10	8	. .	19.5	. .	. .	. .	. .	. .	43 54.10	19.56	1.66	.	3	24.962	35 15.99	8.55	− 4.92	43 32.88	31 29.52
11	.	. .	. .	30.5	. .	. .	. .	. .	45 47.89	19.56	0.72	.	6	52.662	6 11.14	8.84	+ 0.09	45 27.61	2 19.89
12	6	. .	. .	. .	. .	47.	. .	. .	46 29.91	19.57	0.74	.	6	51.818	7 4.13	8.95	− 0.06	46 9.60	3 13.14
13	8	. .	6.5	. .	. .	. .	. .	. .	49 41.05	19.57	1.06	.	5	43.072	16 12.92	9.45	1.65	49 20.42	12 24.02
14	8	. .	. .	42.	. .	. .	. .	. .	50 59.26	19.57	1.60	.	3	27.228	32 54.09	9.64	4.52	50 38.09	29 8.25
15	7	. .	. .	. .	. .	. .	30.	. .	50 55.65	19.57	1.81	.	3	21.128	39 16.18	9.63	5.62	50 34.27	35 31.45
16	8	. .	. .	51.	. .	. .	. .	. .	54 8.24	19.57	. .	.	.	F.Wire.	29 59.81	10.22	4.00	53 [47]	26 14.03
17	8	. .	47.	. .	. .	. .	. .	. .	9 56 21.56	−19.57	−1.24	.	3	38.102	−21 31.62	−10.44	− 2.54	9 56 0.75	−26 17 44.60

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Mar. 29,	0	. .	. .	. .	. .	. .	359 59 55.39	30.0035

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 161	Mar. 29,	9 13	75 17 {29.5 30.0	22.0 21.5	27.3 27.5	34.8 35.5	22.5 22.3	34.0 34.6	} 28.46	30.238	58.2	50.3			
		10 13	. .	. .	. .	. .	. .	. .	. .	30.242	57.2	48.			
		10 17	. .	. .	. .	. .	. .	. .	. .	30.256	57.	47.3			
		10 53	. .	. .	. .	. .	. .	. .	. .	30.256	57.2	47.2			
		12 6	. .	. .	. .	. .	. .	. .	. .	30.250	55.	45.3			
		12 8	. .	. .	. .	. .	. .	. .	. .	30.250	55.	45.3			
		12 55	. .	. .	. .	. .	. .	. .	. .	30.252	53.5	44.2			

REMARKS.

(160) 18. Micrometer reading assumed as 21r.932, not 26r.932.

(160) 19. Micrometer reading assumed as 21r.304, not 26r.304.

(160) 27. Transit over T. III assumed to have been recorded as over T. II.

(160) 33. Minutes assumed as 29, not 28; and transit over T. V as recorded over T. VI, to agree with Arg. Z. 288, 89, and Tran., 1848, March 29.

(161) 9. Minutes of transit assumed as 39 instead of 40.

ZONE 161. MARCH 29. S. $D_0 = -25° 56' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	9	. .	. .	. .	. .	. .	. .	22.	9 56 30.30	−19.57	−1.34	.	3	35.352	−24 23.51	−10.47	− 3.05	9 56 9.30	−26 20 37.03
19	7	. .	. .	5.8	. .	. .	. .	. .	9 59 23.08	19.57	1.74	.	2	23.592	36 37.67	10.90	5.17	59 1.77	32 53.74
20	8	. .	. .	43.	. .	. .	. .	. .	10 0 0.26	19.57	1.45	.	3	31.875	28 2.36	10.99	3.68	9 59 39.24	24 17.03
21	8	. .	4.5	. .	. .	. .	. .	. .	5 39.10	19.58	1.70	.	3	25.162	35 3.58	11.81	4.90	10 5 17.82	31 20.29
22	6	. .	12.	. .	47.	. .	. .	. .	6 46.72	19.58	1.24	.	4	38.337	21 8.71	11.98	2.51	6 25.90	17 23.20
23	8	. .	. .	. .	20.5	. .	. .	. .	8 20.38	19.58	1.79	.	3	22.695	37 38.27	12.21	5.34	7 59.01	33 55.82
24	8	. .	2.5	. .	. .	. .	. .	. .	11 37.07	19.58	1.50	.	3	29.650	30 21.96	12.67	4.06	11 15.99	26 38.69
25	8	. .	. .	48.5	. .	. .	. .	. .	13 5.74	19.58	1.50	.	3	30.228	29 45.88	12.88	3.96	12 44.66	26 2.72
26	9	. .	. .	. .	. .	. .	42.	. .	18 7.68	19.58	1.71	.	3	25.448	34 45.25	13.59	4.85	17 46.39	31 3.69
27	8	. .	26.	. .	. .	. .	. .	. .	22 0.63	19.58	1.87	.	2	21.190	39 8.02	14.13	5.62	21 39.18	35 27.77
28	7	. .	36.5	. .	10.5	. .	. .	. .	27 10.76	19.58	1.85	.	2	22.048	38 14.02	14.83	5.47	26 49.33	34 34.32
29	5	. .	. .	15.8	33.	. .	. .	. .	30 33.01	19.57	1.97	IV.	2	18.580	41 52.35	15.29	6.09	30 11.47	38 13.73
30	8	. .	14.	. .	. .	. .	. .	. .	34 48.56	19.57	1.30	.	4	37.880	21 36.14	15.84	2.59	34 27.69	17 54.57
31	8	. .	1.5	. .	36.	. .	. .	. .	36 35.98	19.57	1.72	.	3	25.705	34 29.38	16.08	4.79	36 14.69	30 50.25
32	9	. .	. .	. .	0.	. .	35.	. .	39 0.26	19.57	2.18	.	2	13.470	47 12.87	16.39	7.03	38 38.51	43 36.29
33	9	. .	. .	27.	. .	. .	. .	. .	44 44.36	19.56	0.93	.	6	49.025	9 59.43	17.11	0.57	44 23.87	6 17.11
34	9	. .	37.5	. .	. .	. .	. .	. .	47 12.07	19.56	1.53	.	3	32.350	27 32.68	17.42	3.59	46 50.98	23 53.69
35	7	. .	. .	37.8	. .	. .	12.	. .	1 37.68	19.55	1.17	.	5	44.722	14 29.54	17.66	1.34	48 16.96	10 48.48
36	8	. .	5.2	. .	. .	. .	. .	. .	52 39.86	19.55	2.09	.	2	16.152	44 23.85	18.08	6.55	52 18.22	40 48.48
37	7	. .	. .	. .	. .	28.8	. .	. .	53 11.55	19.55	1.68	.	3	27.780	32 19.08	18.15	4.43	52 50.32	28 41.66
38	7	. .	50.	. .	. .	. .	. .	16.5	56 24.58	19.55	2.17	II.	2	14.331	46 18.12	18.52	6.87	56 2.86	42 43.51
39	8	. .	53.	. .	28.	. .	. .	. .	58 27.72	19.54	1.70	.	3	27.460	32 39.47	18.76	4.49	58 6.48	29 2.72
40	9	. .	. .	. .	3.	20.	. .	. .	10 58 2.80	19.54	1.70	.	3	27.808	32 17.46	18.83	4.42	10 58 41.56	28 40.71
41	10	. .	. .	. .	37.	. .	. .	. .	11 48 36.90	19.42	2.06	.	2	19.352	41 3.99	23.92	5.99	11 48 15.42	37 33.90
42	8	. .	. .	. .	. .	. .	48.	. .	50 13.68	19.42	1.26	.	4	42.654	16 38.21	24.07	1.71	49 53.00	13 3.99
43	10	. .	15.5	. .	. .	. .	. .	. .	52 50.06	19.41	1.36	.	4	39.818	19 34.50	24.29	2.24	52 29.29	16 1.03
44	10	. .	. .	. .	. .	. .	2.	. .	53 27.67	19.41	1.93	.	3	23.738	36 32.40	24.34	5.17	53 6.33	33 1.91
45	10	. .	. .	17.	. .	. .	. .	. .	11 58 34.24	19.39	1.74	.	3	29.322	30 42.79	24.77	4.13	11 58 13.11	27 11.69
46	9	. .	. .	. .	. .	15.5	. .	. .	12 0 58.20	19.38	1.96	.	3	23.512	36 46.95	24.96	5.21	12 0 36.86	33 17.12
47	10	. .	. .	42.5	. .	. .	. .	. .	4 59.87	19.38	1.04	.	6	49.480	9 31.07	25.11	0.47	2 39.45	5 56.65
48	8	. .	. .	. .	. .	27.	. .	. .	4 9.85	19.38	1.32	.	4	41.588	17 44.93	25.21	1.90	3 49.15	14 12.04
49	8	. .	. .	59.5	. .	. .	. .	. .	6 16.76	19.37	1.81	.	3	27.400	32 43.37	25.38	4.49	5 55.58	29 13.24
50	9	. .	18.5	. .	. .	. .	. .	. .	8 53.06	19.36	1.38	.	4	39.732	19 39.97	25.58	2.20	8 32.32	16 7.75
51	10	. .	. .	24.5	. .	. .	. .	. .	9 41.79	19.35	1.50	.	4	36.770	22 46.41	25.64	2.79	9 20.94	19 14.84
52	9	. .	37.	. .	. .	29.	. .	. .	14 11.67	19.34	1.74	II.	3	30.092	29 54.23	25.96	4.00	13 50.59	26 24.19
53	10	. .	34.	. .	8.5	. .	. .	. .	19 8.46	19.32	1.57	IV.	3	35.190	24 34.49	26.32	3.03	18 47.57	21 3.84
54	9	. .	17.	. .	. .	. .	26.	. .	22 51.62	19.31	1.40	II.	4	40.478	18 53.34	26.57	2.06	22 30.91	15 21.97
55	9	. .	5.8	. .	. .	. .	. .	. .	26 40.36	19.29	1.58	.	4	34.938	24 40.75	26.80	3.09	26 19.49	21 10.64
56	9	. .	. .	. .	. .	13.	. .	. .	26 55.85	19.28	1.32	.	5	43.100	16 11.53	26.82	1.57	26 35.25	12 39.92
57	5	. .	. .	49.5	. .	. .	. .	. .	30 6.80	19.26	1.50	.	5	37.438	22 6.88	27.02	2.64	29 46.04	18 36.54
58	9	. .	. .	. .	48.	. .	. .	. .	33 47.92	19.25	2.27	.	2	15.848	44 43.49	27.24	6.65	33 26.40	41 17.38
59	10	. .	. .	. .	57.	. .	. .	. .	36 56.89	19.23	1.02	.	6	51.600	7 18.02	27.42	0.02	36 36.64	3 45.46
60	8	. .	42.	. .	. .	. .	. .	. .	40 16.64	19.22	2.00	.	2	19.760	47 56.75	27.61	7.24	39 55.42	44 31.60
61	9	. .	. .	. .	48.	. .	. .	40.	40 47.94	19.22	2.46	IV.	.	10.886	50 2.23	27.64	7.49	40 26.26	46 37.36
62	9	. .	. .	37.5	. .	. .	. .	. .	54.82	19.19	1.38	.	5	41.570	17 47.51	27.84	1.90	44 34.25	14 17.25
63	8	. .	. .	. .	51.	. .	. .	. .	48 50.88	19.17	2.03	.	3	23.572	36 43.38	28.05	5.22	48 29.68	33 16.65
64	7	. .	. .	. .	. .	. .	. .	54.	49 2.16	19.17	2.05	.	3	22.802	37 30.61	28.06	5.35	48 40.94	34 4.02
65	8	. .	12.	. .	. .	. .	20.5	. .	53 46.39	19.15	2.05	.	3	23.440	36 51.65	28.28	5.21	53 25.19	33 25.14
66	.	. .	. .	. .	. .	. .	33.	. .	12 54 58.68	−19.15	−1.34	.	6	43.554	−15 42.98	−28.33	− 1.50	12 54 38.19	−26 12 12.81

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1848. h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(161) 35. Transit over T. IV assumed to have been recorded as over T. III. Minutes of transit assumed as 48.

(161) 40. Minutes assumed as 59, not 58.

(161) 46. Minutes assumed as 0.

(161) 47. Minutes assumed as 2 instead of 4.

(161) 60. Micrometer reading assumed as $12^r.760$, not $19^r.760$, to agree with Arg. Z. 292, 80; 380, 10; and Mer. Circle, 1847, May 14.

(161) 61. Revolutions of micrometer instead of horizontal thread assumed as 10.

(161) 62. Minutes assumed as 44.

ZONE 162. APRIL 1. C. $D_0 = -26° 26' 10''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	. .	8.	24.5	42.1	59.5	. .	9 59 24.95	−22.03	−1.37	IV.	5	52.192	− 6 40.85	− 3.09	+ 0.14	9 59 1.55	−26 32 53.81
2	8.9	. .	17.4	. .	51.8	9.	. .	. .	10 2 51.82	22.03	1.91	IV.	2	16.898	43 37.64	3.64	− 6.48	10 2 27.88	27 9 57.76
3	8.9	. .	6.7	24.1	41.3	. .	. .	. .	5 41.39	22.03	1.34	III.	5	53.706	5 5.53	4.10	+ 0.42	5 18.02	26 31 19.21
4	9	. .	38.2	56.4	13.3	31.2	. .	. .	7 13.44	22.03	1.95	IV.	2	13.766	46 54.12	4.33	− 7.08	6 49.46	27 13 15.53
5	8	. .	. .	. .	. .	39.7	56.8	. .	8 22.42	22.03	1.38	IV.	5	51.261	7 39.36	4.52	0.05	7 59.01	26 33 53.93
6	8.9	. .	. .	. .	. .	. .	49.8	8.	9 15.72	22.03	1.51	VI.	4	43.421	15 50.18	4.66	1.51	8 52.18	42 6.35
7	8	. .	. .	4.3	21.5	39.	. .	. .	11 21.60	22.04	1.60	IV.	3	37.634	22 1.05	4.99	2.58	10 57.96	48 18.62
8	9	. .	. .	. .	34.	51.4	8.8	. .	13 34.12	22.04	1.59	V.	3	38.130	21 29.74	5.34	2.48	13 10.49	26 47 47.56
9	9	. .	. .	19.5	. .	54.5	. .	. .	16 36.95	22.04	1.98	IV.	2	11.606	49 9.69	5.81	7.48	16 12.93	27 15 32.98
10	8.9	. .	. .	. .	38.2	. .	. .	. .	17 38.08	22.04	1.48	IV.	5	45.369	13 49.23	5.96	− 1.15	17 14.56	26 40 6.34
11	8.9	. .	. .	. .	. .	. .	43.5	. .	18 9.01	22.04	1.33	VI.	5	54.015	4 46.13	5.05	+ 0.46	17 45.64	31 0.72
12	8.9	. .	. .	. .	. .	. .	. .	. .	18	22.04	1.65	VII½.	3	34.361	25 25.43	5.05	− 3.18		51 38.61
13	9	. .	28.2	. .	. .	. .	37.	. .	22 2.71	22.04	1.39	VI.	5	49.864	9 6.68	6.65	0.30	21 39.28	35 23.63
14	9.10	. .	2.5	. .	36.	. .	11.7	. .	23 36.77	22.04	1.55	IV.	5	40.541	18 52.21	6.89	2.04	23 13.18	26 45 11.14
15	9.10	. .	21.7	39.	56.8	. .	. .	. .	26 56.50	22.04	1.81	III.	3	23.068	37 14.93	7.40	5.31	26 12.65	27 3 37.64
16	6	. .	28.8	46.	3.5	21.	38.2	. .	30 3.53	22.04	1.66	IV.	3	33.388	26 27.62	7.87	3.37	29 39.83	26 52 48.86
17	9	. .	. .	26.5	43.5	1.5	. .	. .	32 43.78	22.04	1.90	IV.	2	16.691	43 50.75	8.27	6.52	32 19.84	27 10 15.54
18	8	. .	3.4	20.7	37.2	55.	. .	. .	35 37.77	22.04	1.48	IV.	5	44.762	14 27.16	8.71	1.24	35 14.25	26 40 47.11
19	9.10	. .	. .	. .	54.	. .	28.3	. .	35 53.86	22.04	1.52	IV.	5	42.076	17 15.82	8.75	1.76	35 30.30	43 36.33
20	9.10	. .	. .	. .	19.5	. .	. .	. .	38 19.38	22.04	1.44	IV.	5	46.722	12 24.12	9.10	0.89	37 55.90	38 44.11
21	8.9	. .	. .	. .	1.5	19.3	36.	. .	39 1.67	22.04	1.45	V.	5	47.092	12 0.96	9.21	0.83	38 38.18	26 38 21.00
22	7	. .	39.8	57.	13.8	31.6	48.8	. .	42 14.23	22.04	1.84	IV.	2	19.262	41 9.64	9.70	6.03	41 50.35	27 7 35.37
23	9	. .	57.	14.5	31.3	. .	. .	. .	44 31.61	22.03	1.81	III.	2	21.262	39 3.89	10.00	5.65	44 7.77	27 5 29.54
24	8	. .	. .	57.2	14.8	32.6	. .	. .	45 14.87	22.03	1.54	IV.	3	39.276	20 18.12	10.12	2.27	44 51.30	26 46 40.51
25	9	. .	. .	. .	7.2	. .	42.2	. .	46 7.40	22.03	1.37	IV.	5	49.827	9 9.13	10.23	0.30	45 44.00	26 35 29.66
26	8	. .	29.8	47.6	4.7	. .	. .	. .	49 4.69	22.03	1.75	III.	3	25.355	34 51.66	10.65	4.88	48 40.91	27 1 17.19
27	9	. .	. .	. .	41.5	. .	16.5	. .	53 41.70	22.03	1.46	IV.	5	44.816	14 23.70	11.09	1.23	52 18.21	26 40 46.02
28	8	. .	52.2	9.4	26.5	. .	1.1	. .	57 26.68	22.03	1.49	IV.	5	42.985	16 18.69	11.63	− 1.58	56 3.16	42 41.90
29	4	. .	45.3	12.4	30.	. .	. .	. .	59 29.93	22.02	1.28	III.	5	55.965	2 43.69	11.93	+ 0.83	58 6.63	29 4.79
30	5	. .	. .	. .	4.8	22.	39.5	. .	10 59 4.86	22.02	1.28	V.	5	56.362	2 19.07	12.00	+ 0.90	10 58 41.56	26 28 40.17
31	5	. .	17.8	35.2	52.5	9.5	27.2	. .	11 1 52.46	22.02	1.98	IV.	2	11.206	49 34.77	12.36	− 7.58	11 1 28.46	27 16 4.71
32	9	. .	. .	. .	. .	. .	. .	6.	3 14.11	22.02	1.49	VII.	5	42.598	16 42.66	12.53	− 1.64	2 50.60	26 43 6.83
33	9	. .	. .	. .	49.	6.5	. .	. .	7 49.12	22.01	1.29	V.	5	55.562	3 9.32	13.10	+ 0.78	7 25.82	26 29 31.64
34	8	. .	2.2	19.8	. .	. .	. .	. .	9 37.16	22.01	2.01	III.	2	8.666	52 13.65	13.32	− 8.08	9 13.14	27 18 45.05
35	9.10	. .	13.8	. .	48.7	. .	. .	. .	12 48.54	22.01	1.69	IV.	3	29.215	30 49.37	13.69	4.14	12 24.84	26 57 17.20
36	9	. .	. .	23.9	41.1	. .	16.2	. .	13 41.34	22.00	1.46	IV.	5	44.364	14 52.31	13.80	1.30	13 17.88	41 17.41
37	9	. .	. .	. .	. .	. .	. .	. .	14	22.00	1.68	VII½.	3	29.392	30 37.08	13.81	4.10	14	57 4.99
38	9	. .	. .	24.	. .	. .	16.5	. .	18 41.72	21.99	1.49	IV.	5	42.258	17 4.52	14.38	1.70	18 18.24	43 30.60
39	9	. .	. .	8.3	. .	43.	. .	. .	19 25.72	21.99	1.52	IV.	5	40.198	19 13.74	14.45	2.09	19 2.21	45 40.28
40	9	. .	. .	1.	. .	. .	. .	. .	21 18.35	21.99	1.59	III.	4	35.578	24 1.34	14.67	2.96	20 54.77	50 28.97
41	9	. .	. .	. .	53.	0.7	17.4	. .	21 43.07	21.99	1.67	V.	3	30.515	29 27.63	14.72	3.90	21 19.41	26 55 56.25
42	7	. .	. .	. .	. .	. .	10.5	28.	22 35.85	21.99	1.92	VI.	2	13.892	46 46.40	14.82	7.07	22 11.94	27 13 18.29
43	9	. .	2.	18.8	. .	. .	. .	. .	25 36.43	21.98	1.65	III.	3	31.328	28 36.93	15.15	3.75	25 12.80	26 55 5.83
44	9	. .	. .	. .	54.	10.	. .	. .	25 53.30	21.98	1.55	V.	4	38.268	21 13.36	15.18	2.45	25 29.77	26 47 40.99
45	9	. .	. .	. .	. .	. .	. .	. .	26	21.97	1.80	VII.	3	21.482	38 53.59		5.63	26	27
46	9	. .	. .	. .	. .	42.	. .	. .	29 24.63	21.97	1.75	V.	3	24.632	35 36.64	15.56	− 5.03	29 0.91	27 2 7.23
47	9	. .	. .	. .	. .	. .	32.	50.	31 57.82	21.96	1.29	VI.	5	55.050	3 41.15	15.82	+ 0.68	31 34.57	26 30 6.29
48	9	. .	33.	. .	8.2	. .	42.5	. .	34 7.97	21.95	1.92	IV.	2	13.738	46 55.88	16.06	− 7.11	33 44.10	27 13 29.05
49	8	. .	. .	9.2	25.8	43.	. .	. .	11 35 26.03	−21.95	−1.44	IV.	5	44.891	−14 19.00	−16.19	− 1.20	11 35 2.64	−26 40 46.39

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Apr. 1,	0	. .	. .	. .	. .	. .	359 59 56.92	30.0060

INSTRUMENT READINGS.

	Date.		Circle. A		B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″							″	in.	°	°	°	°	°
Zone 162	Apr. 1,	10 0	75 47	31.1 31.2	22.2 21.8	28.2 30.1	34.1 35.8	21.9 22.1	33.8 33.8	28.55 29.13	30.292	56.5	46.5	53.0	55.8	61.2
		10 20		. .	. .	. .	. .	. .	. .	. .	. .	. .	45.6			
		10 40		. .	. .	. .	. .	. .	. .	. .	. .	. .	44.7			
		11 0		32.9 32.9	22.0 21.1	29.6 31.	33.9 35.3	22.1 22.3	34.8 35.5	29.22 29.68	30.310	. .	43.5	49.6	53.8	
		11 21		. .	. .	. .	. .	. .	. .	. .	. .	. .	43.0			
		11 40		. .	. .	. .	. .	. .	. .	. .	30.314	52.9	43.1			

REMARKS.

(162) 27. Minutes assumed as 52, not 53.
(162) 28. Minutes assumed as 56, not 57.
(161) 29. Time of transit over T. II assumed as 55ˢ.3 instead of 45ˢ.3.
(162) 31. Minutes of transit assumed as 58, not 59.
(162) 36. Declination differs 5′ from Arg. Z. 291, 22; probably micrometer 5′ in error.
(162) 41. Time of transit over T. IV assumed as 43ˢ instead of 53ˢ.

ZONE 162. APRIL 1. C. $D_\circ = -26° 26' 10''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9.10	. .	34.	51.5	. .	. .	. .	. .	11 37 8.82	−21.94	−1.36	III.	5	49.670	− 9 18.99	−16.37	− 0.31	11 36 45.52	−26 35 45.67
51	9.10	. .	. .	. .	. .	30.3	47.4	. .	37 12.83	21.94	1.89	V.	2	15.408	45 11.52	16.38	6.77	36 49.00	27 11 44.67
52	7	. .	37.5	55.	12.5	29.5	46.2	. .	39 12.16	21.94	1.82	IV.	2	19.156	41 16.22	16.59	6.07	38 48.40	27 7 48.88
53	9	. .	. .	29.	. .	3.5	20.5	. .	41 46.24	21.94	1.51	IV.	5	45.088	14 6.76	16.85	1.21	41 22.79	26 40 34.82
54	9	. .	. .	. .	39.3	. .	13.8	. .	42 39.26	21.93	1.50	V.	4	40.899	18 28.05	16.94	1.96	42 15.83	44 56.95
55	9	. .	. .	. .	0.3	18.2	. .	. .	48 0.52	21.92	1.63	V.	3	32.295	27 36.01	17.47	3.58	47 36.97	54 7.06
56	9	. .	. .	. .	. .	. .	13.7	. .	48 39.22	21.92	1.39	V.	5	47.922	11 8.73	17.54	0.64	48 15.91	37 36.91
57	6.7	. .	19.1	36.	53.	. .	. .	. .	50 53.35	21.92	1.57	III.	3	35.498	24 15.21	17.76	2.98	50 29.86	50 45.95
58	9	. .	. .	. .	29.	46.2	. .	. .	51 28.95	21.91	1.36	V.	5	49.271	9 44.23	17.82	− 0.39	51 5.69	36 12.44
59	9	. .	. .	12.	28.8	. .	. .	. .	53 29.07	21.90	1.32	III.	5	52.257	6 36.71	18.01	+ 0.17	53 5.85	33 4.55
60	9	. .	. .	39.7	56.2	. .	. .	. .	11 54 56.56	21.89	1.54	III.	3	37.498	22 9.71	18.15	− 2.59	54 33.13	48 40.45
61	9	. .	. .	43.2	. .	. .	. .	. .	12 0 0.65	21.88	1.38	III.	5	52.041	6 50.14	18.64	+ 0.13	59 37.39	33 18.65
62	9	. .	. .	. .	. .	. .	. .	. .	0	21.88	1.45	.	4	43.1				59	
63	9	. .	. .	. .	. .	27.2	44.	. .	0 9.76	21.88	1.45	V.	4	43.139	16 7.57	18.65	− 1.53	11 59 46.43	26 42 37.75
64	7	. .	57.3	14.8	32.	49.	6.5	. .	12 3 31.95	−21.87	−1.91	IV.	2	13.409	−47 16.69	−18.98	− 7.19	12 3 8.17	−27 13 52.85

ZONE 163. APRIL 20. C. $D_\circ = -25° 11' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	. .	55.5	. .	29.3	. .	10 41 55.28	+10.19	+0.55	IV.	2	15.645	−50 10.25	− 1.06	−16.49	10 42 6.02	−26 1 27.80
2	8	. .	46.3	4.1	20.9	. .	55.	. .	45 20.90	10.19	0.67	IV.	3	24.454	35 48.11	1.44	13.99	45 31.76	25 47 3.54
3	7	. .	. .	19.8	37.	54.	. .	. .	46 36.89	10.19	0.56	IV.	2	14.922	45 41.51	1.59	15.71	46 47.64	25 56 58.87
4	8	. .	. .	. .	16.8	34.	51.	. .	47 16.74	10.19	0.47	V.	2	11.408	49 22.35	1.66	16.34	47 27.40	26 0 40.35
5	8.9	. .	. .	. .	. .	. .	49.3	. .	47 15.21	10.19	0.84	VI.	4	37.585	21 56.40	1.66	11.65	47 26.24	25 33 9.71
6	8	. .	25.4	43.	0.1	17.5	34.5	. .	52 0.13	10.19	0.53	IV.	2	13.991	46 40.00	2.18	15.87	52 10.85	25 57 58.05
7	6	. .	24.	41.3	58.2	15.7	32.6	. .	54 58.38	10.18	0.45	IV.	2	10.869	49 55.71	2.50	16.43	55 9.01	26 1 14.64
8	9.10	. .	. .	. .	24.2	41.3	59.2	. .	10 57 41.54	10.18	0.43	V.	2	9.128	51 45.18	2.76	16.75	10 57 52.15	26 3 4.69
9	7	. .	. .	. .	27.5	44.3	1.8	19.2	11 4 27.57	10.18	0.99	V.	5	50.951	7 58.57	3.50	9.29	11 4 38.74	25 19 11.36
10	7.8	. .	. .	. .	. .	59.2	. .	. .	5 42.09	10.18	0.75	V.	3	32.132	27 46.18	3.63	12.62	5 53.02	39 2.43
11	8	. .	. .	48.2	. .	22.5	39.5	56.5	7 5.47	10.18	1.03	IV.	5	54.512	4 15.20	3.77	8.65	7 16.68	15 27.62
12	9	. .	24.5	42.2	59.3	. .	. .	. .	10 59.14	10.18	0.61	III.	3	24.882	35 21.09	4.17	13.92	11 9.93	46 39.18
13	8	. .	. .	. .	53.	10.2	27.5	. .	12 53.16	10.18	0.96	V.	5	50.221	8 44.59	4.36	9.42	13 4.30	19 58.37
14	9	. .	. .	25.6	42.7	59.3	. .	. .	14 42.48	10.18	0.54	IV.	2	21.286	39 2.70	4.53	14.57	14 53.20	25 50 21.80
15	9	. .	. .	24.5	42.	. .	. .	. .	17 41.86	10.18	0.38	III.	2	9.357	51 30.51	4.83	16.73	17 52.42	26 2 52.07
16	8.9	. .	33.8	. .	7.7	. .	. .	. .	21 7.86	10.19	0.77	III.	4	38.688	20 46.05	5.15	11.46	21 18.82	25 32 2.66
17	8.9	. .	42.	. .	16.1	33.	. .	. .	21 16.08	10.19	0.81	IV.	5	41.018	18 22.15	5.16	11.04	21 27.08	29 38.35
18	9	. .	. .	. .	. .	4.	21.1	38.5	22 47.06	10.19	0.76	V.	5	38.575	20 55.60	5.30	11.48	22 58.01	32 12.38
19	6	. .	. .	. .	46.	3.4	20.1	. .	24 46.19	10.19	0.46	V.	2	16.668	43 52.38	5.49	15.40	24 56.84	55 13.27
20	9	. .	. .	. .	57.3	. .	32.3	. .	25 57.69	10.19	0.64	VI.	3	29.458	30 33.75	5.59	13.10	26 8.52	41 52.44
21	9	. .	. .	26.2	32.8	. .	. .	. .	28 43.07	10.19	0.44	III.	2	16.178	44 22.67	5.85	15.49	28 53.70	55 44.01
22	9.10	. .	. .	25.	42.	. .	. .	. .	30 42.05	10.19	0.82	III.	5	42.752	16 33.19	6.03	10.73	30 53.06	27 49.95
23	8	. .	. .	20.8	37.3	55.	. .	. .	31 37.65	10.19	0.43	IV.	2	16.314	44 14.52	6.11	15.46	31 48.27	55 36.09
24	8	. .	. .	. .	18.2	35.7	52.7	. .	32 18.39	10.19	0.54	V.	3	23.116	37 11.73	6.17	14.23	32 29.12	48 32.13
25	8	. .	. .	25.3	42.5	0.	. .	. .	33 42.55	10.19	0.51	IV.	3	21.486	38 54.21	6.29	14.53	33 53.25	25 50 15.03
26	9.10	. .	. .	3.5	. .	. .	. .	. .	36 20.76	10.20	0.33	III.	2	9.186	51 41.11	6.52	16.76	36 31.29	26 3 4.39
27	9.10	. .	. .	18.2	35.3	. .	. .	. .	37 35.31	10.20	0.84	III.	5	46.119	13 1.91	6.63	10.14	37 46.35	25 24 18.68
28	3	9.3	26.	43.3	0.3	17.3	34.4	51.5	41 0.28	10.20	0.43	IV.	2	16.918	43 36.45	6.92	15.35	41 10.91	25 54 58.72
29	8	. .	. .	30.5	47.3	4.2	. .	. .	45 47.28	10.20	0.34	IV.	2	11.648	49 6.99	7.31	16.30	45 57.82	26 0 30.60
30	9	. .	9.5	26.5	. .	51.2	8.2	. .	11 49 43.92	+10.21	+0.58	II.	3	29.256	−30 46.80	− 7.53	−13.13	11 48 54.71	−25 42 7.46

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Apr. 20,	0	. .	. .	. .	. .	. .	359 59 57.28	30.0131

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 162	Apr. 1,	12 0	75 47 {31.0 / 30.7	24.1 / 23.5	30.2 / 30.9	35.5 / 36.1	23.0 / 23.0	34.8 / 34.9	29.77 / 29.85	30.320	52.5	41.7	48.8	52.8	60.0
Zone 163	Apr. 20,	10 41	. .	. .	. .	. .	. .	. .	. .	30.230	51.5	43.5			
		11 0	74 32 {30.4 / 30.7	24.1 / 22.9	31.5 / 32.3	35.0 / 35.9	21.8 / 20.9	29.5 / 30.1	28.76	. .	. .	43.	50.2	51.0	52.8
		11 23	. .	. .	. .	. .	. .	. .	. .	. .	. .	41.2			
		11 40	. .	. .	. .	. .	. .	. .	. .	30.222	50.2	40.4			
		12 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	41.8			
		12 20	. .	. .	. .	. .	. .	. .	. .	30.218	49.5	41.3			

REMARKS.

(163) 1. Micrometer reading assumed as $10^{r}.645$, not $15^{r}.645$.

(163) 8. Transit observations discordant and recorded over T.'s IV, V, and VI instead of T.'s III, IV, and V; the record over T. IV rejected.

(163) 18. Right ascension 1^{m} discordant from Arg. Z. 291, 33; probably 23^{m}.

(163) 19. Time of transits over T. V assumed as $3^{s}.4$ instead of $5^{s}.4$.

(163) 28. Time of transit over T. VI assumed as $34^{s}.4$ instead of $31^{s}.4$.

(163) 30. Transits over T.'s V and VII assumed as at $1^{s}.2$ and $18^{s}.2$ instead of $51^{s}.2$ and $8^{s}.2$, respectively, and minutes as 48, not 49.

ZONE 163. APRIL 20. C. $D_0 = -25° 11' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ″ ′
31	9.10	. .	9.5	26.2	. .	. .	. .	. .	11 49 43.60	+10.21	+0.64	III.	3	33.671	−26 9.74	− 7.63	−12.35	11 49 54.45	−25 37 29.72
32	9	. .	. .	. .	. .	. .	. .	36.	49 44.62	10.21	0.58	VII.	3	29.584	30 25.35	7.63	13:08	49 55.41	41 46.06
33	9	. .	59.3	. .	33.5	. .	. .	. .	52 33.50	10.21	0.54	II.	4	38.698	20 44.86	7.84	11.46	52 44.25	32 4.16
34	8.9	. .	. .	53.2	10.5	. .	. .	. .	53 10.36	10.21	0.61	III.	3	32.516	27 22.32	7.89	12.55	53 21.18	38 42.76
35	8.9	. .	. .	. .	11.1	. .	45.5	. .	54 11.18	10.22	0.37	VI.	2	15.949	44 37.47	7.97	15.53	54 21.77	56 0.97
36	9.10	. .	. .	14.7	31.3	. .	. .	. .	57 31.55	10.22	0.44	III.	2	20.938	39 24.02	8.22	14.63	57 42.21	50 46.87
37	9	. .	. .	. .	28.3	. .	3.	. .	11 58 38.54	10.23	0.66	VI.	3	37.171	22 29.67	8.30	11.73	11 58 49.43	33 49.70
38	9	. .	. .	50.	7.	24.5	. .	. .	12 0 7.21	10.23	0.81	IV.	4	48.268	10 45.37	8.41	9.74	12 0 18.25	22 3.52
39	9	. .	47.3	5.	22.	. .	. .	. .	6 21.93	10.24	0.85	III.	5	52.649	6 11.97	8.83	8.96	6 33.02	17 29.76
40	9	. .	. .	. .	43.8	1.	18.	. .	6 43.86	10.24	0.82	V.	4	47.931	12 9.72	8.86	10.00	6 54.92	23 28.58
41	8	. .	. .	. .	. .	20.3	37.2	. .	8 3.14	10.24	0.50	V.	3	27.728	32 22.36	8.95	13.41	8 13.88	43 44.72
42	7	. .	. .	. .	55.	11.6	28.5	. .	8 54.56	10.24	0.48	V.	3	25.787	34 24.11	9.01	13.77	9 5.28	45 46.89
43	9	. .	. .	40.7	. .	. .	31.2	. .	10 57.52	10.24	0.75	VI.	5	46.379	12 45.70	9.15	10.09	11 8.51	24 4.94
44	9	. .	. .	. .	. .	. .	. .	19.	11 27.69	10.24	0.86	VII.	5	53.907	4 52.59	9.18	8.73	11 38.79	16 10.50
45	8	. .	. .	. .	. .	34.5	51.3	. .	13 17.19	10.24	0.36	V.	2	17.928	42 33.24	9.30	15.19	13 27.79	53 57.73
46	8	. .	48.5	5.5	22.	. .	56.5	. .	15 22.44	10.25	0.57	IV.	3	32.889	26 58.68	9.43	12.49	15 33.26	38 20.60
47	9.10	. .	25.2	. .	0.3	. .	. .	. .	17 59.86	10.25	0.51	III.	3	28.942	31 6.37	9.60	13.20	18 10.62	42 29.17
48	8	. .	. .	. .	. .	44.	1.	. .	17 26.78	10.25	0.35	IV.	2	18.412	42 2.94	9.57	15.10	17 37.39	53 27.61
49	8.9	. .	50.	7.	24.6	. .	. .	. .	21 24.34	10.26	0.68	III	5	42.148	17 11.23	9.81	10.82	21 35.28	28 31.86
50	9	. .	. .	. .	52.	9.3	26.3	. .	21 52.10	10.26	0.59	V.	4	35.761	23 50.50	9.84	11.97	22 2.95	35 12.31
51	8	. .	. .	39.2	. .	13.5	30.3	. .	26 56.27	10.27	0.33	V.	2	18.787	41 39.37	10.13	15.04	27 6.87	53 4.54
52	9	. .	8.7	25.2	42.3	. .	. .	. .	30 42.51	10.29	0.48	IV.	3	29.928	30 4.45	10.35	13.02	30 53.28	25 41 27.82
53	9	. .	2.2	19.	36.3	. .	. .	. .	32 36.39	10.29	0.23	III.	2	11.825	48 55.52	10.44	16.30	32 46.91	26 0 22.26
54	9	. .	44.2	2.2	19.3	. .	. .	. .	35 19.02	10.30	0.50	II.	3	31.702	28 13.15	10.59	12.69	35 29.82	25 39 36.43
55	7.8	. .	. .	. .	24.	40.7	57.6	. .	35 23.68	10.30	0.64	V.	4	41.981	17 20.21	10.59	10.85	35 34.62	25 28 41.65
56	9	. .	. .	. .	. .	43.	0.5	. .	36 25.94	10.30	0.15	V.	2	7.564	53 23.34	10.64	17.08	36 36.39	26 4 51.06
57	9	. .	43.5	. .	18.	. .	. .	. .	42 17.91	10.31	0.33	II.	3	21.350	39 2.76	10.93	14.57	42 28.55	25 50 28.26
58	9	. .	. .	. .	53.2	11.	. .	. .	42 53.48	10.31	0.49	V.	3	33.186	26 40.04	10.96	12.44	43 4.28	38 3.44
59	9	. .	. .	. .	56.	. .	. .	. .	43 55.87	10.32	0.49	IV.	3	32.938	26 55.59	11.01	12.48	44 6.68	38 19.08
60	6	. .	. .	. .	. .	. .	21.	38.5	43 46.85	10.32	0.26	VI.	2	16.602	43 56.65	11.00	15.42	43 57.43	55 23.07
61	7	. .	. .	59.	. .	33.	50.	. .	49 15.99	10.34	0.47	IV.	3	32.527	27 21.57	11.25	12.55	49 26.80	38 45.37
62	9	. .	43.	. .	. .	34.5	52.	. .	49 17.53	10.34	0.37	IV.	3	25.260	34 57.49	11.25	13.86	49 28.24	46 22.60
63	8.9	. .	. .	48.5	5.4	23.2	. .	. .	54 5.65	10.35	0.19	IV.	2	13.899	46 45.71	11.45	15.93	54 16.19	58 13.09
64	9	. .	31.	. .	. .	. .	39.3	. .	56 5.28	10.36	0.27	II.	2	19.185	41 13.64	11.54	14.96	56 15.91	52 40.14
65	8	. .	34.2	. .	8.2	25.	42.7	. .	12 56 8.28	10.36	0.43	IV.	3	30.960	28 59.70	11.54	12.83	12 56 19.07	40 24.07
66	6.7	28.3	45.3	2.6	19.7	36.6	54.	11.2	13 3 19.67	10.37	0.35	IV.	3	26.426	33 44.40	11.82	13.65	13 3 30.39	45 9.87
67	9.10	. .	. .	. .	. .	. .	51.	. .	4 16.91	10.38	0.57	VI.	5	42.087	17 15.00	11.85	10.84	4 27.86	28 37.69
68	9	. .	. .	. .	. .	40.7	57.5	. .	5 23.48	10.39	0.37	V.	3	28.516	31 33.11	11.89	13.27	5 34.24	42 58.27
69	9.10	. .	. .	2.	. .	. .	. .	. .	8 19.18	10.40	0.26	III.	3	21.154	39 15.05	11.99	14.61	8 29.84	25 50 41.65
70	9.10	. .	. .	35.5	. .	. .	. .	. .	9 52.76	10.40	0.10	III.	2	9.344	51 31.33	12.04	16.78	10 3.26	26 3 0.15
71	9	. .	. .	46.5	3.2	. .	. .	. .	11 3.40	10.41	0.59	III.	5	44.788	14 25.40	12.08	10.34	11 14.40	25 25 47.82
72	9	. .	. .	29.8	46.8	. .	. .	. .	15 46.82	10.42	0.44	III.	3	35.229	24 32.09	12.21	12.07	15 57.68	35 56.37
73	8.9	. .	. .	23.5	. .	. .	. .	. .	17 40.68	10.43	0.26	III.	2	22.375	37 54.07	12.27	14.39	17 51.37	49 20.73
74	8.9	. .	. .	. .	. .	2.8	19.5	. .	17 45.60	10.43	0.59	V.	4	46.348	12 46.26	12.27	10.07	17 56.62	24 8.60
75	8	. .	. .	17.8	34.9	52.	. .	. .	19 34.87	10.44	0.41	IV.	3	33.909	25 54.64	12.32	12.29	19 45.72	37 19.25
76	9	. .	. .	4.6	21.3	. .	. .	. .	21 21.48	10.44	0.27	IV.	2	24.114	36 5.17	12.36	14.07	21 32.19	47 31.60
77	9	. .	. .	. .	. .	. .	. .	19.5	21 28.19	10.44	0.68	VII.	5	53.312	5 30.21	12.36	8.82	21 39.31	16 51.39
78	8	. .	. .	. .	24.	41.3	. .	. .	23 24.10	10.45	0.63	IV.	4	49.899	9 2.79	12.41	9.43	23 35.18	20 24.63
79	9	. .	. .	. .	. .	. .	16.2	. .	13 23 42.07	+10.45	+0.71	VI.	5	56.018	− 2 40.36	−12.42	− 8.35	13 23 53.23	−25 14 1.13

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(163) 40. Micrometer reading assumed as $46^r.931$, not $47^r.931$.

(163) 45. Time of transit over T. V assumed as $34^s.5$ instead of $31^s.5$.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 163	Apr. 20, 12 30	74 32 {30.4 30.2	24.2 23.2	31.9 33.1	31.9 36.6	22. 22.2	28.2 28.9	28.56	. .	. .	. .	50.2	49.5	
	12 40	. .	. .	. .	. .	. .	. .	. .	30.218	49.4	41.2			
	13 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	41.			
	13 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	40.5			
	13 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	40.3			
	14 0	29.8 30.2	24.7 23.4	31.9 33.8	33.9 35.6	21.6 21.5	29.2 29.2	28.73	30.200	47.5	40.	49.	46.5	52.2

ZONE 163. APRIL 20. C. $D_\circ = -25° 11' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
80	9	. .	44.	1.3	. .	35.9	52.9	. .	13 28 18.59	+10.47	+0.30	IV.	3	27.688	−32 25.06	−12.52	−13.43	13 28 29.36	−25 43 51.01
81	8.9	. .	44.2	1.5	. .	36.	53.1	. .	28 18.77	10.47	0.30	IV.	3	27.859	32 14.27	12.52	13.39	28 29.54	43 40.18
82	8	. .	20.3	37.3	54.	12.	. .	. .	32 54.46	10.48	0.26	IV.	3	25.456	34 45.25	12.59	13.82	33 5.20	25 46 11.66
83	9.10	. .	. .	47.	4.	. .	. .	. .	36 4.10	10.49	0.05	III.	2	10.876	49 55.02	12.65	16.49	36 14.64	26 1 24.16
84	7	. .	30.	47.	3.7	21.1	37.3	. .	37 3.89	10.50	0.59	IV.	5	48.752	10 16.69	12.66	9.63	37 14.98	25 21 38.98
85	8.9	. .	58.	15.	32.	. .	. .	. .	39 32.13	10.51	0.41	IV.	3	37.628	22 1.43	12.70	11.63	39 43.05	33 25.76
86	8	. .	17.8	. .	52.5	. .	. .	. .	40 52.26	10.52	0.38	IV.	3	35.269	24 29.53	12.72	12.06	41 3.16	35 54.31
87	9	. .	. .	2.	19.5	. .	. .	. .	43 19.34	10.53	0.64	IV.	5	54.552	4 12.67	12.74	8.60	43 30.51	15 34.01
88	8	. .	. .	47.5	4.2	21.5	38.8	. .	45 4.42	10.54	0.08	IV.	2	14.218	46 25.90	12.76	15.88	45 15.04	57 54.54
89	8.9	. .	. .	25.2	42.	. .	16.3	. .	46 42.14	10.55	0.29	IV.	3	29.982	30 1.13	12.77	13.00	46 52.98	41 26.90
90	7	. .	. .	3.5	20.3	37.4	54.6	. .	49 20.48	10.56	0.63	IV.	5	54.295	4 28.87	12.79	8.65	49 31.67	15 50.31
91	8	. .	22.6	39.4	56.8	13.8	30.8	. .	51 56.73	10.56	0.41	IV.	3	39.179	20 24.16	12.80	11.36	52 7.70	31 48.32
92	9	. .	23.	40.7	. .	. .	. .	. .	56 57.66	10.58	0.10	III.	4	18.427	41 57 36	12.82	15.12	57 8.34	53 25.30
93	9	. .	. .	. .	19.2	. .	53.5	10.8	57 36.44	10.59	0.13	IV.	2	20.299	40 4.59	12.82	14.77	57 47.16	51 32.18
94	4	. .	. .	. .	23.	. .	56.5	13.8	57 39.68	10.59	0.05	IV.	2	14.679	45 56.93	12.82	15.80	13 57 50.32	57 25.55
95	9	. .	. .	32.7	49.5	. .	. .	. .	59 49.67	10.59	0.06	IV.	2	15.849	44 43.43	12.83	15.59	14 0 0.32	56 11.85
96	9	. .	. .	. .	. .	. .	16.	. .	13 59 41.91	10.59	0.30	VI.	3	33.239	26 36.46	12.83	12.42	13 59 52.80	38 1.71
97	9	. .	. .	. .	. .	. .	48.7	. .	14 0 14.62	10.60	0.27	VI.	3	31.347	28 35.24	12.83	12.77	14 0 25.49	40 0.84
98	9	. .	3.	20.	37.2	. .	. .	. .	2 37.19	10.61	0.30	IV.	3	33.212	26 38.59	12.84	12.42	2 48.10	38 3.85
99	7	. .	. .	11.	28.2	45.5	. .	. .	14 4 28.18	+10.62	+0.08	IV.	2	17.661	−42 49.92	−12.84	−15.27	14 4 38.88	−25 54 18.03

ZONE 164. MAY 3. C. $D_\circ = -27° 41' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	0.4	17.7	35.2	. .	10.3	. .	12 16 35.32	+13.67	+0.60	IV.	3	34.498	−25 17.90	− 5.33	− 4.11	12 16 49.59	−28 6 47.34
2	8	. .	. .	. .	20.7	37.8	55.5	. .	19 20.54	13.67	0.71	V.	4	47.394	11 40.61	5.52	1.60	19 34.92	27 53 7.73
3	9.10	. .	. .	. .	5.2	. .	. .	. .	21 5.14	13.67	0.40	IV.	2	12.505	48 13.38	5.64	8.43	21 19.21	28 29 47.45
4	8.9	. .	. .	. .	41.3	58.3	16.6	. .	22 41.14	13.68	0.42	V.	2	13.338	47 21.33	5.66	8.28	21 55.24	28 55.27
5	9	. .	4.	21.3	39.3	56.2	. .	. .	33 38.95	13.69	0.60	IV.	3	31.452	28 29.09	6.41	4.71	33 53.24	28 10 0.21
6	9.10	. .	39.	. .	. .	. .	48.2	. .	36 13.73	13.69	0.70	VI.	4	41.189	18 10.23	6.57	2.79	36 28.12	27 59 39.59
7	9	. .	. .	. .	. .	. .	. .	27.7	35 35.23	13.69	0.76	VII.	5	47.832	11 13.93	6.53	1.52	35 49.68	52 41.98
8	8	. .	. .	. .	. .	19.5	36.4	54.4	37 1.85	13.70	0.73	V.	4	44.054	15 10.09	6.62	2.25	37 16.28	27 56 38.96
9	9	. .	. .	. .	35.7	. .	. .	. .	38 35.55	13.70	0.62	IV.	3	31.604	28 19.43	6.70	4.68	38 49.87	28 9 50.81
10	9	. .	19.3	37.	54.	12.	. .	. .	40 54.35	13.70	0.69	IV.	4	38.765	20 41.66	6.84	3.30	41 8.74	2 11.80
11	9	. .	14.	32.1	49.3	. .	. .	43.	42 49.58	13.70	0.53	IV.	2	20.308	40 4.03	6.94	6.39	43 3.81	21 37.86
12	9.10	. .	. .	46.	. .	21.2	38.7	. .	43 3.70	13.71	0.63	IV.	3	31.539	28 23.57	6.95	4.70	43 18.04	28 9 55.22
13	9	. .	. .	. .	. .	. .	. .	38.2	43 45.72	13.71	0.76	VII.	4	44.962	13 10.54	6.99	1.85	44 0.19	27 54 39.38
14	9	. .	. .	. .	. .	. .	. .	24.6	44 32.13	13.71	0.78	VII.	4	47.189	11 53.67	7.03	1.64	44 46.62	27 53 22.34
15	8	. .	25.3	42.8	59.3	17.7	. .	. .	48 0.05	13.71	0.70	IV.	3	37.846	21 47.60	7.27	3.48	49 14.46	28 3 18.35
16	7.8	. .	. .	45.3	2.3	20.7	37.4	. .	12 54 2.64	13.73	0.51	IV.	2	14.732	45 53.54	7.51	8.00	12 54 16.88	28 27 29.05
17	9.10	. .	13.7	. .	49.2	. .	. .	. .	13 2 48.94	13.74	0.81	II.	4	43.971	15 13.85	7.90	2.28	13 3 3.49	27 56 44.03
18	9	. .	56.	13.5	31.	48.3	5.8	. .	4 30.95	13.75	0.62	IV.	3	23.720	36 33.97	7.97	− 6.23	4 45.32	28 18 8.17
19	9	. .	. .	49.2	6.2	. .	. .	. .	7 6.48	13.75	0.92	III.	5	55.808	2 53.47	8.08	+ 0.01	7 21.15	27 44 21.54
20	9.10	. .	. .	. .	. .	. .	. .	6.6	7 13.85	13.75	0.59	V.	2	18.582	41 52.41	8.09	− 7.25	7 28.19	28 23 27.75
21	9	. .	39.2	. .	15.	. .	. .	. .	10 14.59	13.76	0.86	II.	5	47.728	11 20.59	8.21	1.56	10 29.22	27 52 50.36
22	8.9	. .	. .	10.7	. .	45.7	3.	. .	10 28.24	13.76	0.80	IV.	4	41.288	18 3.51	8.21	2.81	10 42.80	59 34.53
23	9.10	. .	57.2	15.8	. .	. .	. .	. .	16 32.86	13.77	0.88	III.	5	48.961	10 3.44	8.43	1.32	16 47.51	51 33.19
24	9	. .	. .	. .	45.	2.5	19.5	. .	13 16 44.89	+13.77	+0.94	V.	5	55.136	− 3 35.94	− 8.44	− 0.12	13 16 59.60	−27 45 4.50

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 3,	0	. .	. .	. .	. .	. .	359 59 56.82	30.0089

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 164	May 3,	12 12	. .	. .	. .	. .	. .	. .	. .	29.880	63.4	56.2			
		12 20	77 2 {32. / 31.8}	20.6 / 20.9	28.2 / 30.6	32.9 / 34.3	17.4 / 18.8	33.7 / 35.6	28.07	. .	. .	55.8	61.5	61.	60.7
		12 45	. .	. .	. .	. .	. .	. .	. .	. .	. .	54.8			
		13 0	. .	. .	. .	. .	. .	. .	. .	29.866	62.5	54.1			
		13 20	. .	. .	. .	. .	. .	. .	. .	29.866	62.	53.4			
		13 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.3			
		14 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.			
		14 20	. .	. .	. .	. .	. .	. .	. .	29.870	62.	52.			

REMARKS.

(163) 93. Transits over T.'s III, V, and VI assumed as recorded over T.'s IV, VI, and VII.

(163) 94. Transits over T.'s III, V, and VI assumed as recorded over T.'s IV, VI, and VII.

(164) 4. Minutes assumed as 21, not 22.

(164) 13. Micrometer reading assumed as 45r.962, not 44r.962, to agree with Arg. Z. 292, 86.

(164) 15. Minutes assumed as 49, not 48.

[(163) 92. Micrometer probably 2 18r.427.]

ZONE 164. MAY 3. C. $D_o = -27° 41' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
25	9.10	. .	. .	18.	35.7	. .	. .	. .	13 18 35.56	+13.78	+0.67	III.	2	24.838	−35 19.32	− 8.50	− 6.01	13 18 50.01	−28 16 53.83
26	9.10	. .	43.	0.2	17.	. .	. .	. .	21 17.57	13.79	0.74	IV.	3	31.441	28 29.78	8.59	4.72	21 32.10	10 3.09
27	9.10	. .	. .	. .	. .	. .	. .	33.	21 40.50	13.79	0.81	VII.	4	39.336	20 6.65	8.60	3.20	21 55.10	28 1 38.45
28	5	. .	26.	43.4	1.	18.4	35.8	53.5	24 0.99	13.80	0.88	IV.	5	45.625	13 33.04	8.66	1.96	24 15.67	27 55 3.66
29	9.10	. .	17.7	. .	53.	. .	. .	. .	26 52.90	13.80	0.63	IV.	2	18.879	41 33.40	8.74	7.19	27 7.33	28 23 9.33
30	9.10	. .	. .	. .	. .	. .	43.?	. .	27 8.11	13.81	0.68	VI.	2	21.861	38 26.62	8.75	6.60	27 22.60	28 20 1.97
31	8	. .	. .	. .	. .	54.8	12.2	30.2	28 37.49	13.81	0.89	V.	4	45.218	13 57.15	8.78	2.03	28 52.19	27 55 27.96
32	9	. .	. .	46.2	3.8	21.4	. .	. .	33 3.80	13.82	0.85	IV.	4	40.807	18 33.50	8 90	2.89	33 18.47	28 0 5.29
33	10	. .	. .	. .	16.2	. .	. .	. .	34 16.05	13.83	0.78	IV.	3	30.806	29 9.37	8.93	4.84	34 30.66	28 10 43.14
34	8.9	. .	. .	. .	15.7	. .	50.4	. .	35 15.56	13.83	0.91	IV.	5	46.156	12 59.76	8.95	1.86	35 30.30	27 54 30.57
35	10	. .	24.	. .	. .	. .	. .	. .	39 59.09	13.84	0.96	II.	5	49.388	9 36.56	9.05	1.25	40 13.89	27 51 6.86
36	6	. .	. .	5.3	. .	40.5	57.8	15.4	41 22.83	13.85	0.71	IV.	3	21.991	38 22.42	9.08	6.57	41 37.39	28 19 58.07
37	9	. .	9.5	28.2	45.5	. .	. .	. .	44 45.26	13.86	0.76	IV.	3	25.473	34 44.19	9.12	5.89	44 59.88	16 19.20
38	7	. .	. .	13.2	30.7	48.2	. .	23.5	45 30.78	13.86	0.89	IV.	5	40.816	18 34.76	9.14	2.89	45 55.53	28 0 6.79
39	6.7	. .	. .	16.	33.7	50.3	. .	25.5	45 33.30	13.86	0.99	VII.	5	50.889	8 2.02	9.14	0.94	45 48.15	27 49 32.10
40	8	. .	55.2	13.5	30.7	. .	. .	. .	48 30.67	13.87	0.95	IV.	4	46.665	12 25.87	9.18	1.76	48 45.49	27 53 56.81
41	9	. .	. .	. .	. .	19.3	36.5	. .	48 1.64	13.87	0.73	V.	2	22.372	37 54.75	9.17	6.50	49 16.24	28 19 30.42
42	9.10	. .	. .	48.7	. .	23.6	. .	. .	52 6.12	13.88	0.72	IV.	2	19.872	40 31.12	9.22	6.99	52 20.72	22 7.33
43	7.8	. .	. .	18.2	36.2	. .	11.3	. .	55 36.09	13.89	0.74	IV.	2	21.558	38 45.57	9.24	6.66	55 50.72	20 21.47
44	8	. .	. .	. .	0.3	. .	35.5	. .	56 0.38	13.90	0.72	IV.	2	17.638	42 51.36	9.25	7.44	56 15.00	24 28.05
45	10	. .	. .	34.2	. .	. .	. .	. .	13 58 51.76	13.91	0.78	III.	3	23.372	36 55.98	9.27	6.30	13 59 6.45	18 31.55
46	8.9	. .	8.2	25.7	43.4	. .	. .	. .	14 2 43.29	13.92	0.90	IV.	3	36.319	23 23.70	9.28	3.76	14 2 58.11	4 56.74
47	9	. .	. .	. .	10.2	28.	44.	. .	3 9.91	13.92	0.86	IV.	3	30.618	29 21.29	9.28	4.88	3 24.69	10 55.45
48	9.10	. .	1.5	18.3	. .	. .	. .	. .	5 36.35	13.93	0.68	III.	2	10.338	50 28.96	9.29	8.89	5 50.96	32 7.14
49	5	. .	. .	48.8	6.3	24.	41.4	. .	6 6.33	13.93	0.66	IV.	2	7.922	53 0.55	9.29	9.42	6 20.92	34 39.26
50	9	. .	. .	38.7	. .	. .	31.3	. .	8 56.33	13.94	0.75	IV.	2	17.992	42 29.10	9.29	7.38	9 11.02	24 5.77
51	9.10	. .	. .	. .	. .	. .	. .	. .	10	. .	0.79	IV.	2	21.083	39 15.30	9.29	6.77	10	20 51.36
52	9	. .	. .	. .	. .	. .	. .	13.5	10 20.77	13.95	0.78	V.	2	20.313	40 3.91	9.29	6.93	10 35.50	21 40.13
53	9	. .	. .	. .	13.5	1.5	18.3	. .	12 43.62	13.96	0.94	.	3	37.556	22 7.26	9.28	3.53	12 58.52	3 40.07
54	9.10	. .	. .	. .	. .	31.3	. .	. .	14 13.68	13.96	0.80	IV.	2	20.738	39 36.88	9.27	6.85	14 28.44	21 13.00
55	7.8	. .	. .	10.8	38.2	45.7	3.5	. .	16 28.30	13.97	0.87	.	3	28.978	31 4.12	9.26	5.19	16 43.14	12 38.57
56	8	. .	. .	51.8	9.	26.7	44.2	. .	20 9.14	13.98	0.77	.	2	15.788	44 47.32	9.24	7.83	20 23.89	28 26 24.39
57	9.10	. .	58.5	15.8	33.3	. .	. .	. .	23 33.39	14.00	1.03	.	5	43.424	15 51.21	9.20	2.37	23 48.42	27 57 22.78
58	9	. .	9.2	. .	44.2	. .	18.8	. .	27 44.13	14.02	0.79	.	2	15.730	44 50.96	9.15	7.84	27 58.94	28 26 27.95
59	9	. .	. .	. .	. .	. .	33.2	51.2	27 58.52	14.02	0.98	.	4	37.226	22 18.94	9.15	3.59	28 13.52	28 3 51.68
60	9.10	. .	. .	23.8	. .	58.	. .	. .	30 40.99	14.03	1.05	.	5	42.778	16 31.49	9.12	2.50	30 56.07	27 58 3.11
61	9	. .	20.	37.5	55.2	. .	. .	. .	32 55.07	14.04	0.94	III.	3	31.149	28 48.04	9.08	4.77	33 10.05	28 10 21.89
62	9	. .	. .	. .	6.5	24.	. .	. .	33 6.42	14.04	0.92	.	3	28.518	31 33.11	9.08	5.29	33 21.38	13 7.48
63	8	. .	14.3	32.8	49.8	7.7	25.	. .	40 49.94	14.07	0.84	.	2	17.592	42 54.32	8.93	7.46	41 4.85	28 24 30.71
64	8	. .	4.	21.2	38.8	. .	. .	. .	44 38.88	14.08	1.18	.	5	53.061	5 46.10	8.85	− 0.49	44 54.14	27 47 15.44
65	6.7	. .	. .	. .	13.2	30.8	48.1	. .	45 13.26	14.09	1.20	.	5	56.237	2 26.88	8.83	+ 0.13	45 28.55	27 43 55.58
66	7	. .	27.5	45.4	2.8	20.6	38.	. .	48 2.88	14.10	0.79	.	2	9.645	51 12.58	8.77	− 9.06	48 17.77	28 32 50.41
67	9	. .	. .	3.2	21.2	38.3	. .	. .	49 20.88	14.11	1.03	.	4	35.194	24 25.88	8.74	3.97	49 36.02	5 58.59
68	9	. .	. .	35.5	53.	11.2	. .	. .	57 53.18	14.15	0.97	.	3	27.402	32 43.18	8.50	5.51	58 8.30	14 17.19
69	9	. .	. .	. .	27.	44.7	2.	. .	58 27.04	14.15	0.95	.	3	23.617	36 40.49	8.49	6.27	14 58 42.14	28 18 15.25
70	9	. .	. .	. .	51.3	9.3	26.	. .	14 59 51.41	+14.16	+1.22	.	5	53.296	− 5 31.60	− 8.45	− 0.44	15 0 6.79	−27 47 0.49

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(164) 41. Minutes assumed as 49, not 48.
(164) 55. Time of transit over T. IV assumed as 28ˢ.2 instead of 38ˢ.2.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
		° ′ ″						″	in.	°	°	°	°	°
Zone 164	1848. h. m. May 3, 14 40	. . .	. .	. .	. .	. .	. .	. .	. . .	. .	51.7			
	15 11	77 2 {30.8 31.1	21.6 20.6	28.2 30.2	33.8 35.5	18.3 19.1	32.1 33.2	27.87	29.865	60.	51.2	59.	58.5	60.8

ZONE 165. MAY 27. C. $D_0 = -24° 33′ 20″$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	26.7	43.	0.2	17.1	. .	13 1 43.29	+19.74	+0.94	IV.	5	48.391	−10 39.53	− 3.21	− 6.92	13 2 3.97	−24 44 9.66
2	9	. .	. .	. .	. .	. .	. .	54.5	2 3 39	19.74	0.77	VI.	3	28.319	31 45.22	3.21	10.28	2 23.90	25 5 18.71
3	9.10	. .	. .	42.7	59.3	. .	. .	. .	6 59.46	19.74	0.84	III.	3	32.695	27 10.97	3.27	9.54	7 20.04	25 0 43.78
4	8.9	. .	. .	29.7	46.6	4.1	. .	. .	9 46.84	19.74	0.98	IV.	5	48.758	10 16.30	3.30	6.86	10 7.56	24 43 46.46
5	8.9	. .	. .	. .	26.3	43.1	0.7	. .	10 26.37	19.74	0.94	V.	4	44.510	14 41.59	3.31	7.55	10 47.05	48 12.45
6	8.9	. .	. .	. .	. .	24.7	41.7	. .	11 7.76	19.74	0.91	V.	4	40.575	18 48.51	3.32	8.23	11 28.41	24 52 20.06
7	8	. .	21.2	. .	55.3	12.5	29.3	. .	13 55.35	19.74	0.83	IV.	3	30.288	29 42.12	3.36	9.96	14 15.92	25 3 15.44
8	9.10	. .	1.8	. .	35.?	. .	. .	. .	17 35.53	19.74	0.69	II.	2	10.258	50 33.52	3.40	13.34	17 55.96	25 24 10.26
9	9	. .	. .	. .	50.5	. .	. .	. .	18 50.39	19.74	1.03	IV.	5	50.098	8 52.24	3.42	6.64	19 11.16	24 42 22.30
10	9	. .	44.	1.2	18.3	. .	. .	. .	21 18.27	19.74	0.75	III.	2	17.222	43 17.26	3.44	12.16	21 38.76	25 16 52.86
11	8	. .	. .	12.5	30.	47.	4.4	. .	22 30.00	19.74	0.94	IV.	4	40.146	19 15.12	3.46	8.30	22 50.68	24 52 46.88
12	9	. .	55.5	12.6	29.3	. .	. .	. .	24 29.53	19.74	1.02	III.	5	46.814	12 18.15	3.49	7.18	24 50.29	24 45 48.82
13	9	. .	6.	23.8	40.5	57.8	. .	. .	29 40.53	19.74	0.89	IV.	3	28.925	31 7.38	3.54	10.18	30 1.16	25 4 41.00
14	9	. .	. .	42.	59.	. .	. .	. .	30 59.00	19.74	0.82	III.	3	20.395	40 2.71	3.56	11.62	31 19.56	13 37.89
15	9	. .	0.5	17.7	34.	51.3	. .	. .	34 34.39	19.74	0.87	IV.	3	27.074	33 3.63	3.61	10.49	34 55.00	25 6 37.73
16	7	. .	30.3	47.	4.3	21.3	38.5	55.5	36 4.36	19.74	1.06	IV.	5	47.956	11 6.66	3.62	6.99	36 25.16	24 44 37.27
17	7	. .	. .	. .	. .	. .	. .	46.	36 54.57	19.74	0.78	VII.	2	12.676	48 2.72	3.63	12.93	37 15.09	25 21 39.28
18	9	. .	35.4	52.5	9.	26.6	. .	. .	43 9.40	19.74	0.85	IV.	2	18.482	41 58.56	3.70	11.94	43 29.99	25 15 34.20
19	9	. .	. .	14.2	30.8	. .	. .	. .	46 31.04	19.74	1.15	III.	5	53.124	5 42.13	3.72	6.13	46 51.93	24 39 11.98
20	9	. .	. .	. .	2.7	19.7	. .	. .	47 2.65	19.74	1.04	V.	3	40.428	19 5.63	3.73	8.25	47 23.43	24 52 37.61
21	9.10	. .	. .	. .	. .	. .	. .	. .	47	. .	. .	.	4	45.172	. . .	3.73	7.46		
22	7.8	. .	. .	. .	. .	28.	45.5	2.	49 11.01	19.74	0.87	V.	2	18.258	42 12.80	3.75	11.98	49 31.62	25 15 48.53
23	9	. .	29.8	. .	14.	31.	. .	. .	13 58 3.93	19.75	0.92	IV.	2	19.606	40 48.00	3.81	11.75	13 58 24.60	25 14 23.56
24	8	. .	. .	. .	21.8	39.	55.3	. .	14 1 21.71	19.75	1.19	V.	5	51.	. . .	3.82	6.47	14 1 42.65	24
25	8	. .	. .	. .	20.3	37.2	. .	. .	2 3.33	19.75	0.24	V.	5	55.645	3 3.97	3.82	5.71	2 24.32	36 33.50
26	8	. .	30.2	47.2	4.3	21.3	38.5	. .	4 4.36	19.75	0.14	IV.	3	45.052	14 15.48	3.83	7.47	4 26.25	24 47 46.78
27	7	. .	35.5	53.1	[19]	27.	44.	1.2	10 9.97	19.75	0.93	IV.	3	25.650	34 32.97	3.84	10.75	10 30.65	25 8 7.56
28	9	. .	. .	56.2	12.8	. .	. .	. .	14 12.96	19.76	1.04	III.	3	26.971	33 10.09	3.83	10.51	14 33.76	6 44.43
29	9	. .	52.5	. .	. .	. .	0.2	. .	14 26.50	19.76	1.03	VI.	3	25.238	34 58.43	3.83	10.82	14 47.29	8 33.08
30	7.8	. .	. .	15.6	32.2	49.5	6.7	. .	20 32.46	19.76	0.96	IV.	2	13.851	46 48.72	3.81	12.75	20 53.18	25 20 25.28
31	8.9	. .	. .	. .	. .	. .	. .	43.	20 51.92	19.76	1.18	VII	4	40.776	18 36.10	3.80	8.19	21 12.86	24 52 8.09
32	8.9	. .	. .	. .	. .	. .	. .	53.7	22 2.65	19.76	1.30	VII.	5	53.623	5 10.63	3.79	6.03	22 23.71	24 38 40.45
33	9	. .	29.5	. .	4.2	. .	37.8	. .	28 3.89	19.77	1.09	IV.	3	25.365	34 50.97	3.75	10.79	28 24.75	25 8 25.51
34	9	. .	. .	. .	57.8	. .	. .	. .	33 57.67	19.78	1.14	IV.	5	40.496	18.55.03	3.68	8.24	34 18.59	24 52 26.95
35	9	. .	26.	43.	59.5	. .	. .	. .	35 59.91	19.78	0.88	III.	3	22.502	37 50.56	3.65	11.26	36 20.57	25 11 25.47
36	7	. .	. .	. .	8.	. .	42.	. .	37 57.98	19.78	1.16	IV.	4	39.583	14 36.84	3.64	7.49	37 18.92	24 48 7.97
37	9	. .	. .	. .	8.3	. .	42.3	. .	37 58.27	19.78	1.16	IV.	4	39.481	14 43.31	3.64	7.50	37 19.21	48 14.45
38	7	. .	. .	. .	. .	. .	. .	9.?	38 17.90	19.79	1.07	VII.	3	33.889	25 55.11	3.63	9.35	38 38.76	59 28.09
39	8	. .	. .	. .	. .	. .	0.5	. .	39 26.58	19.79	1.21	VI.	4	41.069	18 17.70	3.61	8.13	39 47.58	51 49.44
40	9	. .	. .	. .	34.	51.5	8.	. .	43 34.17	19.79	1.29	V.	4	43.002	16 16.12	3.53	7.80	43 55.25	24 49 47.45
41	9	. .	46.2	3.5	20.2	37.5	. .	. .	46 20.37	19.79	1.17	IV.	3	33.282	26 34.26	3.49	9.46	46 41.33	25 0 7.21
42	7.8	. .	51.	8.1	25.	41.8	58.9	. .	48 25.02	19.80	1.34	IV.	5	42.775	16 31.88	3.44	7.85	48.46.16	24 50 3.17
43	2	6.5	. .	39.8	56.8	13.7	30.8	47.7	54 56.86	19.80	1.54	IV.	5	51.082	7 50.48	3.28	6.46	55 18.20	24 41 20.22
44	8	. .	. .	. .	37.5	54.8	11.6	. .	56 37.58	19.81	1.12	V.	2	22.762	38 32.84	3.24	11.22	56 58.51	25 12 7.30
45	9	. .	8.5	25.5	42.5	59.5	. .	. .	14 58 42.58	19.82	1.60	IV.	5	52.991	5 50.56	3.19	6.13	14 59 4.00	24 39 19.88
46	9	. .	. .	13.8	30.8	48.3	. .	. .	15 1 30.92	19.82	0.99	IV.	2	10.955	49 50.38	3.11	13.23	15 1 51.73	25 23 26.72
47	8.9	. .	58.7	15.5	32.5	50.	. .	. .	3 32.69	19.82	1.28	IV.	3	26.724	33 25.52	3.05	10.56	3 53.79	25 6 59.13
48	8	. .	. .	. .	22.2	39.5	56.1	. .	4 22.27	19.82	1.60	V.	5	48.151	10 54.54	3.03	6.93	4 43.69	24 44 24.50
49	9	. .	. .	10.8	27.2	44.2	. .	. .	15 9 27.46	+19.83	+1.68	IV.	5	52.088	− 6 47.31	− 2.87	− 6.26	15 9 48.97	−24 40 16.44

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 27,	0	. .	. .	. .	. .	. .	359 59 61.48	29.9238

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 165	May 27,	13 0	73 54 61.6	59.8	63.1	58.1	59.1	59.9	60.27	30.200	76.	72.2	75.	74.2	
		13 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.1			
		13 40	. .	. .	. .	. .	. .	. .	. .	30.202	75.3	70.7			
		14 0	60.7	59.	63.	57.8	58.2	58.9	59.60	. .	. .	68.9	73.	73.5	
		14 24	. .	. .	. .	. .	. .	. .	. .	30.194	74.	68.5			
		14 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.			
		15 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.			
		15 20	. .	. .	. .	. .	. .	. .	. .	30.200	71.9	65.8			
		15 45	60.7	59.7	63.2	58.1	58.1	58.1	59.65	30.200	71.2	64.9	71.5	71.	73.8

REMARKS.

(165) 23. Time of transits over T.'s IV and V assumed as 4^s and 21^s instead of 14^s and 31^s.

(165) 36. Transits over T.'s IV and VI assumed as 58^s and 32^s, not 8^s and 42^s, and minutes as 36, not 37, and micrometer reading as $44^r.583$, not $39^r.583$, to agree with B. A. C. 4865; Arg. Z. 301, 52; and Transit Z., 1849, April 5.

(165) 37. Transits over T.'s IV and VI assumed as $58^s.3$ and $32^s.3$, not $8^s.3$ and $42^s.3$, and minutes as 36, not 37, and micrometer reading as $44^r.481$, not $39^r.481$, to agree with B. A. C. 4865; Arg. Z. 301, 52; and Transit Z., 1849, April 5.

(165) 44. Micrometer reading assumed as $21^r.762$, not $22^r.762$.

ZONE 165. MAY 27. C. $D_\circ = -24° 33' 20''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7.8	. .	52.8	9.8	27.	44.1	1.5	. .	15 11 27.06	+19.84	+1.05	IV.	2	8.338	−52 34.64	− 2.79	−13.73	15 11 47.95	−25 26 11.16
51	8.9	. .	. .	51.5	8.7	25.5	. .	. .	13 8.57	19.84	1.53	IV.	5	38.067	21 27.42	2.74	8.64	13 29.94	24 54 58.80
52	9	. .	38.8	56.5	13.2	. .	. .	. .	15 13.25	19.84	1.28	III.	3	20.415	40 1.45	2.65	11.64	15 34.37	25 13 35.74
53	8	. .	. .	. .	. .	41.8	59.	. .	15 24.90	19.84	1.35	V.	3	25.919	34 15.77	2.64	10.70	15 46.09	7 49.11
54	9	. .	. .	. .	50.7	7.	24.5	. .	16 50.37	19.84	1.43	V.	3	28.560	31 30.28	2.59	10.25	17 11.64	25 5 3.12
55	8	. .	. .	16.	. .	51.	. .	. .	18 33.66	19.85	1.82	IV.	5	53.768	5 1.77	2.53	5.98	18 55.33	24 38 30.28
56	7.8	. .	16.3	33.6	50.	7.	24.4	. .	23 50.29	19.86	1.32	IV.	2	16.905	43 37.20	2.31	12.24	24 11.47	25 17 11.75
57	7.8	. .	24.3	41.3	58.2	. .	32.5	. .	25 58.40	19.86	1.39	IV.	2	20.328	40 2.78	2.22	11.66	26 19.65	25 13 36.66
58	9	. .	. .	. .	. .	. .	55.2	. .	26 21.24	19.86	1.92	VI.	5	53.664	5 8.22	2.21	5.99	26 43.02	24 38 36.42
59	9	. .	. .	. .	. .	. .	1.	. .	27 26.99	19.87	1.27	VI.	2	12.616	48 6.55	2.16	12.99	27 48.13	25 21 41.70
60	8.9	. .	45.2	2.5	19.	36.5	53.8	. .	31 19.43	19.87	1.37	IV.	3	27.617	32 29.58	1.99	10.41	31 40.67	25 6 1.98
61	7.8	. .	18.4	35.5	52.	9.6	26.2	. .	33 52.38	19.87	1.73	IV.	3	37.254	22 24.96	1.87	8.78	34 13.98	24 55 55.61
62	8	. .	53.	10.	26.8	43.6	0.5	. .	36 26.81	19.88	1.68	IV.	3	32.207	27 41.66	1.75	9.63	36 48.37	25 1 13.04
63	9	. .	. .	. .	29.7	. .	. .	. .	37 29.58	19.89	1.93	IV.	5	46.427	12 42.82	1.71	7.22	37 51.40	24 46 11.75
64	7.8	. .	. .	26.8	43.8	1.	17.9	. .	38 43.92	19.89	1.95	IV.	5	47.788	11 17.14	1.65	6.99	39 5.76	24 44 45.78
65	3	46.1	3.2	20.4	37.	54.5	11.5	28.6	41 37.33	19.90	1.50	IV.	2	16.662	43 52.57	1.51	12.28	41 58.73	25 17 26.36
66	4	25.1	41.9	59.	16.	32.9	50.1	6.5	44 15.93	19.91	1.87	IV.	4	40.392	18 59.74	1.38	8.24	44 37.71	24 52 29.36
67	7.8	. .	. .	. .	18.	. .	52.4	9.5	15 45 18.26	+19.91	+2.03	IV.	5	50.029	−14 10.19	− 1.31	− 6.61	15 45 40.20	−24 47 38.11

ZONE 166. MAY 30. S. $D_\circ = -24° 33' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	4	. .	. .	. .	. .	2.	18.8	. .	16 11 44.84	+19.65	+0.47	VI.	2	20.202	−40 10.86	−10.09	− 9.67	16 12 4.96	−25 13 40.62
2	9	. .	. .	. .	56.	. .	. .	. .	14 55.90	19.66	0.19	IV.	5	52.998	6 52.87	9.90	4.11	15 15.75	24 40 16.88
3	8	. .	13.	. .	. .	4.	. .	. .	18 47.08	19.67	0.44	IV.	3	26.770	33 22.58	9.67	8.55	19 7.19	25 6 50.80
4	7	41.5	. .	16.	. .	. .	. .	. .	20 32.70	19.67	0.29	III.	4	43.930	15 17.05	9.57	5.65	20 52.66	24 48 42.27
5	5	. .	. .	. .	. .	2.5	19.5	. .	20 45.56	19.67	0.27	V.	5	45.800	13 21.93	9.55	5.32	21 5.50	46 46.80
6	9	. .	12.	29.	. .	. .	. .	. .	24 46.16	19.68	0.23	.	6	51.500	7 23.98	9.30	4.36	25 6.07	24 40 47.64
7	9	. .	50.	. .	24.	. .	. .	. .	26 24.02	19.68	0.41	.	3	29.600	30 25.16	9.21	8.07	26 44.11	25 3 52.44
8	10	. .	17.	. .	51.	. .	. .	. .	30 51.02	19.69	0.39	.	4	34.802	24 49.29	8.93	7.18	31 11.10	24 58 15.40
9	10	. .	42.	. .	. .	. .	. .	. .	30 16.16	19.69	0.37	.	4	37.278	22 14.16	8.96	6.77	30 36.22	24 55 39.89
10	6	. .	45.8	. .	20.	. .	. .	. .	37 19.98	19.71	0.54	.	2	18.895	41 31.71	8.50	9.90	37 40.23	25 15 0.11
11	8	. .	31.	. .	5.5	. .	. .	. .	40 5.26	19.72	0.34	.	4	44.382	14 48.30	8.32	5.57	40 25.32	24 48 12.19
12	8	. .	. .	. .	12.2	. .	. .	. .	41 12.09	19.72	0.47	.	2	23.890	36 19.09	8.24	9.04	41 32.28	25 9 46.37
13	7	. .	. .	. .	44.	. .	18.	. .	42 43.97	19.72	0.60	.	1	13.712	46 56.99	8.13	10.79	43 4.29	25 20 25.91
14	8	. .	. .	. .	. .	44.5	. .	. .	44 27.55	19.72	0.35	.	4	43.695	15 32.61	8.01	5.69	44 47.62	24 48 56.31
15	7	. .	. .	55.5	. .	29.5	. .	. .	46 12.46	19.73	0.58	.	2	16.805	43 43.23	7.89	10.25	46 32.77	25 17 11.37
16	9	. .	. .	57.	. .	. .	. .	. .	48 14.14	19.73	0.35	.	5	45.228	13 57.91	7.75	5.43	48 34.22	24 47 21.09
17	5	. .	53.	. .	26.	. .	. .	. .	50 26.52	19.74	0.38	.	4	41.108	18 13.68	7.59	6.12	50 46.64	51 37.39
18	5	. .	. .	. .	. .	55.5	12.	. .	50 38.32	19.74	0.33	.	5	47.202	11 54.11	7.58	5.09	50 58.39	45 16.78
19	8	. .	. .	14.	. .	48.	. .	. .	52 31.09	19.75	0.38	.	4	42.612	16 39.90	7.43	5.87	52 51.22	50 3.20
20	8	. .	. .	. .	47.5	. .	. .	. .	53 47.38	19.75	0.35	.	5	46.022	13 8.06	7.33	5.29	54 7.48	24 46 30.68
21	7	. .	53.	. .	. .	27.	. .	. .	55 9.95	19.76	0.67	.	1	8.768	52 5.62	7.23	11.66	55 30.38	25 25 34.51
22	8	. .	50.5	. .	. .	. .	. .	. .	16 58 24.65	19.77	0.38	.	4	44.952	14 12.35	6.98	5.48	16 58 44.80	24 47 34.81
23	8	. .	44.5	. .	. .	. .	. .	. .	17 1 18.65	19.77	0.36	.	6	47.238	11 51.54	6.76	5.07	17 1 38.78	45 13.37
24	8	. .	. .	. .	49.	. .	. .	. .	1 48.87	19.77	0.40	.	5	42.428	16 53.83	6.72	5.88	2 9.04	24 50 16.43
25	7	. .	. .	. .	. .	58.	15.	. .	2 41.04	19.78	0.51	.	3	29.588	30 25.79	6.64	8.09	3 1.33	25 3 50.52
26	9	. .	. .	. .	. .	. .	. .	18.5	3 27.40	19.78	0.49	.	3	33.989	25 48.84	6.58	7.32	3 47.67	24 59 12.74
27	7	. .	20.	. .	36.5	. .	. .	. .	17 6 53.57	+19.79	+0.56	.	3	25.748	−34 26.75	− 6.32	− 7.74	17 7 14.24	−25 7 50.81

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
May 30,	0	. .	. .	. .	. .	. .	359 59 61.08	29.9248

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 166	May 30, 16 0	73 54 60.	61.8	64.	58.8	59.2	58.	60.30	29.760	72.5	69.	73.8		
	16 20	. .	. .	. .	. .	. .	. .	. .	29.764	72.4	67.8			
	16 40	. .	. .	. .	. .	. .	. .	. .	29.772	72.	66.5			
	17 0	59.8	61.8	64.2	57.5	59.0	58.	60.05	29.770	71.8	65.5			
	17 20	. .	. .	. .	. .	. .	. .	. .	29.786	71.5	64.5			

REMARKS.

(165) 67. Micrometer reading assumed as 45r.029, not 50r.029.

(166) 2. Micrometer reading assumed as 51r.998 instead of 52r.998.

(166) 9. Right ascension differs 4m from Arg. Z. 387, 100.

(166) 21. Transit over T. III assumed to have been recorded as over T. II.

(166) 27. Transit over T. III assumed as recorded over T. IV.

ZONE 166. MAY 30. S. $D_{\circ}=-24^{\circ}\ 33'\ 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1870.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
28	7	. .	35.5	. .	9.5	. .	. .	. .	17 12 9.52	+19.81	+0.39	.	5	47.508	−11 34.60	− 5.85	− 5.01	17 12 29.72	−24 44 55.46
29	3	. .	. .	. .	28.	. .	1.5	. .	12 27.72	19.81	0.43	.	4	42.020	17 17.45	5.82	5.95	12 47.96	50 39.22
30	7	. .	. .	. .	. .	. .	10.	. .	13 36.09	19.81	0.49	.	3	36.252	23 27.39	5.73	6.93	13 56.39	24 56 50.05
31	9	. .	. .	. .	. .	. .	. .	55.	19 3.54	19.83	0.72	.	1	11.498	49 17.29	5.25	11.20	19 24.09	25 22 43.74
32	10	. .	47.	. .	21.	. .	. .	. .	30 21.02	19.86	0.50	.	4	40.585	18 46.56	4.20	6.19	30 41.38	24 52 6.95
33	11	. .	. .	38.5	. .	. .	. .	. .	55.54										
34	10	. .	. .	26.	. .	. .	. .	. .	35 43.12	19.88	0.72	.	2	16.662	43 52.25	3.67	10.31	36 3.72	25 17 16.23
35	10	. .	. .	9.5	. .	43.5	. .	. .	37 26.58	19.88	0.49	.	4	41.720	17 35.77	3.51	6.00	37 46.95	24 50 55.28
36	8	. .	21.5	38.5	. .	. .	29.5	. .	40 55.62	19.89	0.49	.	4	44.440	14 45.23	3.17	5.54	41 16.00	48 3.94
37	6	. .	. .	. .	. .	36.5	. .	. .	17 45 19.54	+19.91	+0.52	.	4	41.550	−17 47.38	− 2.72	− 6.03	17 45 39.97	−24 51 6.13

ZONE 167. JUNE 2. C. $D_{\circ}=-25^{\circ}\ 10'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1870.0.
1	8	. .	16.	33.5	50.	7.3	24.5	. .	14 47 50.29	+18.92	+0.47	IV.	3	30.650	−29 19.29	− 8.44	− 9.90	14 48 9.68	−25 40 27.63
2	9	. .	3.8	21.3	37.8	. .	12.5	. .	52 38.17	18.93	0.48	IV.	3	34.905	24 52.17	8.28	9.17	52 57.58	35 59.62
3	9.10	. .	. .	. .	. .	. .	41.	. .	53 6.87	18.93	0.50	VI.	5	54.246	4 31.75	8.27	5.89	53 26.30	15 35.91
4	9.10	. .	0.4	18.	35.2	. .	. .	. .	56 34.98	18.93	0.50	III.	3	31.588	28 20.49	8.15	9.73	56 54.41	39 28.37
5	9	. .	. .	. .	10.8	28.6	. .	. .	57 11.10	18.93	0.53	V.	4	39.326	20 7.01	8.12	8.42	57 30.56	31 13.55
6	9.10	. .	. .	. .	. .	. .	. .	9.5	57 18.16	18.93	0.53	VII.	5	44.242	14 59.54	8.12	7.59	14 57 37.62	26 5.25
7	8	. .	11.7	28.9	45.9	3.4	20.	37.6	14 59 46.00	18.93	0.53	IV.	2	16.611	43 55.83	8.04	12.30	15 0 5.46	55 6.17
8	7	. .	. .	. .	7.3	24.5	51.6	8.4	15 1 7.24	18.93	0.53	V.	3	25.935	34 14.83	7.99	10.81	1 26.70	45 23.63
9	7	. .	7.	24.	41.	. .	15.8	. .	3 41.27	18.93	0.54	IV.	3	33.329	26 31.32	7.89	9.44	5 0.74	37 38.65
10	9	. .	9.6	. .	43.5	1.7	17.8	. .	4 43.92	18.93	0.55	IV.	4	41.318	18 1.63	7.85	8.00	5 3.40	29 7.48
11	10	. .	. .	59.3	. .	. .	. .	. .	7 16.54	18.94	0.56	III.	5	46.812	12 18.27	7.75	7.12	7 36.04	23 23.14
12	9	. .	53.2	10.4	27.5	. .	2.3	. .	8 27.66	18.94	0.56	IV.	3	29.837	30 10.17	7.72	10.04	8 47.16	41 17.93
13	10	. .	. .	58.7	. .	. .	. .	. .	10 15.75	18.94	0.57	IV.	4	47.550	11 30.45	7.64	7.00	10 35.26	22 35.09
14	8	. .	53.2	10.6	27.6	45.	2.3	. .	11 27.80	18.94	0.58	IV.	3	44.231	15 6.44	7.59	7.57	11 47.32	26 11.60
15	9.10	. .	52.	9.2	26.	. .	. .	. .	13 26.23	18.94	0.58	III.	5	52.450	6 24.59	7.51	6.15	13 45.75	17 28.25
16	9.10	. .	43.2	0.5	17.7	. .	. .	. .	15 17.58	18.95	0.58	III.	3	30.805	29 9.50	7.43	9.86	15 37.11	40 16.79
17	9	. .	. .	. .	. .	. .	48.	. .	15 13.87	18.95	0.59	VI.	5	56.242	2 26.43	7.43	5.52	15 33.41	13 29.38
18	8	. .	17.4	34.2	51.3	8.3	25.4	. .	23 51.39	18.96	0.62	IV.	5	52.701	6 8.77	7.06	6.11	24 10.97	17 11.94
19	9.10	. .	47.3	4.4	21.8	. .	. .	. .	26 21.65	18.96	0.62	III.	3	23.656	36 38.10	6.96	11.11	26 41.23	47 46.17
20	8	. .	13.	30.5	47.2	. .	. .	. .	27 47.46	18.96	0.61	III.	2	12.422	48 18.26	6.89	13.06	28 7.03	59 28.21
21	7	. .	. .	. .	9.1	26.4	43.4	0.9	28 9.23	18.96	0.62	V.	3	25.643	35 35.97	6.80	10.76	28 28.81	46 43.53
22	9	. .	54.5	12.5	29.3	. .	. .	. .	32 29.22	18.97	0.64	III.	3	31.320	28 37.37	6.67	9.78	32 48.83	39 43.82
23	9.10	. .	30.5	48.	5.2	. .	. .	. .	36 5.06	18.97	0.65	III.	3	22.237	38 7.18	6.50	11.36	36 24.68	49 15.04
24	9	. .	. .	23.4	40.2	57.8	. .	. .	37 40.42	18.98	0.65	IV.	3	20.778	39 38.44	6.42	11.61	38 0.05	50 46.47
25	8	. .	. .	. .	. .	. .	37.2	. .	38 3.10	18.98	0.67	VI.	5	46.471	12 39.93	6.40	7.18	38 22.75	23 43.51
26	7.8	. .	. .	. .	. .	. .	9.3	. .	38 35.21	18.98	0.67	VI.	4	39.496	19 56.54	6.37	8.35	38 54.86	31 1.26
27	7	. .	38.5	56.2	13.2	30.6	47.4	4.5	41 13.17	18.98	0.67	IV.	3	21.861	38 30.52	6.24	11.42	41 32.82	49 38.18
28	6	. .	. .	. .	. .	. .	. .	29.	41 37.68	18.98	0.68	VII.	5	52.529	6 19.31	6.22	6.14	41 57.34	17 21.67
29	9	. .	16.5	33.2	50.4	. .	. .	. .	45 50.53	18.99	0.69	III.	5	50.025	8 56.65	6.00	6.57	46 10.21	19 59.22
30	8.9	. .	. .	25.8	. .	59.5	. .	. .	46 42.73	18.99	0.69	IV.	4	41.035	18 19.27	5.95	8.11	47 2.41	29 23.33
31	9	. .	. .	. .	. .	. .	24.8	. .	46 50.68	18.99	0.69	VI.	5	48.472	10 34.33	5.95	6.81	47 10.36	21 37.09
32	2	36.1	53.2	10.9	27.	44.5	1.6	18.3	49 27.37	18.99	0.69	IV.	3	30.436	29 32.83	5.81	9.93	49 47.05	40 38.57
33	9	. .	. .	. .	. .	4.2	. .	. .	50 47.04	19.00	0.70	V.	3	26.551	33 36.32	5.74	10.60	51 6.74	44 42.66
34	8	. .	29.5	47.2	4.	21.2	38.2	. .	53 4.05	19.00	0.71	IV.	3	27.785	32 18.90	5.62	10.40	53 23.76	43 24.92
35	9	. .	45.	. .	19.2	36.	53.2	. .	15 53 19.09	+19.00	+0.71	IV.	3	21.678	−38 42.06	− 5.60	−11.45	15 53 38.80	−25 49 49.11

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 2,	0	. .	. .	. .	. .	. .	359 59 61.01	29.9255

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 167	June 2,	14 40	74 32 {33.1 / 34.	31.8 / 31.2	34. / 34.4	30.8 / 31.1	32.9 / 32.9	30. / 31.	32.26	29.998	71.5	68.	70.7	69.8	69.
		15 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.2			
		15 20	. .	. .	. .	. .	. .	. .	. .	29.998	71.	67.9			
		15 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.			
		16 0	. .	. .	. .	. .	. .	. .	. .	29.994	70.2	66.9	. .	. .	. .
		16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.9	. .	. .	. .
		17 0	{32.8 / 33.5	32.6 / 32.0	33.8 / 33.1	31.3 / 32.3	33.5 / 33.2	29.2 / 30.2	32.29	29.982	69.	62.6	69.	68.5	68.2

REMARKS.

(167) 8. Transits over T.'s VI and VII assumed as at 41s.6 and 58s.4, not at 51s.6 and 8s.4.

(167) 9. Minutes of transit assumed as 4, not 3.

(167) 10. Right ascension differs 18s.5 from Arg. Z. 302, 69.

(167) 21. Micrometer reading assumed as 24r.643 instead of 25r.643.

Extern. therms. assumed as transposed.

Extern. therms. assumed as 64.9.

ZONE 167. JUNE 2. C. $D_{\circ}=-25^{\circ}\ 10'\ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	6	. .	. .	. .	. .	. .	. .	48.	15 54 56.66	+19.00	+0.72	VII.	5	43.790	−15 27.78	− 5.51	− 7.64	15 54 16.38	−25 26 30.93
37	9.10	. .	. .	. .	. .	. .	13.	. .	55 38.86	19.00	0.71	VI.	3	20.768	39 38.63	5.48	11.61	55 58.57	50 45.72
38	9.10	. .	. .	. .	12.3	. .	. .	. .	57 12.19	19.00	0.72	IV.	3	22.833	37 29.55	5.39	11.25	57 31.91	48 36.19
39	9.10	. .	. .	. .	50.3	. .	. .	. .	57 50.19	19.01	0.72	IV.	3	22.550	37 47.48	5.36	11.30	58 9.92	48 54.14
40	6	. .	. .	. .	39.3	57.1	14.2	31.6	15 58 39.77	19.01	0.73	V.	2	16.488	44 3.80	5.31	12.35	15 58 59.51	25 55 11.46
41	9.10	. .	. .	. .	18.6	. .	. .	. .	16 0 18.56	19.01	0.72	IV.	2	9.708	51 8.57	5.22	13.57	16 0 38.29	26 2 17.36
42	9.10	. .	. .	. .	. .	11.2	28.	. .	0 53.90	19.01	0.73	V.	2	18.451	42 0.69	5.19	12.03	1 13.64	25 53 7.91
43	8	. .	. .	. .	. .	43.5	0.7	. .	2 26.53	19.02	0.74	V.	4	41.226	18 7.71	5.11	8.07	2 46.29	29 10.89
44	9.10	. .	52.	9.	26.3	. .	. .	. .	4 26.28	19.02	0.73	III.	2	17.598	42 53.63	5.00	12.17	4 46.03	54 0.80
45	9	. .	. .	. .	23.8	41.	. .	. .	7 23.81	19.03	0.75	V.	4	41.368	17 58.86	4.83	8.04	7 43.59	29 1.73
46	9	. .	22.5	39.3	56.3	. .	. .	. .	9 56.52	19.03	0.75	III.	5	46.813	12 18.21	4.69	7.10	10 16.30	23 20.00
47	9.10	. .	. .	. .	. .	0.	. .	. .	10 43.03	19.03	0.75	IV.	5	53.171	5 39.37	4.64	6.01	11 2.81	16 40.02
48	2	. .	. .	. .	. .	1.5	18.4	35.6	11 44.37	19.03	0.76	V.	5	56.097	2 16.87	4.58	5.46	12 4.16	13 16.91
49	9	. .	43.	. .	17.8	35.	. .	. .	14 17.63	19.04	0.75	IV.	2	16.778	43 45.24	4.43	12.31	14 37.42	54 51.98
50	9	. .	. .	20.5	37.3	54.6	. .	. .	17 37.42	19.04	0.76	IV.	2	16.894	43 37.89	4.24	12.30	17 57.22	25 54 44.43
51	1	1.7	18.8	36.	53.4	10.8	27.6	45.2	19 53.36	19.05	0.76	IV.	2	6.479	54 31.19	4.11	14.12	20 13.17	26 5 39.42
52	9	. .	50.5	7.	24.5	. .	. .	. .	22 24.45	19.06	0.76	III.	3	30.102	29 53.73	3.96	9.98	22 44.26	25 40 57.67
53	9	. .	0.	17.5	34.2	. .	. .	. .	30 34.37	19.07	0.77	III.	3	25.706	34 29.45	3.48	10.75	30 54.22	25 45 33.68
54	9.10	. .	. .	30.8	48.	5.2	. .	. .	34 47.95	19.08	0.77	IV.	2	9.669	51 11.08	3.22	13.59	35 7.80	26 2 17.89
55	10	. .	. .	. .	48.?	. .	. .	. .	36 47.96	19.08	0.78	IV.	2	9.505	51 21.48	3.09	13.60	37 7.82	26 2 28.17
56	10	. .	. .	. .	. .	. .	45.?	. .	37 10.80	19.08	0.77	VI.	2	12.402	48 20.08	3.07	13.08	37 30.65	25 59 26.23
57	9	. .	. .	. .	22.2	. .	. .	. .	39 22.10	19.09	0.79	IV.	5	55.577	3 8.31	2.94	5.60	39 41.98	14 6.85
58	10	. .	. .	. .	7.7	. .	. .	. .	41 7.60	19.09	0.79	IV.	2	22.072	38 13.27	2.84	11.39	41 27.48	49 17.50
59	9	. .	. .	. .	18.2	. .	. .	. .	42 18.10	19.09	0.80	IV.	5	53.542	5 16.08	2.76	5.95	42 37.99	16 14.79
60	8	. .	. .	. .	. .	1.3	18.2	. .	42 44.20	19.10	0.80	V.	4	49.531	9 26.41	2.74	6.64	43 4.10	20 25.79
61	8	. .	14.3	31.3	. .	5.5	22.8	. .	44 48.56	19.10	0.80	IV.	3	36.212	23 30.34	2.60	8.93	45 8.46	34 31.87
62	9	. .	. .	42.8	. .	17.	34.	. .	44 59.93	19.10	0.80	IV.	3	37.052	22 37.57	2.59	8.78	45 19.83	33 38.94
63	8.9	. .	. .	. .	. .	. .	46.3	. .	46 12.18	19.11	0.80	VI.	5	52.687	6 9.53	2.52	6.10	46 32.09	17 8.15
64	8	. .	8.	25.5	42.5	59.3	16.7	. .	48 42.43	19.11	0.80	IV.	3	22.167	38 11.51	2.36	11.37	49 2.34	49 15.24
65	8	. .	53.	10.	27.	44.5	1.3	. .	54 27.22	19.12	0.81	IV.	4	41.626	17 42.24	2.00	7.97	54 47.15	28 42.21
66	8	. .	. .	53.2	10.2	27.2	44.3	. .	55 10.22	19.13	0.81	IV.	4	44.683	14 30.30	1.95	7.48	55 30.16	25 29.73
67	9.10	. .	. .	. .	. .	. .	52.	. .	16 58 17.87	19.14	0.83	VI.	5	54.546	4 12.92	1.76	5.73	16 58 37.84	25 15 10.41
68	9	. .	21.3	. .	36.	. .	. .	. .	17 0 55.88	19.14	0.81	III.	2	9.114	51 45.62	1.60	13.69	17 1 15.83	26 2 50.92
69	8	. .	52.2	9.5	26.8	. .	0.7	. .	2 26.64	19.14	0.82	IV.	4	40.912	18 26.92	1.49	8.09	2 46.60	25 29 26.50
70	9	. .	. .	28.8	. .	. .	19.	. .	17 2 45.46	+19.15	+0.82	V.	4	42.472	−16 49.57	− 1.47	− 7.82	17 3 5.43	−25 27 48.86

ZONE 168. JUNE 3. C. $D_{\circ}=-28^{\circ}\ 18'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	54.2	. .	30.5	. .	. .	. .	14 5 29.94	+18.89	+1.05	II.	5	46.006	−13 8.69	− 1.28	− 2.90	14 5 49.88	−28 32 2.87
2	8	. .	. .	. .	. .	18.6	36.1	. .	6 1.06	18.89	1.02	V.	4	43.478	15 46.38	1.28	3.37	6 20.97	34 41.03
3	9	. .	2.3	19.7	. .	53.	. .	. .	9 37.49	18.89	0.98	IV.	4	39.997	19 24.41	1.27	4.06	9 57.36	38 19.74
4	8	. .	15.2	32.7	50.3	7.5	25.2	. .	14 50.20	18.89	0.77	IV.	2	19.939	40 26.99	1.22	7.95	15 9.86	59 26.16
5	9	. .	. .	. .	32.	49.5	6.8	. .	15 31.79	18.89	0.79	V.	3	23.201	37 6.46	1.20	7.31	15 51.47	56 4.97
6	6	12.	29.2	47.1	4.	22.4	39.5	57.5	19 4.53	18.90	0.84	IV.	3	30.092	29 54.29	1.17	5.98	19 24.27	48 51.44
7	8.9	. .	. .	. .	. .	21.5	39.	. .	20 3.98	18.90	1.04	V.	5	51.396	7 30.88	1.16	1.87	20 23.92	26 23.91
8	8.9	. .	. .	. .	29.5	47.6	5.	. .	21 29.79	18.90	0.93	V.	3	40.098	19 26.23	1.13	4.04	21 49.62	28 38 21.40
9	9.10	. .	. .	34.	51.3	. .	. .	. .	24 51.45	18.90	0.71	III.	2	19.002	41 25.44	1.08	8.15	25 11.06	29 0 24.67
10	9.10	. .	6.7	. .	41.8	59.3	. .	. .	14 26 41.79	+18.90	+0.80	IV.	3	27.729	−32 22.48	− 1.04	− 6.43	14 27 1.49	−28 51 19.95

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 3,	0	. .	. .	. .	. .	. .	359 59 61.47	29.9968

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 168[a]	June 3,	14 5	. .	. .	. .	. .	. .	. .	. .	29.884	75.	75.			
		14 20	77 39 62.5	60.5	64.1	56.7	60.7	59.9	60.73	. .	. .	74.9	76.2	73.5	
		14 40	. .	. .	. .	. .	. .	. .	. .	29.882	75.	74.9			
		14 50	61.7	60.0	64.2	57.3	60.8	59.8	60.63	. .	. .	. .	75.7	73.5	71.

REMARKS.

(167) 36. Minutes of transit assumed as 53, not 54.

(167) 47. Right ascension differs 5^{s} from Arg. Z. 304, 44.

(167) 48. Declination differs 20″ from Arg. Z. 212, 38; 304, 45; 387, 71; and B. A. C. 5447.

(167) 68. Transit over T. IV assumed as 56^{s}, not 36^{s}.

(168) 3. Time of transit over T. V assumed as 53^{s} instead of 55^{s}.

[a] Readings of microscopes D and F assumed to be given 10″ too great.

ZONE 168. JUNE 3. C. $D_0 = -28° 18' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
11	9	. .	. .	. .	39.2	56.2	. .	. .	14 27 38.92	+18.91	+1.02	V.	5	51.349	− 7 33.84	− 1.02	− 1.87	14 27 58.85	−28 26 26.73
12	9	. .	. .	. .	. .	36.	. .	. .	28 18.24	18.91	0.69	V.	2	17.920	42 33.74	1.01	8.35	28 37.84	29 1 33.10
13	8	. .	. .	58.	15.5	33.2	. .	. .	31 15.57	18.91	0.89	IV.	4	39.302	20 8.15	0.95	4.20	31 35.37	28 39 3.30
14	9	. .	8.4	26.	. .	. .	. .	. .	32 43.70	18.91	0.86	III.	3	36.134	23 35.24	0.91	4.81	33 3.47	28 42 30.96
15	8	. .	. .	. .	. .	. .	9.4	. .	32 34.25	18.91	0.76	VI.	2	16.494	44 3.42	0.92	8.64	32 53.92	29 3 2.98
16	9.10	. .	. .	. .	59.3	. .	. .	. .	33 59.25	18.91	0.59	IV.	2	10.625	50 11.20	0.88	9.80	34 18.75	29 9 11.88
17	9	. .	. .	. .	44.8	2.8	. .	. .	39 44.88	18.92	0.69	V.	3	23.460	36 50.27	0.75	7.26	40 4.49	28 55 48.28
18	8	. .	. .	. .	44.5	2.3	. .	. .	40 44.62	18.92	0.99	V.	5	53.228	5 35.80	0.72	1.47	41 4.53	24 27.99
19	9.10	. .	. .	44.5	. .	20.	. .	. .	46 2.24	18.92	0.68	IV.	3	24.031	36 14.46	0.57	7.18	46 21.85	55 12.21
20	8	. .	22.5	39.5	57.2	14.8	32.6	. .	14 47 57.39	+18.93	+0.86	IV.	5	45.257	−13 56.27	− 0.51	− 3.05	14 48 17.18	−28 32 49.83

ZONE 169. JUNE 5. C. $D_0 = -25° 48' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
1	9	. .	. .	. .	. .	7.	23.8	. .	14 47 49.68	+17.57	+1.61	V.	4	36.795	−22 45.60	− 7.04	− 6.81	14 48 8.86	−26 11 29.45
2	9	. .	. .	9.5	26.2	44.	. .	. .	55 26.52	17.58	2.48	IV.	2	20.373	39 59.95	6.83	9.71	55 46.58	28 46.49
3	8.9	. .	. .	. .	. .	27.3	. .	. .	56 10.11	17.58	1.85	V.	3	32.899	26 57.85	6.82	7.48	56 29.54	15 42.15
4	8	. .	. .	21.	37.3	55.	. .	. .	57 37.74	17.58	1.81	IV.	3	34.138	25 40.43	6.77	7.25	57 57.13	14 24.45
5	8	. .	35.1	52.2	9.2	. .	. .	. .	50 9.40	17.58	1.52	III.	4	40.075	19 19.07	6.73	6.24	14 59 28.50	8 2.04
6	7	. .	. .	. .	44.5	. .	18.8	. .	14 59 44.44	17.58	0.90	VI.	5	52.425	6 26.16	6.71	4.07	15 0 2.92	55 6.94
7	8	. .	2.2	19.4	36.2	. .	10.8	. .	15 6 36.51	17.58	2.48	IV.	3	21.472	38 55.15	6.47	9.52	6 56.57	27 41.14
8	8	. .	1.	18.2	35.2	. .	9.5	. .	8 35.33	17.59	2.44	IV.	3	22.627	37 42.60	6.40	9.31	8 55.36	26 28.31
9	8	. .	46.	3.5	20.7	37.9	. .	. .	10 20.65	17.59	1.77	IV.	3	36.171	23 32.92	6.34	6.92	10 40.01	12 16.18
10	8	. .	. .	1.	17.8	35.5	52.5	. .	11 18.08	17.59	2.56	IV.	2	20.608	39 45.15	6.30	9.67	11 38.23	28 31.12
11	8	. .	. .	36.	53.	10.4	. .	. .	12 53.11	17.59	2.52	IV.	2	21.425	38 53.96	6.23	9.53	13 13.22	27 39.72
12	8	. .	. .	. .	39.2	55.8	13.5	. .	13 38.98	17.59	1.62	V.	3	39.393	20 10.60	6.21	6.33	13 58.19	8 53.14
13	8.9	. .	16.5	34.	. .	8.2	25.2	. .	15 51.06	17.60	1.84	III.	3	35.390	24 22.00	6.12	7.05	16 10.50	13 5.17
14	9	. .	. .	34.5	51.5	9.	26.	. .	15 51.70	17.60	1.34	IV.	4	45.510	13 38.52	6.12	5.27	16 10.64	2 19.91
15	9.10	. .	. .	. .	. .	6.2	. .	. .	16 49.04	17.60	1.72	V.	3	37.962	21 40.21	6.08	6.59	17 8.36	10 22.88
16	9	. .	36.7	. .	11.	. .	. .	. .	19 11.05	17.60	2.20	III.	3	28.706	31 21.25	5.98	8.21	19 30.85	20 5.44
17	8.9	. .	. .	49.8	7.	24.2	. .	. .	20 7.02	17.60	1.48	IV.	4	43.023	16 14.49	5.95	5.70	20 26.10	4 56.14
18	9	. .	. .	. .	11.8	28.3	. .	. .	23 11.41	17.60	1.66	V.	3	39.710	19 50.50	5.80	6.27	23 30.67	8 32.57
19	9	. .	56.2	. .	31.	. .	5.5	. .	25 30.97	17.60	3.12	IV.	2	10.865	49 55.96	5.70	11.41	25 51.69	38 43.07
20	7.8	. .	. .	29.	46.	3.2	20.9	. .	27 46.24	17.61	1.27	IV.	5	48.255	10 48.08	5.60	4.78	28 5.12	59 28.46
21	9	. .	. .	. .	. .	37.3	54.3	. .	28 20.10	17.61	1.64	V.	4	40.891	18 28.55	5.58	6.08	28 39.35	7 10.21
22	9	. .	. .	. .	. .	. .	55.5	. .	29 21.24	17.61	2.27	VI.	3	28.224	31 51.11	5.53	8.30	29 41.12	20 34.94
23	9.10	. .	. .	36.8	. .	11.2	. .	. .	33 54.12	17.61	1.27	IV.	5	48.222	10 50.09	5.30	4.78	34 13.00	59 30.17
24	9	. .	41.3	. .	15.3	. .	50.	. .	37 15.58	17 62	2.00	IV.	3	34.454	25 20.72	5.13	7.20	37 35.20	14 3.05
25	8	. .	. .	. .	. .	12.	29.3	. .	37 54.74	17.62	3.09	V.	2	12.504	48 13.57	5.10	11.11	38 15.45	36 59.78
26	9	. .	. .	. .	37.8	55.	. .	. .	39 37.77	17.62	1.59	V.	5	43.182	16 6.44	5.02	5.67	39 56.98	4 47.13
27	8.9	. .	. .	58.3	15.5	32.8	. .	. .	41 15.55	17.62	1.57	IV.	5	43.789	15 28.23	4.92	5.56	41 34.74	4 8.71
28	8	. .	. .	23.	40.1	57.	14.2	. .	42 40.03	17.62	1.57	IV.	5	43.922	15 19.81	4.85	5.54	42 59.22	4 0.20
29	9	. .	. .	. .	. .	. .	50.7	. .	43 16.32	17.63	3.22	VI.	2	11.371	49 24.74	4.82	11.32	43 37.17	38 10.88
30	9	. .	. .	49.2	. .	23.5	. .	. .	45 6.30	17.63	3.24	IV.	2	10.916	48 52.76	4.72	11.40	45 27.17	37 38.88
31	8.9	. .	. .	58.3	16.	33.1	49.8	. .	46 15.70	17.63	2.25	IV.	3	30.752	29 12.82	4.66	7.86	46 35.55	17 55.34
32	8	. .	. .	28.3	45.3	2.6	. .	. .	49 45.40	17.63	1.85	IV.	4	39.219	20 13.37	4.46	6.36	50 4.88	8 54.19
33	7.8	. .	. .	. .	. .	16.5	34.	. .	49 59.36	17.63	3.09	V.	2	14.450	46 11.60	4.45	10.76	50 20.08	34 56.81
34	8	. .	. .	18.8	36.	53.4	10.5	. .	51 36.04	17.64	3.20	IV.	2	12.449	48 16.90	4.35	11.13	51 56.88	37 2.38
35	9	. .	8.2	25.2	. .	59.5	. .	. .	15 53 42.51	+17.64	+2.03	IV.	3	35.961	−23 45.96	− 4.23	− 6.95	15 54 2.18	−26 12 27.14

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 5,	0	. .	. .	. .	. .	. .	359 59 61.34	29.9986

REMARKS.

(169) 26. Right ascension differs 19ˢ.4 from Arg. Z. 212, 8, and 18ˢ.7 from Mer. Circle Z. 1848, May 27.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 169	June 5,	14 50	75 9 64.6	61.2	66.1	59.8	60.1	61.4	62.20	29.890	75.5	69.3	74.4	74.2	
		15 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.9			
		15 20	. .	. .	. .	. .	. .	. .	. .	29.888	74.5	68.			
		15 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.1			
		16 0	. .	. .	. .	. .	. .	. .	. .	29.892	. .	67.6			
		16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.5			
		16 40	63.3	61.4	65.9	60.6	59.3	60.2	61.78	29.886	72.5	65.9	72.5	70.2	76.

ZONE 169. JUNE 5. C. $D_0 = -25° 48' 30''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
36	8	. .	14.	31.5	. .	5.5	22.4	. .	15 53 48.43	+17.64	+2.26	IV.	3	31.378	−28 33.73	− 4.22	− 7.76	15 54 8.33	−26 17 15.71
37	9	. .	. .	15.	32.2	. .	. .	. .	55 32.20	17.64	2.96	III.	2	17.361	43 8.54	4.12	10.23	55 52.80	31 52.89
38	9	. .	. .	. .	0.2	. .	. .	. .	56 0.12	17.64	3.01	IV.	2	16.657	43 52.89	4.10	10.36	56 20.77	26 32 37.35
39	9	. .	. .	. .	. .	. .	14.2	. .	55 39.83	17.65	. .	VI.	3	14.	. . .	4.11	. .	56 (0)	
40	7	. .	4.3	21.5	38.3	55.8	13.	. .	15 58 38.65	17.65	1.24	IV.	5	52.285	6 35.08	3.94	4.07	15 58 57.54	25 55 13.09
41	9	. .	. .	0.3	17.6	. .	. .	. .	16 0 17.55	17.65	1.60	III.	4	45.479	13 40.02	3.84	5.26	16 0 36.80	26 2 19.12
42	7.8	. .	. .	. .	. .	3.	20.5	37.5	0 45.82	17.65	2.94	V.	2	18.676	41 46.39	3.82	10.00	1 6.41	30 30.21
43	9.10	. .	. .	. .	. .	. .	39.2	. .	2 4.85	17.65	3.10	VI.	2	15.573	45 1.18	3.74	10.56	2 25.60	26 33 45.48
44	9.10	. .	42.2	. .	. .	33.8	. .	. .	14 16.72	17.67	1.36	IV.	5	52.544	6 18.75	2.96	4.01	14 35.75	25 54 55.72
45	9	. .	. .	. .	. .	. .	42.5	. .	15 8.20	17.68	2.87	V.	2	21.799	38 30.44	2.90	9.47	15 28.75	26 27 12.81
46	9	. .	. .	. .	. .	25.1	53.	. .	16 18.35	17.68	2.19	V.	3	35.301	24 27.40	2.84	7.06	16 38.23	26 13 7.30
47	9	. .	. .	. .	. .	53.5	. .	. .	17 36.44	17.68	1.34	V.	5	52.722	6 7.44	2.75	3.98	17 55.46	25 54 44.17
48	1	0.8	17.5	35.	51.7	9.5	26.7	43.6	19 52.11	17.68	1.87	IV.	4	42.292	17 0.50	2.60	5.82	20 11.66	26 5 38.92
49	9	. .	. .	33.	50.	7.3	. .	. .	21 50.08	17.68	2.19	IV.	3	36.018	23 42.39	2.47	6.93	22 9.95	12 21.79
50	9	. .	. .	24.3	. .	58.8	. .	. .	25 41.61	17.69	2.09	IV.	3	38.589	21 1.18	2.20	6.47	26 1.39	9 39.85
51	9	. .	26.	43.2	. .	17.8	. .	. .	28 0.51	17.69	3.60	IV.	2	8.680	52 13.08	2.05	11.80	28 21.80	40 56.93
52	8.9	. .	. .	20.7	. .	. .	12.	. .	30 37.86	17.70	2.09	IV.	4	38.974	20 28.55	1.87	6.39	30 57.65	9 6.81
53	8.9	. .	. .	22.7	. .	. .	13.7	30.5	30 39.45	17.70	1.72	IV.	5	46.511	12 37.49	1.87	5.08	30 58.87	1 14.44
54	9	. .	38.	. .	12.6	30.	47.1	. .	16 36 12.65	+17.71	+2.74	IV.	3	26.817	−33 19.63	− 1.48	− 8.57	16 36 33.10	−26 21.59.68

ZONE 170. JUNE 6. S. $D_0 = -23° 55' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	12.5	. .	. .	2.5	. .	. .	15 38 45.96	+18.42	+1.04	V.	2	12.088	−48 39.59	−30.81	− 7.01	15 39 5.42	−24 44 47.41
2	9	. .	7.5	. .	41.	. .	. .	. .	41 41.24	18.42	1.10	IV.	3	20.588	39 50.54	30.64	5.59	42 0.76	35 56.77
3	10	. .	. .	. .	16.5	. .	. .	. .	43 16.40	18.42	1.12	.	3	22.785	37 32.55	30.55	5.22	43 35.94	33 38.32
4	5	. .	. .	. .	. .	53.5	. .	. .	44 36.68	18.42	1.28	V.	6	50.048	8 55.39	30.49	0.68	44 56.38	4 56.56
5	7	. .	41.5	. .	15.5	. .	. .	. .	49 15.44	18.42	1.17	.	3	32.322	27 34.50	30.23	3.61	49 35.03	23 38.34
6	9	. .	. .	18.	. .	. .	. .	. .	51 34.98	18.43	1.19	.	3	34.095	25 43.19	30.09	3.31	51 54.60	21 46.59
7	7	. .	. .	. .	. .	51.	. .	. .	54 34.09	18.43	1.19	.	3	37.300	22 21.95	29.92	2.78	54 53.71	18 24.65
8	9	. .	. .	48.	. .	. .	. .	. .	57 4.99	18.43	1.12	.	3	24.895	35 20.26	29.77	4.86	57 24.54	31 24.89
9	7	. .	. .	15.	. .	. .	. .	. .	15 58 32.10	18.44	1.27	.	6	52.600	7 17.84	29.68	0.24	15 58 51.81	3 17.76
10	7	. .	. .	15.5	. .	. .	. .	. .	16 0 50.02	18.44	1.22	.	5	44.390	14 50.56	29.56	1.59	16 1 9.68	10 51.71
11	9	. .	. .	21.	. .	. .	. .	. .	1 38.05	18.44	1.04	.	2	13.530	47 8.79	29.49	6.78	2 14.47	43 15.06
12	7	. .	51.	. .	24.5	. .	. .	. .	4 24.69	18.44	1.28	.	6	52.795	6 2.47	29.31	0.18	4 44.41	2 1.96
13	8	. .	49.5	. .	. .	. .	. .	. .	6 23.60	18.45	1.03	.	1	12.668	48 1.15	29.19	6.94	6 43.08	44 7.28
14	8	. .	. .	45.	. .	. .	. .	. .	7 2.01	18.45	1.07	.	2	19.988	40 23.60	29.15	5.70	7 21.53	36 28.45
15	9	. .	. .	59.	. .	. .	. .	. .	12 33.06	18.45	1.06	.	1	19.038	41 22.43	28.81	5.87	12 52.57	37 27.11
16	10	. .	23.	. .	. .	. .	. .	. .	14 57.08	18.46	1.04	.	2	16.372	44 10.18	28.63	6.31	15 16.58	40 15.12
17	8	. .	. .	44.	. .	. .	. .	. .	16 1.08	18.46	1.23	.	5	48.265	10 47.33	28.56	0.94	16 20.77	6 46.83
18	7	. .	27.	. .	. .	. .	. .	. .	18 1.02	18.46	1.13	.	3	31.538	28 23.63	28.42	3.75	18 20.61	24 25.80
19	7	. .	. .	19.	. .	. .	. .	. .	19 36.04	18.46	1.20	.	4	43.720	15 30.24	28.32	1.70	19 55.70	11 30.26
20	4	. .	. .	29.5	. .	. .	20.5	. .	20 46.60	18.46	0.99	.	1	10.122	50 41.55	28.23	7.40	21 6.05	46 47.18
21	8	. .	12.	. .	. .	. .	19.	. .	24 45.64	18.47	1.03	II.	2	15.962	44 35.65	27.96	6.37	25 5.14	40 39.98
22	9	. .	27.5	. .	. .	. .	. .	. .	31 1.49	18.48	1.21	.	6	48.622	10 24.59	27.52	0.88	31 21.18	6 22.99
23	5	. .	. .	. .	. .	27.5	. .	. .	32 10.64	18.48	1.19	.	5	44.910	14 17.80	27.43	1.50	32 30.31	10 16.73
24	9	. .	44.	. .	. .	. .	. .	. .	37 18.06	18.49	1.04	.	2	20.975	39 21.25	27.05	5.50	37 37.59	35 23.80
25	6	. .	13.	30.5	. .	. .	. .	. .	37 47.26	18.49	1.15	.	4	40.190	19 11.35	27.01	2.28	39 6.90	15 10.64
26	9	. .	31.5	. .	. .	. .	. .	. .	16 40 5.63	+18.50	+0.95	.	2	8.710	−52 10.45	−26.84	− 7.59	16 40 25.08	−24 48 14.88

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 6,	0	. .	. .	. .	. .	. .	359 59 61.21	29.9986

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 170	June 6,	15 38	73 17 {30. / 30.2	31.2 / 30.8	33.2 / 33.5	30.2 / 30.5	30. / 31.	26. / 26.	30.21	30.058	68.0	58.	71.	. .	71.5
		16 6	. .	. .	. .	. .	. .	. .	. .	30.050	67.5	58.	. .	70.	
		16 37	. .	. .	. .	. .	. .	. .	. .	30.050	67.	58.			
		16 39	. .	. .	. .	. .	. .	. .	. .	30.050	67.	58.			
		17 7	. .	. .	. .	. .	. .	. .	. .	30.050	65.	57.8			
		17 50	. .	. .	. .	. .	. .	. .	. .	30.048	64.8	56.8			
		17 51	. .	. .	. .	. .	. .	. .	. .	30.042	64.	56.2			
		18 15	. .	. .	. .	. .	. .	. .	. .	30.032	63.8	55.9			

REMARKS.

(169) 46. Time of transit over T. V assumed as 35s.1 instead of 25s.1.

(170) 9. Micrometer reading assumed as 51r.600 instead of 52r.600.

(170) 10. Transit over T. II assumed as recorded over T. III.

(170) 15. Transit over T. II assumed as recorded over T. III.

(170) 25. Minutes of transit assumed as 38, not 37.

ZONE 170. JUNE 6. S. $D_0 = -23° 55' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
27	7	. .	. .	. .	. .	34.	. .	. .	16 40 17.06	+18.50	+1.10	.	3	33.535	−26 18.14	−26.83	−3.40	16 40 36.66	−24 22 18.37
28	6	. .	. .	35.5	. .	. .	. .	. .	41 52.50	18.50	1.03	.	2	22.042	38 14.84	26.71	5.35	42 12.03	34 16.90
29	8	. .	. .	11.	. .	. .	. .	. .	44 28.08	18.50	0.95	.	1	8.060	52 50.83	26.51	7.71	44 47.53	48 55.05
30	8	. .	. .	12.5	. .	. .	. .	. .	45 29.52	18.51	1.14	.	4	39.872	19 31.68	26.42	2.34	45 49.17	15 30.44
31	9	. .	33.	. .	. .	24.	. .	. .	48 7.05	18.51	1.13	II.	4	37.768	21 43.22	26.22	2.70	48 26.69	17 42.14
32	5	. .	4.8	22.	38.5	. .	. .	. .	50 38.81	18.51	0.97	IV.	2	11.542	49 13.70	26.03	7.13	50 58.29	45 16.86
33	8	. .	13.	. .	46.5	. .	. .	. .	52 46.69	18.52	1.12	IV.	4	38.685	20 46.74	25.86	2.55	53 6.33	16 45.15
34	8	. .	55.	. .	. .	. .	. .	. .	54 28.99	18.52	1.18	.	6	50.380	8 34.29	25.73	0.59	54 48.69	4 30.61
35	7	. .	. .	. .	. .	16.	. .	. .	54 59.20	18.52	1.20	.	6	53.320	5 30.08	25.68	0.09	55 18.92	1 25.85
36	7	. .	. .	7.	. .	. .	. .	. .	57 23.99	18.53	1.09	.	3	34.635	25 9.31	25.50	3.22	57 43.61	21 8.03
37	7	. .	. .	8.5	. .	. .	. .	. .	16 58 25.57	18.53	0.93	.	1	9.299	51 33.27	25.42	7.49	16 58 45.03	47 36.18
38	10	. .	5.	. .	. .	. .	. .	. .	17 7 39.07	18.54	0.98	.	2	17.960	42 30.36	24.67	6.05	17 7 58.59	38 31.08
39	10	. .	. .	. .	. .	0.5	. .	. .	9 43.58	18.55	1.08	.	3	35.540	24 12.33	24.49	3.08	10 3.21	20 9.90
40	7	. .	36.5	. .	10.	. .	. .	. .	12 10.28	18.55	0.93	.	1	11.855	48 52.07	24.29	7.09	12 29.76	44 53.45
41	8	. .	6.	. .	40.	. .	. .	. .	15 39.94	18.56	1.03	IV.	3	28.350	31 43.71	24.00	4.28	15 59.53	27 41.99
42	4	. .	. .	. .	52.	. .	. .	. .	16 51.90	18.56	1.18	.	6	52.812	6 1.72	23.90	0.15	17 11.64	1 55.77
43	9	. .	56.	. .	. .	. .	. .	. .	19 30.00	18.57	1.12	.	4	42.810	16 26.72	23.67	1.83	19 49.69	12 22.22
44	9	. .	56.	. .	. .	. .	. .	. .	23 30.00	18.58	1.12	.	4	42.962	16 17.25	23.33	1.80	23 49.70	12 12.38
45	9	. .	. .	. .	42.	. .	. .	. .	24 41.95	18.59	0.92	.	1	10.900	49 53.26	23.23	7.25	25 1.46	45 53.74
46	8	. .	. .	. .	. .	19.5	. .	. .	26 2.48	18.59	1.00	.	3	24.050	35 10.40	23.11	5.02	26 22.07	31 8.53
47	8	. .	. .	. .	0.5	. .	. .	. .	28 0.38	18.59	1.00	.	3	26.390	33 46.66	22.94	4.61	28 19.97	29 44.21
48	8	. .	. .	. .	. .	. .	1.	. .	40 27.24	18.62	1.09	.	6	43.842	13 19.42	21.84	1.38	40 46.95	9 12.64
49	8	. .	54.5	. .	28.	. .	. .	. .	47 28.18	18.63	1.01	II.	3	32.210	27 41.47	21.20	3.63	47 47.82	23 36.30
50	6	. .	5.5	. .	39.5	. .	. .	. .	50 39.44	18.64	1.05	II.	4	39.362	20 3.38	20.91	2.42	50 59.13	15 56.71
51	9	. .	. .	. .	21.	. .	. .	. .	51 20.88	18.65	1.07	.	5	43.482	15 47.69	20.85	1.72	51 40.60	11 40.26
52	7	. .	33.	. .	. .	. .	. .	. .	53 57.00	18.65	1.05	.	4	40.360	19 0.74	20.61	2.25	54 16.70	14 53.60
53	5	. .	. .	. .	. .	36.	. .	. .	53 19.10	18.65	1.05	.	4	38.858	20 36.13	20.66	2.51	53 38.80	16 29.30
54	6	. .	. .	. .	. .	37.	. .	. .	54 20.07	18.65	1.02	.	4	34.120	25 33.57	20.59	3.30	54 39.74	21 27.46
55	7	. .	. .	. .	38.	. .	. .	. .	55 37.86	18.66	1.00	.	4	31.672	28 6.82	20.44	3.72	55 57.52	24 0.98
56	8	. .	. .	. .	. .	50.	. .	. .	17 56 33.13	18.66	1.07	.	6	43.072	16 13.30	20.36	1.79	17 56 52.88	12 5.45
57	9	. .	34.	. .	. .	. .	. .	. .	18 0 8.11	18.67	0.88	.	2	12.730	47 58.40	20.03	6.97	18 0 27.66	43 55.40
58	8	. .	. .	. .	4.	. .	. .	. .	4 3.87	18.68	1.03	.	4	36.710	22 50.68	19.66	2.86	4 23.58	18 43.20
59	9	. .	. .	56.	. .	. .	. .	. .	7 13.10	18.69	1.11	.	6	51.490	7 24.86	19.36	0.35	7 32.90	3 14.57
60	8	. .	24.	. .	. .	. .	. .	. .	14 58.02	18.71	0.96	.	3	28.555	31 30.72	18.61	4.27	15 17.69	27 23.60
61	8	. .	. .	. .	. .	49.	. .	. .	15 32.01	18.71	0.95	.	3	26.708	33 26.34	18.55	4.57	15 51.67	29 19.46
62	7	. .	10.	27.	. .	. .	. .	. .	19 44.02	18.72	0.93	.	3	23.568	36 43.63	18.15	5.13	20 3.67	32 36.91
63	6	. .	. .	36.3	. .	. .	. .	. .	20 53.36	18.72	1.06	.	6	45.552	13 37.58	18.03	1.37	21 13.14	9 26.98
64	5	. .	10.	. .	. .	. .	. .	. .	23 44.00	18.73	1.03	.	4	42.328	16 57.23	17.75	1.91	24 3.76	12 46.89
65	7	. .	. .	0.	. .	. .	. .	. .	24 17.03	18.73	1.03	.	5	41.418	17 57.11	17.69	2.06	24 36.79	13 46.86
66	4	. .	. .	. .	. .	56.5	. .	. .	24 22.74	18.73	1.06	.	6	46.562	12 34.29	17.66	1.19	24 42.53	8 23.14
67	6	. .	. .	. .	. .	. .	. .	52.	25 1.16	18.74	1.00	.	4	35.585	24 2.03	17.62	3.07	25 20.90	19 52.72
68	7	. .	45.	. .	18.5	. .	. .	. .	32 18.70	18.75	0.92	.	3	26.630	33 31.50	16.90	4.59	32 38.37	29 22.99
69	7	. .	. .	11.	. .	45.	. .	. .	32 28.12	18.75	1.06	.	6	48.288	10 45.88	16.88	0.89	32 47.93	6 33.65
70	9	. .	. .	24.5	. .	. .	. .	. .	35 41.46	18.76	0.94	.	3	29.640	30 22.72	16.55	4.08	36 1.16	26 13.35
71	8	. .	27.	. .	1.	. .	. .	. .	38 0.50	18.77	0.92	II.	3	27.380	32 44.50	16.32	4.46	38 20.19	28 35.28
72	9	. .	. .	. .	. .	. .	34.	. .	39 0.17	18.78	0.84	.	2	14.302	46 20.94	16.22	6.70	39 19.79	42 13.86
73	7	. .	. .	. .	4.	. .	. .	. .	42 3.89	18.79	0.90	.	3	24.490	35 45.78	15.91	4.96	42 23.58	31 36.65
74	8	. .	23.5	. .	. .	. .	. .	. .	43 57.49	18.79	1.02	.	6	44.832	14 22.38	15.72	1.48	44 17.30	10 9.58
75	7	. .	38.	. .	. .	. .	. .	. .	18 47 12.13	+18.80	+0.79	.	1	8.209	−52 40.87	−15.39	−7.74	18 47 31.72	−24 48 34.00

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle.								Barom.	Thermom. At.	Ex.	U.	L.	I.
			A.		B.	C.	D.	E.	F.	Mean.						
	1848.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 170	June 6,	18 47	. .	. .	. .	. .	. .	. .	. .	. .	30.040	63.8	55.3			
		19 1	. .	. .	. .	. .	. .	. .	. .	. .	30.050	64.0	54.2	. .	67.	70.
		19 24	. .	. .	. .	. .	. .	. .	. .	. .	30.052	64.5	54.0			
		20 0	73 17	29.6 30.0	34. 33.	35.5 35.	30.8 30.5	32.5 32.5	25.5 25.8	31.22	30.050	64.2	53.5	67.		

REMARKS.

(170) 46. Micrometer reading assumed as 25r.050 instead of 24r.050.

(170) 47. Right ascension differs 16s from Arg. Z. 222, 22; perhaps a thread interval in error.

(170) 48. Micrometer reading assumed as 45r.842, not 43r.842.

(170) 52. Right ascension differs 49s.3 from mean of Arg. Z. 220, 72; 222, 56.

(170) 66. Transit over T. VI assumed as recorded over T. V.

ZONE 170. JUNE 6. S. $D_0 = -23^\circ\ 55'\ 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
76	7	. .	39.	. .	. .	. .	. .	. .	18 53 13.06	+18.82	+0.87	.	2	21.698	−38 35.97	−14.77	− 5.44	18 53 32.75	−24 34 26.18
77	8	. .	45.5	. .	. .	. .	. .	. .	54 19.49	18.82	1.02	.	4	46.102	13 0.21	14.66	1.26	54 39.33	8 46.13
78	8	. .	50.	. .	23.5	. .	. .	. .	57 23.68	18.83	0.91	IV.	3	30.612	29 21.67	14.33	3.90	57 43.42	25 9.90
79	9	. .	. .	. .	. .	. .	35.5	. .	18 58 1.76	18.84	0.94	.	3	34.672	25 6.49	14.27	3.21	18 58 21.54	20 53.97
80	6	. .	58.	. .	31.8	. .	. .	. .	19 1 31.84	18.84	0.91	IV.	3	30.328	29 39.61	13.90	3.95	19 1 51.59	25 27.46
81	8	. .	42.	. .	. .	. .	. .	. .	3 16.11	18.85	0.80	.	1	12.633	48 3.41	13.71	7.01	3 35.76	43 54.13
82	5	. .	30.5	47.5	. .	21.5	. .	. .	6 4.51	18.86	0.90	.	.	F. wire	30 0.09	13.42	4.00	6 24.27	25 47.51
83	8	. .	44.	. .	. .	. .	2.	. .	9 18.12	18.87	1.00	II.	5	45.925	13 13.77	13.07	1.28	9 37.99	8 58.12
84	6	. .	40.	57.	. .	. .	. .	. .	11 14.00	18.87	0.88	III.	3	26.255	32 52.39	12.88	4.66	11 33.75	28 39.93
85	4	. .	14.5	. .	. .	. .	. .	. .	15 48.57	18.88	0.82	.	1	9.015	51 51.65	12.40	5.92	16 8.27	47 39.97
86	4	. .	. .	. .	. .	21.	. .	. .	16 64.11	18.89	0.95	.	4	40.090	19 18.95	12.37	2.28	16 23.95	15 3.60
87	6	. .	. .	. .	. .	. .	6.	. .	17 32.26	18.89	0.92	.	3	35.078	24 41.00	12.22	3.13	17 52.07	20 26.35
88	7	. .	32.	. .	. .	. .	. .	. .	20 6.04	18.90	0.86	.	2	24.980	35 10.10	11.95	4.87	20 25.80	30 56.92
89	6	. .	. .	13.	. .	. .	. .	. .	21 29.96	18.91	0.88	.	3	39.812	30 11.80	11.80	4.03	21 49.75	25 57.63
90	7	. .	. .	. .	. .	. .	19.5	. .	21 45.77	18.91	0.89	.	3	31.578	28 20.68	11.77	3.75	22 5.57	24 6.20
91	6	. .	36.	. .	. .	. .	. .	1.	25 10.08	18.92	0.96	.	4	44.200	14 59.66	11.40	1.57	25 29.96	10 42.63
92	9	. .	. .	. .	12.	. .	. .	. .	30 11.87	18.93	0.85	.	3	27.270	32 51.46	10.87	4.49	30 31.65	28 36.82
93	8	. .	38.5	. .	13.	. .	. .	. .	33 12.78	18.94	0.77	IV.	2	13.015	47 41.28	10.55	6.94	33 32.49	43 28.77
94	4	. .	24.	40.	. .	. .	. .	. .	44 57.50	18.97	0.89	.	4	36.700	22 50.25	9.28	2.85	45 17.36	18 32.38
95	7	. .	. .	33.	. .	6.5	. .	. .	45 49.80	18.98	0.89	.	4	37.552	21 57.47	9.18	2.71	46 9.67	17 39.36
96	9	. .	. .	. .	. .	57.	. .	. .	47 39.85	18.99	0.75	.	2	12.788	47 55.57	9.01	6.98	47 59.59	43 41.56
97	8	. .	26.	. .	. .	. .	. .	. .	19 50 0.00	+19.00	+0.87	.	3	33.935	−25 53.03	− 8.72	− 3.34	19 51 19.87	−24 21 35.09

ZONE 171. JUNE 12. S. $D_0 = -23^\circ\ 18'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	. .	. .	43.	. .	. .	. .	. .	16 55 59.94	+18.47	+0.88	.	2	17.525	−42 58.27	−18.45	− 6.06	16 55 19.29	−24 1 22.78
2	9	. .	. .	. .	57.	. .	. .	. .	55 56.89	18.47	1.31	.	5	47.378	11 43.13	18.45	1.19	56 16.67	23 30 2.77
3	8	. .	57.5	. .	31.	. .	. .	. .	16 59 31.10	18.47	1.07	.	3	30.825	29 8.18	18.12	3.87	16 59 50.64	47 30.17
4	10	. .	. .	43.	. .	. .	. .	. .	17 4 59.92	18.48	1.15	.	4	36.742	22 48.18	17.60	2.90	17 5 19.55	41 8.68
5	7	. .	. .	. .	20.	. .	43.	. .	5 19.65	18.48	1.00	.	3	25.778	34 24.80	17.57	4.71	5 39.13	23 52 47.08
6	3	. .	59.	. .	. .	. .	. .	. .	8 32.94	18.49	0.80	II.	2	12.092	48 38.46	17.26	6.98	8 52.23	24 7 2.70
7	5	. .	. .	. .	. .	55.	. .	. .	8 38.08	18.49	0.99	.	3	24.562	35 41.09	17.25	4.90	8 57.56	23 54 3.24
8	10	. .	39.	. .	. .	. .	. .	. .	11 12.94	18.49	0.81	.	2	12.402	48 19.14	17.00	6.93	11 32.24	24 6 43.07
9	9	. .	. .	23.	. .	. .	. .	. .	12 40.01	18.49	1.36	.	6	51.940	6 56.42	16.86	0.42	12 58.86	23 25 13.70
10	4	. .	. .	19.	. .	. .	. .	. .	14 35.92	18.49	1.14	.	3	36.260	23 27.39	16.66	2.97	14 55.55	41 47.02
11	7	. .	. .	. .	23.5	. .	. .	. .	15 23.36	18.49	1.07	.	3	31.358	28 34.99	16.58	3.79	15 42.92	46 55.36
12	.	. .	. .	. .	. .	57.	. .	. .	16 40.18	18.50	1.07	.	3	33.122	28 49.55	16.47	3.82	16 59.75	47 9.84
13	6	. .	48.	. .	. .	. .	. .	. .	21 21.83	18.50	1.12	.	3	34.992	24 46.78	15.99	3.19	21 41.45	43 5.96
14	3	. .	. .	. .	56.5	. .	. .	. .	21 56.36	18.50	1.03	.	3	28.015	32 4.54	15.94	4.33	22 15.89	23 50 24.81
15	8	. .	. .	42.	. .	. .	. .	. .	23 58.95	18.51	0.85	.	2	16.342	44 12.44	15.72	6.27	24 18.31	24 2 34.43
16	7	. .	. .	4.	. .	38.	. .	. .	31 21.03	18.52	1.07	III.	3	33.202	26 39.29	14.97	3.49	31 40.62	23 44 57.75
17	6	. .	15.5	. .	. .	. .	6.	. .	34 49.26	18.52	1.20	II.	4	41.356	17 58.24	14.61	2.15	35 8.98	23 36 15.00
18	8	. .	21.5	. .	. .	. .	. .	. .	36 55.42	18.53	0.83	.	2	14.558	46 3.89	14.38	6.56	37 14.78	24 4 24.83
19	5	. .	54.	. .	27.5	. .	. .	. .	40 27.70	18.53	0.75	.	1	10.078	50 43.61	14.01	7.32	40 46.98	24 9 4.94
20	5	. .	37.	. .	. .	. .	44.	. .	42 10.62	18.53	1.17	.	4	39.882	19 30.49	13.81	2.37	42 30.32	23 37 46.67
21	5	. .	4.	21.	. .	54.5	. .	. .	49 37.78	18.54	0.95	III.	3	23.91	36 22.04	13.23	5.01	47 57.27	54 40.28
22	8	. .	. .	. .	. .	7.	. .	. .	49 50.18	18.54	1.13	.	5	37.142	22 25.52	12.99	2.84	50 9 85	40 41.35
23	3	. .	. .	. .	. .	35.5	52.	. .	17 50 18.54	+18.54	+1.03	.	3	30.492	−29 29.13	−12.93	− 3.92	17 50 38.11	−23 47 45.98

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 12,	0	. .	. .	. .	. .	. .	359 59 64.08	30.0018

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 171	June 12,	16 50	72 39 60.	62.3	64.2	58.3	56.8	57.2	59.80	30.074	73.0	60.8	. .	. .	70.
		17 21	. .	. .	. .	. .	. .	. .	. .	30.078	67.8	60.	. .	66.0	
		18 0	. .	. .	. .	. .	. .	. .	. .	30.072	67.0	58.2	. .	. .	65.5
		18 20	. .	. .	. .	. .	. .	. .	. .	30.066	66.8	58.5			
		18 43	. .	. .	. .	. .	. .	. .	. .	30.060	66.2	57.2			
		19 15	59.5	64.5	64.5	59.8	58.5	57.0	60.63	30.062	66.2	56.8			

REMARKS.

(170) 83. Time of transit over T. IV assumed as 52^s instead of 2^s.

(170) 84. Micrometer reading assumed as 27^r, not 26^r.

(170) 85. Micrometer reading assumed as 9^r, not 19^r.

(170) 97. Minutes of transit assumed as 51 instead of 50.

(171) 1. Minutes of transit assumed as 54 instead of 55.

(171) 5. Time of transit over T. VI assumed as 53 instead of 43.

(171) 12. Declination differs 2′ from Arg. Z. 220, 25.

(171) 17. Transit over T. V assumed to have been recorded as over T. VI.

(171) 21. Minutes assumed as 47, not 49.

ZONE 171. JUNE 12. S. $D_0 = -23° 18' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
24	7	. .	11.	. .	. .	. .	. .	. .	17 54 44.96	+18.54	+0.72	.	1	8.340	−52 32.71	−12.42	− 7.62	17 55 4.22	−24 10 52.75
25	10	. .	. .	. .	. .	19.	. .	. .	55 1.90	18.55	0.74	.	1	9.612	51 14.65	12.39	7.41	55 21.19	24 9 34.45
26	7	. .	. .	. .	. .	. .	34.	. .	55 0.43	18.55	1.09	.	4	34.805	24 50.73	12.39	3.20	17 55 20.07	23 43 6.32
27	5	. .	14.	. .	. .	. .	. .	. .	17 59 47.91	18.56	0.86	.	2	18.440	42 0.50	11.84	5.94	18 0 7.33	24 0 18.28
28	6	. .	. .	. .	. .	24.5	. .	. .	18 0 7.71	18.56	1.19	.	4	42.425	16 52.53	11.81	1.96	0 27.46	23 35 6.30
29	10	. .	. .	. .	. .	. .	35.	. .	1 1.41	18.56	1.19	.	4	42.376	16 55.85	11.70	1.96	1 21.16	35 9.51
30	3	. .	. .	. .	. .	31.2	. .	. .	2 14.37	18.56	1.09	.	3	34.518	25 16.52	11.57	3.25	2 34.02	23 43 31.34
31	10	. .	2.5	. .	. .	. .	. .	. .	5 36.41	18.57	0.83	.	1	16.654	43 51.25	11.17	6.24	5 55.81	24 2 8.66
32	8	. .	. .	. .	. .	36.	. .	. .	6 19.10	18.58	0.98	.	3	27.443	32 40.41	11.09	4.45	6 38.66	23 50 55.95
33	6	. .	. .	. .	. .	. .	38.	. .	7 4.40	18.58	0.90	.	3	22.052	38 18.22	10.99	5.35	7 23.88	23 56 34.56
34	10	. .	. .	34.	. .	. .	. .	. .	13 50.97	18.59	0.80	.	2	13.730	46 56.06	10.19	6.70	14 10.36	24 5 12.95
35	10	. .	4.	. .	. .	. .	. .	. .	16 37.82	18.59	1.21	.	5	43.842	15 24.51	9.86	1.69	16 57.62	23 33 36.06
36	6	. .	. .	. .	14.	. .	. .	. .	17 13.88	18.60	1.23	.	5	46.412	12 43.76	9.79	1.30	17 33.71	30 54.85
37	9	. .	15.5	32.5	. .	. .	. .	. .	18 49.38	18.60	1.11	.	4	38.572	20 52.89	9.59	2.56	19 9.09	23 39 5.04
38	9	. .	20.5	. .	54.	. .	. .	. .	20 54.20	18.60	0.71	.	1	9.722	51 7.19	9.34	7.40	21 13.51	24 9 23.93
39	7	. .	. .	. .	53.5	. .	27.	. .	21 53.38	15.60	1.26	.	6	52.230	6 38.46	9.22	0.34	22 13.24	23 24 48.02
40	5	. .	50.	. .	24.	. .	. .	. .	24 23.95	18.61	0.73	.	1	10.802	49 58.10	8.91	7.21	24 43.29	24 8 14.22
41	8	. .	. .	2.	. .	. .	. .	. .	27 18.90	18.62	0.94	.	3	25.671	34 31.65	8.56	4.73	27 38.46	23 52 44.94
42	8	. .	50.	. .	. .	. .	. .	. .	28 23.82	18.62	1.24	.	6	46.218	12 55.57	8.43	1.33	28 43.68	31 5.33
43	4	. .	. .	. .	3.5	. .	37.	. .	29 3.40	18.62	1.14	.	4	39.995	19 24.54	8.35	2.34	29 23.16	37 35.23
44	5	. .	50.3	. .	23.	. .	. .	. .	32 23.55	18.62	0.87	.	2	20.598	39 45.03	7.93	5.58	32 43.04	23 57 58.54
45	7	. .	. .	12.	. .	45.	. .	. .	33 28.44	18.63	0.76	.	1	12.595	48 7.11	7.80	6.89	33 47.83	24 6 21.80
46	9	. .	5.	. .	. .	. .	. .	. .	35 38.81	18.63	1.32	.	6	53.342	5 28.32	7.53	0.16	35 58.76	23 23 36.01
47	9	. .	50.	. .	. .	. .	. .	. .	37 23.84	18.64	1.00	.	3	30.554	28 22.63	7.31	3.76	37 43.48	46 33.70
48	9	. .	10.5	. .	. .	. .	. .	. .	43 44.32	18.65	1.20	.	5	44.842	14 21.75	6.51	1.52	44 4.17	23 32 29.78
49	10	. .	. .	. .	. .	15.	. .	. .	43 57.89	18.65	0.71	.	1	9.052	51 49.70	6.47	7.54	44 17.25	24 10 3.71
50	10	. .	57.	. .	. .	. .	. .	. .	46 30.88	18.66	0.89	.	3	22.360	37 59.46	6.16	5.30	46 50.43	23 56 10.92
51	8	. .	30.5	. .	5.	. .	. .	. .	50 4.60	18.67	1.26	.	6	49.322	9 40.70	4.70	0.77	50 24.53	27 46.17
52	7	. .	25.	. .	59.	. .	. .	. .	51 58.86	18.67	1.27	.	6	51.040	7 52.74	4.45	0.50	52 18.80	25 57.69
53	6	. .	. .	. .	. .	8.	. .	. .	56 51.25	18.68	1.23	.	5	48.624	10 24.78	3.84	0.88	57 11.16	28 29.50
54	6	. .	. .	4.	. .	37.	. .	. .	18 59 20.64	18.69	1.28	.	6	51.782	7 6.34	3.52	0.38	18 59 40.61	25 10.24
55	8	. .	. .	. .	. .	. .	44.	. .	19 0 10.37	18.69	1.28	.	6	51.552	7 20.91	3.41	0.42	19 0 30.34	25 24.74
56	7	. .	. .	21.5	. .	. .	. .	. .	2 38.43	18.70	0.85	.	2	19.710	40 41.10	3.09	5.73	2 57.98	58 49.92
57	8	. .	. .	23.	. .	. .	. .	. .	3 39.92	18.70	0.87	.	2	21.408	38 54.72	2.96	5.46	3 59.49	23 57 3.14
58	7	. .	45.	. .	. .	. .	. .	. .	9 18.95	18.71	0.70	.	1	9.989	50 49.13	2.22	7.37	9 38.36	24 8 58.72
59	6	. .	. .	. .	. .	10.	. .	. .	9 53.13	18.71	0.96	.	3	28.802	31 14.98	2.14	4.19	10 12.80	23 49 21.31
60	7	. .	. .	. .	40.5	. .	. .	. .	19 11 40.38	+18.71	+0.90	.	3	24.930	−35 18.00	− 1.91	− 4.85	19 11 59.99	−23 53 24.76

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(171) 28. Right ascension differs $10^s.4$ from Arg. Z. 220, 29.

(171) 47. Micrometer reading assumed as $31^r.554$, not $30^r.554$.

ZONE 172. JUNE 15. C. $D_0 = -26° 26' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	. .	38.	55.3	11.6	28.5	. .	14 30 54.79	+18.44	+1.38	IV.	5	56.959	− 2 44.13	− 7.49	+ 0.57	14 31 14.61	−26 28 51.07
2	8	. .	. .	. .	19.3	37.	54.4	. .	33 19.54	18.44	0.98	V.	2	18.092	42 23.08	7.43	− 6.12	33 38.96	27 8 36.63
3	9	. .	. .	18.2	. .	53.3	. .	. .	34 35.72	18.44	0.98	IV.	2	19.056	41 22.43	7.40	5.95	34 55.14	27 7 35.78
4	8.9	. .	. .	30.	47.	4.	. .	. .	37 47.04	18.44	1.26	IV.	4	48.479	10 32.14	7.32	0.75	38 6.74	26 36 40.21
5	8	. .	. .	. .	36.	53.5	10.8	. .	38 36.09	18.44	1.00	V.	2	22.518	37 45.54	7.31	5.33	38 55.53	27 3 58.18
6	5	. .	. .	53.2	10.5	. .	45.	. .	41 10.50	18.44	0.83	IV.	2	7.205	53 45.62	7.24	8.07	41 29.77	20 0.93
7	9	. .	. .	. .	17.2	. .	. .	. .	42 17.07	18.44	1.00	IV.	3	25.532	34 40.43	7.20	4.80	42 36.51	27 0 52.43
8	9	. .	. .	. .	45.2	. .	19.8	. .	42 45.20	18.44	1.03	VI.	3	27.878	32 12.63	7.19	4.38	43 4.67	26 58 24.20
9	9.10	. .	. .	. .	. .	. .	21.5	. .	42 47.03	18.44	1.01	VI.	3	25.635	34 33.47	7.19	4.78	43 6.48	27 0 45.44
10	9.10	. .	. .	44.1	1.	. .	35.3	. .	49 1.08	18.44	1.19	IV.	5	46.089	13 3.92	7.02	1.17	49 20.71	26 39 12.11
11	9	. .	. .	. .	9.2	27.	44.	. .	49 9.46	18.44	1.14	V.	4	42.175	17 8.15	7.02	1.85	49 29.04	43 17.02
12	9.10	. .	. .	. .	. .	. .	. .	30.5	49 38.58	18.44	1.10	VII.	4	37.972	21 32.06	7.01	2.58	49 58.12	26 47 41.65
13	9.10	. .	. .	. .	44.2	1.3	. .	. .	52 43.98	18.44	0.90	V.	2	18.791	41 39.12	6.92	5.99	53 3.32	27 7 52.03
14	9	. .	45.9	3.5	20.	. .	45.	. .	54 20.51	18.44	0.82	IV.	2	12.277	48 27.68	6.85	7.17	54 39.77	14 41.70
15	9	. .	46.	. .	.2	. .	.3	. .	54 20.71	18.44	0.82	IV.	2	12.369	48 21.90	6.85	7.15	54 39.97	27 14 35.90
16	9	. .	20.4	37.3	54.6	12.2	29.3	. .	14 57 54.79	18.44	1.00	IV.	3	32.462	27 25.71	6.74	3.56	14 58 14.23	26 53 36.01
17	9.10	. .	. .	. .	34.	. .	. .	. .	15 4 33.85	18.44	0.93	IV.	3	27.848	32 14.96	6.50	4.39	15 4 53.22	26 58 25.85
18	8	. .	. .	. .	23.	40.5	57.4	. .	6 22.97	18.44	0.88	V.	3	24.290	35 58.20	6.43	− 5.02	6 42.29	27 2 9.65
19	8	. .	45.	2.	19.2	36.2	53.5	10.8	11 19.22	18.44	1.18	IV.	5	56.312	2 22.21	6.24	+ 0.64	11 38.84	26 28 27.81
20	9	. .	. .	. .	. .	. .	57.	. .	12 22.50	18.44	0.82	VI.	2	21.154	39 11.09	6.19	− 5.58	12 41.76	27 5 22.86
21	9	. .	43.4	1.	18.3	. .	. .	10.2	14 18.24	18.44	1.03	IV.	4	42.395	16 54.02	6.11	1.80	14 37.71	26 43 1.93
22	8	. .	. .	. .	44.	1.	18.	. .	14 43.72	18.44	1.00	V.	4	39.631	19 47.74	6.09	2.29	15 3.16	45 56.12
23	9	. .	16.	33.5	50.3	. .	. .	. .	18 50.58	18.44	0.97	III.	4	37.849	21 38.64	5.90	2.61	19 9.99	47 47.15
24	9	. .	. .	. .	. .	. .	27.	. .	18 52.54	18.44	0.85	VI.	3	26.349	33 48.73	5.91	4.66	19 11.83	59 59.30
25	9	. .	. .	. .	32.2	. .	. .	. .	25 32.08	18.44	1.03	IV.	5	46.571	12 33.72	5.61	1.06	25 51.55	26 38 40.39
26	8	. .	37.5	55.	12.2	29.7	47.1	. .	30 12.32	18.44	0.70	IV.	2	17.703	42 47.22	5.39	6.21	30 31.46	27 8 58.82
27	8	. .	. .	38.8	56.1	13.2	. .	. .	37 56.08	18.44	0.98	IV.	5	48.166	10 53.60	4.99	0.79	38 15.50	26 36 59.38
28	9	. .	42.	0.	17.	. .	. .	. .	39 17.03	18.44	0.67	III.	2	19.049	41 22.56	4.92	5.97	39 36.14	27 7 33.45
29	9.10	. .	. .	. .	. .	. .	16.8	. .	39 42.33	18.44	0.75	VI.	3	25.591	34 36.22	4.90	4.80	40 1.52	27 0 45.92
30	9	. .	. .	0.2	. .	34.6	. .	. .	43 17.51	18.44	0.94	IV.	5	47.085	12 1.39	4.72	0.97	43 36.89	26 38 7.08
31	7	. .	. .	46.5	3.3	21.	38.	. .	45 3.56	18.44	0.79	IV.	3	32.723	27 9.15	4.62	3.51	45 22.79	53 17.28
32	9	. .	. .	. .	. .	. .	. .	59.3	45 7.42	18.44	0.93	VII.	5	46.602	12 31.33	4.62	1.07	45 26.79	26 38 37.02
33	8	. .	11.2	28.6	46.	3.5	20.8	38.	47 46.00	18.44	0.59	IV.	2	14.841	45 46.65	4.47	6.74	48 5.03	27 11 57.86
34	8	9.5	26.4	43.2	0.9	18.4	35.4	52.7	50 0.93	18.45	0.95	IV.	5	50.112	8 51.36	4.35	0.43	50 20.33	26 34 56.14
35	8	. .	. .	. .	37.3	54.8	11.9	. .	51 37.41	18.45	0.92	V.	5	48.102	10 57.55	4.26	− 0.78	51 56.78	37 2.59
36	8	. .	58.8	16.2	33.5	. .	. .	. .	55 33.52	18.45	0.94	III.	5	53.029	5 48.05	4.04	+ 0.09	55 52.91	31 52.00
37	9	. .	. .	. .	40.7	. .	14.2	. .	55 40.16	18.45	0.90	IV.	5	48.732	10 17.94	4.04	− 0.64	55 59.51	36 22.62
38	8.9	. .	. .	. .	. .	19.	. .	53.2	56 1.58	18.45	0.93	V.	5	52.332	6 32.11	4.01	0.00	56 20.96	32 36.12
39	9	. .	. .	. .	. .	1.5	. .	. .	15 57 44.28	18.45	0.84	V.	4	43.942	15 17.05	3.91	− 1.52	15 58 3.57	41 22.48
40	7	. .	12.5	30.	47.2	4.4	21.7	. .	16 0 47.24	18.45	0.93	IV.	5	54.345	4 25.72	3.74	+ 0.35	16 1 6.62	30 29.11
41	8.9	. .	. .	. .	46.2	. .	21.	. .	1 3.67	18.45	0.78	IV.	3	40.339	19 11.41	3.68	− 2.16	2 22.90	45 17.25
42	9	. .	. .	. .	49.2	6.2	23.8	. .	1 49.12	18.45	0.78	V.	4	40.302	19 5.76	3.68	2.16	2 8.35	45 11.60
43	9.10	. .	. .	. .	. .	. .	. .	57.2?	2 5.33	18.45	0.89	VII.	5	51.320	7 35.21	3.66	0.19	2 24.67	26 33 39.06
44	9	. .	. .	. .	. .	13.8	. .	. .	3 56.43	18.45	0.62	V.	3?	25.562	34 38.36	3.56	4.79	4 15.50	27 0 46.71
45	8	. .	. .	. .	48.2	6.	23.5	. .	5 48.61	18.45	0.73	V.	4	36.402	23 10.52	3.43	2.85	6 7.79	26 49 16.80
46	8	. .	. .	41.	57.8	15.6	32.4	. .	14 58.08	18.46	0.71	IV.	3	37.917	21 43.16	2.92	2.58	15 17.25	47 48.66
47	8.9	. .	. .	22.	39.	56.3	. .	. .	17 39.08	18.46	0.66	IV.	3	35.210	24 33.22	2.76	3.07	17 58.20	50 39.05
48	8.9	. .	26.1	43.8	1.	18.5	. .	. .	16 21 1.01	+18.47	+0.64	IV.	3	35.268	−24 29.64	− 2.56	− 3.06	16 21 20.12	−26 50 35.26

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 15, 0	. .	. .	. .	. .	. .	359 59 61.83	29.9945

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 172	June 15, 14 30	. .	. .	. .	. .	. .	. .	. .	30.040	81.3	81.8			
	14 40	75 47 {31.9 / 33.2	25.5 / 26.4	29.8 / 31.1	23.9 / 25.2	28. / 28.8	28.2 / 29.2	} 28.43	. .	. .	81.7	82.	77.4	
	15 0	. .	. .	. .	. .	. .	. .	. .	30.040	81.2	80.9			
	15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	80.7			
	15 40	. .	. .	. .	. .	. .	. .	. .	30.038	80.7	81.2	. .	. .	. .
	16 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	80.7			
	16 20	{31.2 / 32.6	25.7 / 25.9	29.8 / 31.2	23.9 / 25.3	28.3 / 29.	27.5 / 29.2	} 28.30	30.044	80.5	80.0	81.	77.	73.

REMARKS.

(172) 1. Micrometer reading assumed as $55^r.959$, not $56^r.959$.

(172) 15. Transits over T.'s IV and VI assumed as at $20^s.2$ and $45^s.3$ respectively, on the supposition that two components were observed.

(172) 17. Right ascension differs $9^s.5$ from Arg. Z. 373, 54.

(172) 28. Declination in error about 40″.

(172) 41. Transits over T.'s III and V assumed as recorded over T.'s IV and VI, and minutes as 2, not 1.

Therm. readings assumed to be transposed.

ZONE 173. JUNE 16. S. $D_0 = -28° 18' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	. .	3.	. .	. .	. .	. .	15 50 2.96	+18.30	+0.04	.	1	8.920	−52 59.53	− 6.85	−14.34	15 50 21.30	−29 11 50.62
2	5	. .	28.5	. .	. .	4.	. .	. .	52 3.85	18.30	0.55	II.	4	35.650	23 56.14	6.74	8.91	53 22.70	28 42 41.79
3	8	. .	20.5	. .	. .	. .	. .	. .	54 55.81	18.30	0.80	.	6	46.978	12 7.67	6.63	6.70	55 14.91	28 30 51.00
4	9	. .	23.	. .	. .	. .	. .	. .	56 58.45	18.31	0.15	.	2	15.648	44 55.41	6.53	12.83	57 16.91	29 3 44.77
5	9	. .	. .	. .	53.	. .	. .	. .	15 58 52.88	18.31	0.73	.	5	44.110	15 8.14	6.44	7.27	15 59 11.92	28 33 51.85
6	8	. .	11.	. .	. .	. .	. .	. .	16 0 46.37	18.31	0.35	.	3	25.960	34 13.32	6.35	10.79	16 1 5.03	28 53 0.46
7	3	. .	. .	7.5	. .	. .	. .	. .	1 25.19	18.31	0.17	.	2	18.368	42 5.39	6.32	12.28	1 43.67	29 0 53.99
8	9	. .	. .	. .	. .	58.	. .	. .	2 40.47	18.31	0.66	.	4	41.605	17 43.86	6.26	7.75	2 59.44	28 36 27.87
9	7	. .	. .	. .	1.5	. .	. .	. .	4 1.37	18.31	0.62	.	4	38.212	21 16.55	6.19	8.41	4 20.30	40 1.15
10	9	. .	. .	52.	. .	. .	. .	. .	6 9.68	18.32	0.64	.	4	40.400	18 58.80	6.07	7.97	6 28.64	28 37 42.84
11	6	. .	18.	. .	. .	. .	28.	. .	10 53.14	18.32	0.03	.	1	10.728	50 2.73	5.83	13.81	11 11.49	29 8 52.37
12	5	. .	22.5	. .	. .	15.5	. .	. .	15 57.82	18.33	0.12	II.	2	16.358	44 11.00	5.55	12.68	16 16.27	29 2 59.23
13	4	. .	13.2	. .	49.	. .	. .	. .	17 48.74	18.33	0.22	.	2	22.404	37 51.80	5.45	11.49	18 7.29	28 56 38.74
14	7	. .	. .	. .	. .	. .	. .	35.	17 41.92	18.33	+0.14	.	1	17.720	42 46.59	5.45	12.41	18 0.39	29 1 34.45
15	6	. .	24.	. .	59.5	. .	. .	. .	20 59.46	18.33	−0.01	.	1	10.668	50 6.56	5.27	13.82	21 17.78	29 8 55.65
16	7	. .	7.8	. .	. .	50.8	. .	. .	22 43.18	18.33	+0.50	.	3	35.560	24 11.20	5.18	8.92	23 2.01	28 42 55.31
17	9	. .	. .	. .	36.	. .	. .	. .	26 35.86	18.33	0.33	.	3	27.982	32 6.61	4.96	10.39	26 54.52	50 51.96
18	9	. .	. .	31.	. .	. .	. .	. .	28 48.69	18.34	0.57	.	5	40.930	18 27.48	4.84	7.88	29 7.60	37 10.20
19	7	. .	. .	. .	24.5	. .	. .	. .	29 24.38	18.34	0.58	.	5	42.148	17 11.36	4.80	7.65	29 43.30	35 53.81
20	6	. .	. .	. .	28.	. .	. .	. .	30 27.87	18.35	0.56	.	4	39.832	19 34.69	4.73	8.11	30 46.78	38 17.53
21	6	. .	48.	. .	. .	. .	. .	. .	32 23.35	18.35	0.35	.	3	29.212	30 49.50	4.62	10.15	32 42.05	49 34.27
22	10	. .	. .	. .	. .	. .	. .	17.	32 24.20	18.35	0.56	.	4	39.958	19 27.36	4.62	8.07	32 43.11	38 10.05
23	7	. .	. .	. .	. .	. .	35.	. .	37 59.94	18.36	0.55	.	4	40.340	19 3.56	4.28	7.99	38 18.85	37 45.83
24	6	. .	. .	. .	. .	30.	. .	. .	38 12.44	18.36	0.46	.	4	37.305	22 13.85	4.27	8.58	38 31.26	40 56.70
25	9	. .	49.	. .	. .	. .	. .	. .	41 24.33	18.36	+0.37	.	3	33.010	26 51.08	4.08	9.40	41 43.06	28 45 34.56
26	7	. .	14.5	. .	. .	. .	. .	. .	43 59.99	18.36	−0.07	.	1	12.438	48 15.71	3.92	13.47	44 18.28	29 7 3.10
27	7	. .	. .	. .	23.	. .	. .	. .	44 22.94	18.36	−0.07	.	1	11.512	49 15.08	3.89	13.65	44 41.23	8 2.62
28	7	. .	. .	. .	. .	34.	. .	. .	45 16.21	18.37	+0.02	.	2	16.020	44 32.95	3.77	12.75	45 34.60	3 19.47
29	6	. .	. .	. .	. .	. .	. .	39.	46 45.91	18.37	0.04	.	2	17.594	42 54.25	3.74	12.43	47 4.32	29 1 40.42
30	9	. .	13.5	. .	. .	. .	. .	. .	48 48.81	18.37	0.55	.	4	43.013	16 14.05	3.61	7.48	49 7.73	28 34 55.14
31	7	. .	9.	27.	. .	. .	29.	. .	50 44.32	18.37	0.73	III.	6	53.232	5 35.41	3.50	5.50	51 3.42	24 14.41
32	8	. .	. .	. .	24.	. .	. .	. .	52 23.86	18.38	+0.37	.	3	33.388	26 27.70	3.39	9.33	52 42.61	28 45 10.42
33	8	. .	. .	. .	. .	. .	24.	. .	52 48.83	18.38	−0.02	.	2	14.218	46 26.15	3.36	13.11	53 7.19	29 5 12.62
34	6	. .	35.	. .	. .	. .	. .	. .	55 10.32	18.38	+0.46	.	4	38.512	20 56.67	3.21	8.35	56 29.16	28 39 38.23
35	9	. .	. .	. .	42.	. .	. .	. .	57 41.87	18.39	0.54	.	5	41.753	17 36.02	3.06	7.72	58 0.80	36 16.80
36	8	. .	. .	. .	. .	57.	. .	. .	16 58 39.43	+18.39	+0.39	.	4	36.246	−23 20.25	− 3.00	− 8.79	16 58 58.21	−28 42 2.04

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 16,	0	. .	. .	. .	. .	. .	359 59 60.65	29.9967

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 173	June 16,	15 45	77 39 60.	52.2	58.2	48.0	49.8	56.5	54.12	30.008	78.	. .	78.	79.5	
		16 15	. .	. .	. .	. .	. .	. .	. .	30.004	83.	78.8	. .	. .	82.
		16 41	. .	. .	. .	. .	. .	. .	. .	30.006	82.9	77.9			
		17 0	58.0	54.0	57.8	49.8	50.6	55.7	54.32	30.000	81.8	76.9			

REMARKS.

(173) 1. Transit over T. IV assumed as recorded over T. III: and micrometer reading as $7^r.920$, not $8^r.920$, to agree with B. A. C. 5297; M. C. Z., 1846, May 4; M. C. Z., 1847, April 25.

(173) 2. Transit over T. IV assumed to have been recorded as over T. V; and minutes as 53, not 52.

(173) 16. Transit over T. V assumed as at $0^s.8$ instead of $50^s.8$.

(173) 26. Transit over T. II assumed as $24^s.5$, not $14^s.5$.

(173) 28. Minutes assumed as 45 instead of 46.

(173) 31. Time of transit over T. VI assumed as 19^s instead of 29^s.

(173) 34. Minutes assumed as 56, not 55.

ZONE 174. JUNE 20. C. $D_0 = -23° 18' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	12.5	29.7	45.8	2.8	19.6	. .	15 0 46.15	+19.30	+1.36	IV.	5	52.699	− 6 8.89	−13.69	− 6.39	15 1 6.81	−23 24 28.97
2	8	. .	. .	54.2	11.	28.	4.7	. .	4 11.11	19.29	1.34	IV.	5	50.879	8 3.08	13.53	6.69	4 31.74	26 23.30
3	9	. .	. .	. .	. .	3.	20.3	. .	4 46.44	19.29	1.14	V.	3	29.712	30 17.88	13.50	10.05	5 6.87	48 41.43
4	9	. .	7.7	23.1	40.7	57.3	. .	. .	7 40.69	19.29	1.33	IV.	5	50.198	8 46.03	13.36	6.79	8 1.31	27 6.18
5	9	. .	. .	11.4	27.6	44.7	. .	. .	9 27.89	19.29	1.20	IV.	3	36.433	23 16.54	13.28	8.98	9 48.38	41 38.80
6	8	. .	. .	. .	1.6	18.2	34.7	. .	10 1.32	19.29	1.19	V.	3	35.355	24 24.00	13.25	9.15	10 21.80	42 46.40
7	8	. .	. .	. .	32.7	49.2	5.5	. .	10 32.29	19.29	1.19	V.	3	35.021	24 44.83	13.23	9.20	10 52.77	43 7.26
8	9.10	. .	. .	. .	20.2	36.8	. .	. .	14 20.06	19.29	1.28	V.	4	44.459	14 44.85	13.04	7.70	14 40.63	33 5.59
9	8.9	. .	24.4	41.3	58.5	15.5	. .	. .	19 58.36	19.29	1.06	IV.	3	23.107	37 12.48	12.76	11.10	20 18.71	55 36.34
10	9	. .	. .	. .	42.8	. .	16.	. .	20 42.54	19.29	1.29	VI.	4	46.153	12 58.63	12.72	7.43	21 3.12	31 18.78
11	8	. .	. .	. .	4.2	20.8	37.3	. .	23 3.95	19.29	1.37	V.	5	55.166	3 34.11	12.60	6.01	23 24.61	21 52.72
12	9	. .	. .	. .	. .	. .	57.	. .	23 23.37	19.29	1.35	VI.	5	52.708	6 8.20	12.58	6.39	23 44.01	24 27.17
13	9	. .	. .	. .	. .	. .	. .	. .	25	19.29	1.03	VII.	2	20.261	40 7.16	12.56	11.57	24 (16)	58 31.29
14	8.9	. .	. .	. .	. .	6.5	23.	. .	25 49.55	19.29	1.22	V.	3	39.079	20 30.18	12.46	8.55	26 10.06	38 51.19
15	9	. .	. .	. .	23.2	. .	. .	14.	27 23.26	19.29	1.31	VII.	4	48.842	10 9.83	12.38	7.00	27 43.86	28 29.21
16	9	. .	. .	. .	25.7	43.	. .	16.8	27 26.01	19.29	1.27	VII.	4	44.108	15 7.07	12.38	7.75	27 46.57	23 33 27.20
17	9	. .	. .	. .	. .	. .	. .	59.5	29 8.54	19.29	0.93	VI.	2	9.786	51 3.94	12.29	13.26	29 28.76	24 9 29.49
18	3	. .	. .	48.	4.3	. .	38.	. .	31 4.53	19.29	1.38	IV.	5	57.416	1 12.89	12.19	5.65	31 25.20	23 19 30.73
19	9	. .	. .	. .	45.	1.5	17.6	. .	32 44.52	19.29	1.12	V.	3	29.653	30 21.65	12.09	10.06	33 4.93	48 43.80
20	9	. .	. .	. .	. .	2.3	18.8	. .	33 45.35	19.29	1.13	V.	3	31.421	28 30.84	12.04	9.78	34 5.77	46 52.66
21	9	. .	. .	. .	3.2	20.2	36.5	. .	35 3.09	19.29	1.06	V.	3	23.767	36 30.83	11.97	11.00	35 23.44	54 53.80
22	9.10	. .	. .	. .	8.2	25.	. .	. .	37 8.14	19.29	1.20	V.	5	38.429	15 51.12	11.86	7.38	37 28.63	34 10.36
23	7	. .	39.3	56.3	12.6	29.5	46.3	. .	39 12.88	19.29	1.36	IV.	5	55.118	3 37.06	11.74	6.01	39 33.53	21 54.81
24	9	. .	. .	12.5	29.3	. .	. .	. .	41 29.32	19.29	1.27	III	4	44.951	14 12.97	11.61	7.62	41 49.88	23 32 32.20
25	7	. .	2.8	19.5	36.3	53.5	10.3	. .	44 36.50	19.29	0.97	IV.	2	14.198	46 27.14	11.44	12.54	44 56.76	24 4 51.12
26	7	. .	. .	. .	. .	. .	. .	30.5	44 39.92	19.29	1.28	VII.	5	45.930	13 13.45	11.44	7.47	45 0.49	23 31 32.36
27	9.10	. .	19.	. .	53.5	. .	. .	. .	46 53.10	19.29	1.30	II.	5	50.396	8 33.29	11.31	6.76	47 13.69	26 51.36
28	9	. .	41.3	58.4	15.3	32.1	. .	. .	50 15.22	19.28	1.14	IV.	3	32.602	27 16.81	11.12	9.58	50 35.64	45 37.51
29	8.9	. .	16.	33.2	50.2	6.3	. .	. .	51 49.85	19.28	1.09	IV.	3	28.182	31 54.19	11.02	10.29	52 10.22	50 15.58
30	9.10	. .	. .	. .	17.	. .	. .	. .	52 16.87	19.28	1.08	IV.	3	27.221	32 54.47	10.99	10.45	52 37.23	51 15.91
31	9.10	. .	. .	. .	. .	. .	56.	. .	52 22.42	19.28	1.06	VI.	3	24.749	35 28.98	10.99	10.85	52 42.76	53 50.82
32	9	. .	. .	. .	. .	55.8	12.7	. .	53 39.05	19.28	1.14	V.	3	33.192	26 39.67	10.91	9.49	53 59.47	45 0.07
33	8	. .	43.5	0.1	16.8	33.8	50.6	. .	56 16.99	19.28	1.11	IV.	3	29.967	30 2.07	10.74	10.00	56 37.38	48 22.81
34	9.10	. .	. .	19.2	36.2	. .	. .	. .	57 36.08	19.28	1.15	III.	3	33.679	26 9.24	10.66	9.42	57 56.51	44 29.32
35	9	. .	. .	. .	11.	28.5	. .	. .	58 11.30	19.28	1.26	V.	4	45.030	14 8.83	10.63	7.61	58 31.84	23 32 27.07
36	7	. .	. .	. .	. .	. .	. .	22.3	15 58 31.44	19.28	0.98	VII.	2	15.738	44 50.65	10.61	12.29	15 58 51.70	24 3 13.55
37	7	. .	15.6	32.5	49.2	6.2	23.2	40.	16 0 49.30	19.28	0.90	IV.	2	8.441	52 28.20	10.47	13.51	16 1 9.48	24 10 52.18
38	9	. .	17.2	34.	50.7	. .	. .	. .	2 50.86	19.29	1.27	III.	4	45.822	13 18.28	10.34	7.45	3 11.42	23 31 36.07
39	8	. .	. .	. .	24.2	41.2	58.2	. .	4 24.29	19.29	0.98	V.	2	16.942	43 35.14	10.23	12.12	4 44.56	24 1 57.49
40	9	. .	. .	. .	. .	. .	1.2	. .	4 27.63	19.29	1.07	VI.	3	26.518	33 38.13	10.23	10.57	4 47.99	23 51 58.93
41	8	. .	31.7	48.8	5.3	22.	39.5	. .	7 5.49	19.29	1.05	IV.	3	24.484	35 46.23	10.06	10.89	7 25.83	54 7.18
42	9.10	. .	. .	. .	55.	. .	. .	. .	7 54.87	19.29	1.09	IV.	3	27.708	32 23.79	10.00	10.38	8 15.25	50 44.17
43	9.10	. .	. .	. .	. .	43.5	. .	. .	8 26.65	19.29	1.12	V.	3	31.018	28 56.01	9.97	9.84	8 47.06	47 15.82
44	9	. .	8.8	26.2	. .	. .	. .	. .	10 42.92	19.29	1.00	III.	2	19.002	41 25.50	9.82	11.78	11 3.21	59 47.10
45	6	. .	. .	59.5	16.2	33.4	50.2	7.3	11 16.47	19.29	1.11	IV.	3	30.189	29 48.27	9.78	9.97	11 36.87	48 8.02
46	9	. .	. .	. .	. .	. .	32.2	. .	11 58.56	19.29	1.36	VI.	5	56.386	2 17.44	9.73	5.79	12 19.21	23 20 32.96
47	9.10	. .	. .	. .	. .	30.5	47.2	. .	13 13.53	19.29	0.97	IV.	2	17.511	42 59.45	9.65	12.02	13 33.79	24 1 21.12
48	9	. .	27.	44.	0.7	. .	. .	. .	16 0.86	19.29	0.94	III.	2	12.271	48 27.74	9.45	12.87	16 21.09	6 50.06
49	9	. .	1.8	18.7	35.5	. .	. .	. .	16 19 35.64	+19.29	+0.89	III.	2	7.812	−53 7.13	− 9.20	−13.61	16 19 55.82	−24 11 29.94

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 20,	0	. .	. .	. .	. .	. .	359 59 65.00	29.9977

REMARKS.

(174) 2. Time of transit over T. VI assumed as 44ˢ.7 instead of 4ˢ.7.

(174) 13. Time of transit assumed as 23ᵐ 57ˢ, on supposition of identity with Arg. Z. 301, 115.

(174) 22. Micrometer reading assumed as 43ʳ.429, not 38ʳ.429.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 174	June 20, 15 0	. .	. .	. .	. .	. .	. .	. .	29.870	78.8	73.8	78.5	76.8	80.2
	15 10	72 39 65.8	58.7	53.9	56.8	52.9	59.9	58.00						
	15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.			
	15 40	. .	. .	. .	. .	. .	. .	. .	29.848	77.7	73.4			
	16 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.1			
	16 20	65.2	59.1	53.8	57.8	52.1	59.5	57.92	29.854	77.	73.	77.	74.5	
	16 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.8			
	17 0	. .	. .	. .	. .	. .	. .	. .	29.856	76.2	72.5			
	17 20	63.9	59.2	53.4	57.8	51.4	58.9	57.43	29.858	76.	72.3	77.4	75.2	

ZONE 174. JUNE 20. C. $D_0 = -23° 18' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	10.2	27.	44.3	. .	. .	16 24 27.12	+19.29	+0.99	IV.	3	20.742	−39 40.76	− 8.84	−11.50	16 24 47.40	−23 58 1.10
51	9.10	. .	35.5	52.5	9.2	. .	. .	. .	29 9.26	19.29	1.09	III.	3	28.940	31 6.50	8.49	10.18	29 29.64	49 25.17
52	9	. .	20.5	37.3	54.2	. .	. .	. .	30 54.22	19.30	1.21	III.	4	41.909	17 23.91	8.36	8.09	31 14.73	23 35 40.36
53	9	. .	27.2	44.2	. .	. .	. .	. .	32 1.15	19.30	0.93	III.	2	12.774	47 56.01	8.27	12.80	32 21.38	24 6 17.08
54	7	. .	37.	. .	. .	27.5	44.3	. .	32 10.65	19.30	0.89	V.	2	8.949	51 56.35	8.26	13.42	32 30.84	24 10 18.03
55	9.10	. .	5.7	22.8	39.2	. .	. .	. .	34 39.44	19.30	1.15	III.	3	34.624	25 10.00	8.06	9.26	34 59.89	23 43 27.32
56	9	. .	47.5	4.5	21.3	. .	. .	. .	38 21.31	19.30	1.15	III.	3	36.109	23 36.81	7.78	9.01	38 41.76	41 53.60
57	9	. .	12.2	29.2	46.	2.5	. .	. .	40 45.93	19.30	1.18	IV.	3	39.165	20 25.04	7.58	8.53	41 6.41	38 41.15
58	9.10	. .	. .	5.4	. .	39.5	. .	. .	46 22.47	19.30	1.11	IV.	3	31.608	28 19.18	7.10	9.74	46 42.88	46 36.02
59	9	. .	46.3	3.8	20.5	. .	. .	. .	49 20.40	19.31	1.12	III.	3	33.179	26 40.73	6.85	9.50	49 40.83	44 57.08
60	9	. .	. .	. .	. .	43.2	0.5	. .	50 26.66	19.31	1.24	V.	5	46.975	12 8.26	6.83	7.29	49 47.21	23 30 22.38
61	8	. .	28.6	45.2	. .	19.5	. .	. .	54 2.38	19.31	0.96	IV.	2	17.582	42 54.94	6.43	12.01	54 22.65	24 1 13.38
62	9	. .	. .	. .	. .	. .	45.7	. .	54 12.03	19.31	0.94	VI.	2	14.487	46 9.34	6.41	12.51	54 32.28	4 28.26
63	8	. .	. .	. .	. .	. .	33.4	. .	54 59.75	19.31	0.95	IV.	2	17.429	43 4.60	6.33	12.04	55 20.01	24 1 22.97
64	9	. .	. .	. .	. .	. .	. .	46.5	55 55.92	19.31	1.24	VII.	5	47.298	11 47.84	6.25	7.23	56 16.47	23 30 1.32
65	10	. .	. .	28.5	. .	. .	. .	. .	58 45.49	19.32	1.26	III.	5	49.168	9 50.60	6.00	6.93	59 6.07	28 3.53
66	10	. .	. .	. .	. .	16.3	. .	. .	58 59.58	19.32	1.31	V.	5	53.660	5 8.60	5.97	6.18	59 20.21	23 20.75
67	9	. .	. .	. .	. .	. .	. .	20.5	16 59 29.90	19.32	1.09	VII.	3	30.729	29 13.44	5.93	9.89	16 59 50.31	47 29.26
68	9	. .	. .	. .	. .	. .	9.3?	. .	17 0 35.75	19.32	1.07	VI.	3	29.299	30 43.73	5.83	10.12	17 0 56.14	48 59.68
69	9	. .	42.5	. .	18.8	35.5	. .	. .	5 18.54	19.32	1.04	IV.	3	25.675	34 31.40	5.37	10.71	5 38.90	23 52 47.48
70	7	. .	58.1	14.8	31.8	48.5	. .	. .	8 31.75	19.32	0.91	IV.	2	12.095	48 38.78	5.06	12.93	8 51.98	24 6 56.77
71	9	. .	58.	14.7	. .	48.4	. .	. .	8 31.65	19.32	0.91	IV.	2	12.158	48 35.08	5.06	12.92	8 51.88	24 6 53.06
72	9	. .	. .	. .	. .	. .	0.2	28.5	8 37.21	19.32	1.02	VI.	3	24.440	35 48.55	5.06	10.90	8 57.55	23 54 4.51
73	9	. .	. .	22.5	38.5	55.5	. .	. .	12 38.89	19.33	1.29	IV.	5	51.932	6 56.98	4.66	6.47	12 59.51	25 8.11
74	8	. .	1.5	18.	34.5	51.7	. .	. .	14 34.88	19.33	1.14	IV.	3	36.152	23 34.11	4.45	9.01	14 55.35	41 47.57
75	9	. .	. .	. .	22.5	39.5	55.8	. .	15 22.42	19.33	1.09	V.	3	31.282	28 39.57	4.37	9.80	15 42.84	23 46 53.74
76	5	. .	. .	35.2	52.	9.5	25.7	. .	16 52.15	19.33	0.95	IV.	2	16.915	43 30.64	4.22	12.14	17 12.43	24 1 53.00
77	9	. .	47.2	4.5	20.5	. .	. .	. .	21 20.94	19.34	1.12	III.	3	34.896	24 52.81	3.76	9.22	21 41.40	23 43 5.79
78	7	. .	. .	. .	55.2	12.1	29.5	. .	17 21 55.41	+19.34	+1.05	V.	3	27.889	−32 12.25	− 3.69	−10.35	17 22 15.80	−23 50 26.29

ZONE 175. JUNE 24. C. $D_0 = -22° 40' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	11.5	28.2	45.2	2.4	18.8	. .	15 0 45.25	+21.51	+0.17	IV.	2	17.004	−43 31.06	−15.06	− 6.04	15 1 6.93	−23 24 32.16
2	7.8	. .	. .	53.7	10.3	27.4	. .	. .	4 10.42	21.51	0.14	IV.	2	15.240	45 21.88	15.03	6.33	4 32.07	23 26 23.24
3	9	. .	. .	. .	. .	. .	13.?	. .	4 39.57	21.51	0.48	VI.	4	41.829	17 29.92	15.02	2.15	5 1.56	22 58 27.09
4	8.9	. .	. .	23.3	. .	57.	13.7	. .	7 40.14	21.51	0.12	IV.	2	14.530	46 6.33	14.97	6.43	8 1.77	23 27 7.73
5	8	. .	8.2	25.3	. .	. .	. .	. .	15 42.02	21.50	0.48	III.	4	41.916	17 23.46	14.81	2.14	16 4.00	22 58 20.41
6	8	. .	. .	28.7	45.2	2.2	18.3	. .	15 45.27	21.50	0.60	IV.	5	50.536	8 24.82	14.81	0.80	16 7.37	22 49 20.43
7	9	. .	. .	25.5	41.3	. .	15.5	. .	20 41.88	21.49	0.08	IV.	2	10.472	50 20.85	14.68	7.07	21 3.45	23 31 22.60
8	8	. .	. .	39.7	56.3	13.6	30.1	. .	21 56.55	21.49	0.36	IV.	3	32.627	27 15.25	14.63	3.58	22 18.40	8 13.46
9	8	. .	. .	. .	3.2	. .	. .	. .	23 3.12	21.49	0.20	IV.	2	19.464	40 56.97	14.59	5.65	23 24.81	21 57.21
10	9	. .	. .	. .	. .	. .	55.8	. .	23 22.32	21.49	0.18	VI.	2	16.945	43 35.01	14.58	6.05	23 43.99	23 24 35.64
11	9	. .	. .	. .	. .	. .	. .	54.7	23 4.36	21.49	0.50	VII.	4	43:032	16 14.61	14.59	1.96	23 26.35	22 57 11.16
12	9	. .	48.7	5.8	. .	. .	56.5?	. .	27 22.72	21.48	0.10	III.	2	12.169	48 34.08	14.44	6.81	27 44.30	23 29 35.33
13	9	. .	. .	. .	25.	. .	59.5	. .	27 25.46	21.48	0.07	VI.	2	8.397	52 31.20	14.44	7.40	27 47.01	33 33.04
14	9	. .	. .	39.5	. .	. .	. .	. .	29 56.39	21.48	0.12	III.	2	13.841	46 49.10	14.35	6.54	30 17.99	27 49.99
15	9	. .	. .	5.3	. .	. .	. .	. .	30 22.13	21.48	0.24	III.	3	22.901	37 25.34	14.34	5.11	30 43.85	18 24.79
16	9	. .	. .	. .	. .	46.5	. .	. .	15 30 29.68	+21.48	+0.30	V.	3	27.294	−32 49.76	−14.33	− 4.42	15 30 51.46	−23 13 48.51

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 24,	0	. .	. .	. .	. .	. .	359 59 64.68	30.0043

REMARKS.

(174) 60. Minutes assumed as 49, not 50.
(174) 72. Time of transit over T. VI assumed as 10^s.2 instead of 0^s.2.
(175) 11. Minutes should probably be 24, not 23; *vide* Arg. Z. 209, 56.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 175	June 24, 15 0	72 2 {39.7 / 40.2}	32. / 31.9	37. / 37.7	32.1 / 34.1	29.1 / 29.5	35.0 / 36.0	34.52	30.106	79.5	72.9	79.5	78.8	80.
	15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.2			
	15 40	. .	. .	. .	. .	. .	. .	. .	30.100	77.5	70.4			
	16 0	{38.5 / 39.3}	33. / 33.1	37.5 / 37.7	33. / 34.2	29.9 / 30.3	34.2 / 35.5	34.68	. .	. .	70.1	76.5	75.3	
	16 20	. .	. .	. .	. .	. .	. .	. .	30.102	76.	68.9			
	16 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.8			

ZONE 175. JUNE 24. C. $D_0 = -22° 40' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
17	8	. .	. .	47.	. .	20.5	37.3	. .	15 31 3.77	+21.48	+0.24	V.	3	21.796	−38 34.46	−14.31	− 5.29	15 31 25.49	−23 19 34.06
18	9	. .	. .	. .	41.2	58.	. .	. .	32 41.22	21.48	0.64	V.	5	52.683	6 9.88	14.23	0.45	33 3.34	22 47 4.56
19	9	. .	42.1	59.	15.2	. .	. .	. .	36 15.57	21.48	0.47	III.	3	38.646	20 57.61	14.08	2.64	36 37.52	23 1 54.33
20	7.8	. .	38.4	55.2	11.8	. .	45.5	. .	39 11.99	21.47	0.22	IV.	2	19.432	40 58.96	12.94	5.66	39 33.68	21 58.56
21	9	. .	. .	. .	. .	. .	9.4	. .	39 35.99	21.47	0.33	IV.	3	27.984	32 6.48	13.93	4.30	39 57.79	23 13 4.71
22	9	. .	. .	. .	25.5	42.1	. .	. .	41 25.42	21.47	0.63	V.	5	52.020	6 51.53	13.84	0.56	41 47.52	22 47 45.93
23	7	. .	5.5	22.1	39.3	56.	12.8	. .	44 39.16	21.47	0.09	IV.	2	10.237	50 35.59	13.69	7.12	45 0.72	23 31 36.40
24	9	. .	. .	45.3	2.3	. .	. .	. .	46 2.19	21.47	0.56	III.	5	44.798	14 24.70	13.62	1.67	46 24.22	22 55 19.99
25	9	. .	. .	36.3	53.1	9.8	. .	. .	46 53.06	21.47	0.45	IV.	4	38.470	21 0.37	13.58	2.67	47 14.98	23 1 56.62
26	9	. .	. .	. .	. .	. .	. .	42.5	46 51.87	21.47	0.15	VII.	2	14.684	45 56.80	13.58	6.40	47 13.49	26 56.78
27	8	. .	. .	. .	32.3	49.5	6.	. .	48 32.50	21.47	0.43	V.	3	35.387	24 21.99	13.50	3.17	48 54.40	23 5 18.66
28	9	. .	55.4	12.1	29.	. .	. .	. .	53 29.01	21.47	0.67	III.	5	54.182	4 35.77	13.24	0.21	53 51.15	22 45 29.22
29	8	. .	27.2	44.	1.	. .	34.5	. .	56 0.92	21.46	0.29	IV.	3	24.957	34 13.56	13.10	4.62	56 22.67	23 15 11.28
30	7.8	. .	. .	31.3	48.2	5.7	22.1	. .	56 48.44	21.46	0.35	IV.	3	29.428	30 36.07	13.06	4.08	57 10.25	11 33.21
31	9.10	. .	. .	. .	. .	51.	7.2	. .	57 33.98	21.46	0.33	V.	3	26.938	33 11.91	13.01	4.48	57 55.77	14 9.40
32	7.8	. .	51.3	7.8	25.1	41.8	58.5	. .	59 24.93	21.46	0.28	IV.	3	24.412	35 50.76	12.91	4.87	59 46.67	23 16 48.54
33	9.10	. .	. .	. .	. .	. .	39.3	. .	15 59 5.83	21.46	0.66	VI.	5	53.162	5 39.81	12.93	0.38	15 59 27.95	22 46 33.12
34	10	. .	. .	. .	57.?	. .	. .	. .	16 1 56.89	21.46	0.63	IV.	5	51.368	7 33.09	12.77	0.64	16 2 18.98	22 48 26.50
35	9	. .	. .	. .	. .	6.5	23.5	. .	2 49.72	21.46	0.10	V.	2	10.115	50 43.30	12.72	7.16	3 11.28	23 31 43.18
36	8.9	. .	8.1	24.7	41.5	. .	. .	. .	4 41.61	21.46	0.21	III.	2	18.239	42 13.49	12.61	5.87	5 3.28	23 23 11.97
37	9.10	. .	. .	43.2	0.1	. .	. .	. .	7 0.08	21.46	0.65	III.	5	52.909	5 55.51	12.47	− 0.39	7 22.19	22 46 48.37
38	9	. .	. .	. .	34.5	51.3	8.	. .	7 34.53	21.46	0.69	V.	5	55.650	3 3.66	12.44	+ 0.02	7 56.68	43 56.08
39	8	. .	. .	52.5	9.	25.5	42.6	. .	9 9.06	21.46	0.56	IV.	4	45.988	13 8.38	12.35	− 1.48	9 31.08	22 54 2.21
40	8	. .	. .	. .	58.	15.2	31.7	. .	11 58.16	21.46	0.24	V.	2	20.698	39 39.57	12.18	5.48	12 19.86	23 20 37.23
41	8.9	. .	. .	15.5	32.	48.8	5.5	. .	13 32.13	21.46	0.67	IV.	5	54.102	4 40.85	12.08	0.20	13 54.26	22 45 33.13
42	8	. .	29.3	. .	3.	. .	. .	. .	16 2.92	21.46	0.41	II.	3	34.189	25 37.27	11.92	3.33	16 24.79	23 6 32.52
43	7	. .	40.6	. .	14.	30.8	. .	4.6	16 14.10	21.46	0.42	IV.	3	34.886	24 53.37	11.91	3.22	16 35.98	5 48.50
44	9	. .	40.6	. .	14.	30.8	. .	4.6	16 14.10	21.46	0.46	IV.	3	37.301	22 22.07	11.91	2.85	16 36.03	3 16.83
45	9	. .	. .	33.5	50.3	7.2	. .	. .	31 50.33	21.45	0.50	IV.	3	38.835	20 45.55	10.87	2.85	32 12.28	23 1 39.27
46	9	. .	53.5	10.1	26.5	43.7	. .	. .	34 26.90	21.45	0.63	IV.	5	49.421	9 34.87	10.69	0.94	34 48.98	22 50 26.50
47	8	. .	11.8	29.2	45.3	2.5	. .	. .	35 45.64	21.45	0.58	IV.	4	46.016	13 6.62	10.59	1.48	36 7.67	22 53 58.69
48	9	. .	. .	18.2	. .	. .	8.2	. .	40 34.90	21.45	0.38	VI.	3	29.970	30 1.44	10.25	4.00	40 56.73	23 10 55.69
49	8	. .	52.	8.8	25.5	42.5	59.3	. .	45 25.65	21.45	0.31	IV.	3	25.466	34 44.59	9.88	4.70	45 47.41	23 15 39.17
50	7	. .	49.4	7.	23.8	40.4	57.	13.8	47 23.56	21.45	0.59	IV.	5	45.611	13 33.90	9.73	1.54	47 45.60	22 54 25.17
51	9	. .	. .	9.	26.	42.5	. .	. .	49 25.78	21.45	0.12	IV.	2	11.246	49 32.33	9.58	6.99	49 47.35	23 30 28.90
52	9	. .	38.2	55.	. .	29.	. .	. .	51 11.96	21.45	0.31	IV.	3	24.137	36 7.87	9.45	4.93	51 33.72	17 2.25
53	8.9	. .	. .	26.2	43.	59.3	. .	. .	52 42.81	21.45	0.48	IV.	3	36.804	22 53.01	9.34	2.93	53 4.74	23 3 45.28
54	8	. .	. .	39.5	56.	. .	29.8	. .	53 56.21	21.45	0.57	IV.	4	44.175	15 2.24	9.24	1.76	54 18.23	22 55 53.24
55	8	. .	. .	. .	1.5	18.4	35.5	. .	55 1.69	21.45	0.39	V.	3	30.465	29 30.82	9.14	3.93	55 23.53	23 10 23.89
56	9	. .	. .	. .	. .	. .	12.	. .	55 38.48	21.45	0.15	VI.	2	11.582	49 11.44	9.10	6.93	56 0.08	30 7.47
57	10	. .	. .	. .	42.?	. .	. .	. .	58 41.95	21.45	0.17	IV.	2	13.542	47 8.29	8.86	6.62	59 3.57	28 3.77
58	10	. .	. .	. .	. .	. .	31.8	. .	58 58.33	21.45	0.24	VI.	2	17.948	42 32.11	8.84	5.91	16 59 20.02	23 26.86
59	9	. .	. .	. .	. .	. .	. .	. .	16 59	21.45	0.51	VII.	4	38.922	20 32.50	8.67	− 2.59	17 0	23 1 23.76
60	9	. .	. .	. .	. .	14.7	30.5	. .	17 2 57.54	21.45	0.72	V.	5	55.347	3 22.80	8.51	+ 0.01	3 19.71	22 44 11.30
61	9	. .	. .	48.8	. .	. .	. .	. .	12 5.75	21.45	0.69	III.	5	53.452	5 21.67	7.76	− 0.27	12 27.89	22 46 9.70
62	9	. .	. .	. .	. .	54.3	11.7	. .	12 37.78	21.45	0.20	V.	2	16.254	44 18.47	7.71	6.21	12 59.43	23 25 12.39
63	8	. .	. .	. .	46.2	3.	20.	. .	13 46.32	21.45	0.63	V.	5	48.292	10 45.75	7.61	1.09	14 8.40	22 51 34.45
64	8.9	. .	. .	18.	34.8	51.7	8.2	. .	16 34.82	21.45	0.51	IV.	3	38.649	20 57.36	7.37	2.62	16 56.78	23 1 47.35
65	9	. .	49.7	7.	23.3	40.7	. .	. .	17 19 23.57	+21.45	+0.30	IV.	3	22.504	−37 50.37	− 7.13	− 5.20	17 19 45.32	−23 18 42.70

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(175) 29. Micrometer reading assumed as $25^r.957$, not $24^r.957$.

(175) 33. Right ascension differs 1^m from Arg. Z. 387, 49; should probably be $16^h\ 0^m$.

[(175) 59. 16^s after wire VII.]

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 175	June 24, 17 0	72 2 {38.2 38.1	33.8 33.9	37.2 37.6	33.2 34.4	30.0 30.0	34.5 35.2	34.67	30.100	74.3	68.4	76.2	75.7	
	17 20	. . .	. .	. .	. .	. .	. .	. .	. . .	. .	67.9			
	17 40	. . .	. .	. .	. .	. .	. .	. .	30.100	72.5	67.3			
	18 0	{38.1 38.2	33.1 32.9	37.5 38.1	33.9 34.4	30.0 29.7	33.8 34.2	34.49	30.098	72.	67.	74.8	72.8	79.2

Zone 175. June 24. C. $D_0 = -22° 40' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
66	9.10	. .	. .	22.7	39.5	. .	. .	. .	17 20 39.50	+21.46	+0.66	III.	5	50.191	− 8 46.34	− 7.03	− 0.79	17 21 1.62	−22 49 34.16
67	8	. .	2.3	18.3	35.1	52.2	8.3	. .	24 35.30	21.46	0.59	IV.	4	44.913	14 15.78	6.68	1.63	24 57.35	22 55 4.09
68	9	. .	. .	2.	18.5	35.3	. .	. .	28 18.55	21.46	0.31	IV.	3	23.688	36 35.98	6.36	5.02	28 40.32	23 17 27.36
69	9.10	. .	54.5	11.5	28.2	. .	. .	. .	30 28.21	21.46	0.55	III.	4	41.861	17 26.86	6.16	2.12	30 50.22	22 58 15.14
70	8	. .	. .	36.	52.5	9.2	26.	. .	32 52.53	21.46	0.33	IV.	3	24.852	35 22.89	5.94	4.83	33 14.32	23 16 13.66
71	9.10	. .	. .	. .	37.4	54.	. .	. .	35 37.31	21.46	0.67	V.	5	50.636	8 18.50	5.69	0.72	35 59.44	22 49 4.91
72	9.10	. .	. .	7.1	23.2	40.5	. .	. .	38 23.61	21.46	0.60	IV.	4	45.308	13 51.18	5.43	1.56	38 45.67	22 54 38.17
73	8	. .	. .	. .	. .	10.2	27.2	. .	38 53.60	21.46	0.42	V.	3	30.397	29 35.09	5.39	3.94	39 15.48	23 10 24.42
74	8	. .	. .	. .	. .	8.2	25.2	. .	39 51.54	21.46	0.30	V.	3	22.405	37 56.45	5.30	5.22	40 13.30	18 46.97
75	8.9	. .	. .	. .	. .	3.5	20.2	. .	40 46.76	21.46	0.48	V.	3	35.912	23 48.84	5.22	3.06	41 8.70	23 4 37.12
76	8	. .	. .	. .	. .	56.2	12.8	. .	41 39.44	21.47	0.62	V.	4	47.696	11 21.50	5.14	1.18	42 1.53	22 52 7.82
77	9	. .	58.8	15.7	32.4	49.1	. .	. .	45 32.43	21.47	0.57	IV.	4	43.261	15 59.67	4.76	1.89	45 54.47	22 56 46.32
78	8	. .	. .	44.	0.5	17.2	. .	. .	47 0.52	21.47	0.29	IV.	2	19.595	40 48.69	4.62	5.67	47 22.28	23 21 38.98
79	8.9	. .	6.1	23.	39.4	56.3	. .	. .	49 39.59	21.47	0.32	IV.	3	23.326	36 58.87	4.37	5.07	50 1.38	17 48.31
80	9	. .	6.8	23.8	40.5	57.2	. .	. .	51 40.48	21.47	0.15	IV.	2	9.179	51 41.86	4.18	7.35	52 2.10	32 33.39
81	8.9	. .	. .	. .	16.5	33.5	. .	. .	16.54	21.47	0.42	V.	3	29.662	30 21.08	4.14	4.06	(52) 38.43	11 9.28
82	9	. .	. .	. .	. .	11.5	28.2	. .	52 54.76	21.47	0.52	V.	4	38.	21	4.05	2.72	53 16.75	1 46.77
83	8	. .	. .	. .	. .	11.7	28.6	. .	52 55.06	21.47	0.54	V.	4	38.857	20 36.20	4.05	2.59	53 17.07	23 1 22.84
84	8	. .	. .	. .	. .	25.	. .	. .	54 8.28	21.47	0.57	V.	4	42.052	17 15.82	3.93	2.09	54 30.32	22 58 1.84
85	7	. .	. .	. .	. .	2.7	18.5	. .	54 45.54	21.47	0.67	V.	5	49.633	9 21.42	3.86	0.87	55 7.68	22 50 6.15
86	8	. .	43.5	0.2	16.8	. .	50.8	. .	58 17.06	21.48	0.47	III.	3	33.612	26 13.49	3.51	3.42	58 39.01	23 7 0.42
87	7.8	. .	. .	. .	22.8	39.3	. .	. .	58 22.64	21.48	0.64	V.	4	46.362	12 45.39	3.50	1.40	58 44.76	22 53 30.29
88	8	. .	. .	. .	32.8	49.3	6.4	23.2	59 32.78	21.48	0.62	V.	4	45.498	13 39.58	3.39	1.53	59 54.88	22 54 24.50
89	8.9	. .	. .	. .	. .	. .	. .	10.5	17 59 19.85	21.48	0.21	VII.	2	13.897	46 46.09	3.41	6.59	17 59 41.54	23 27 36.09
90	8.9	. .	. .	. .	. .	56.	12.6	. .	18 1 39.11	21.48	0.28	V.	2	18.749	41 41.80	3.19	5.84	18 2 0.87	22 30.83
91	7.8	. .	0.5	17.5	34.	50.8	7.5	. .	18 3 34.09	+21.48	+0.44	IV.	3	31.836	−28 4.75	− 2.98	− 3.71	18 3 56.01	−23 8 51.44

Zone 176. June 26. S. $D_0 = -26° 25' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	52.	. .	27.	. .	. .	16 33 9.52	+20.09	+0.76	III.	3	32.170	−27 43.95	−20.48	− 3.61	16 33 30.37	−26 53 48.04
2	4	. .	. .	21.	. .	38.	. .	. .	34 38.16	20.09	0.61	III.	2	16.514	44 1.66	20.38	6.44	34 58.86	27 10 8.48
3	7	. .	. .	. .	. .	. .	45.5	3.	35 10.88	20.09	0.62	.	2	16.410	44 8.75	20.35	6.46	35 31.59	10 15.56
4	7	. .	. .	. .	. .	14.	31.5	. .	36 56.73	20.09	0.60	.	2	14.603	46 1.86	20.25	6.79	37 17.42	27 12 8.90
5	8	16.5	. .	. .	. .	. .	. .	. .	42 8.32	20.09	0.72	.	6	28.334	31 37.49	19.90	4.31	42 29.13	26 57 41.70
6	5	. .	. .	. .	13.	. .	. .	. .	42 12.89	20.09	0.95	.	5	48.368	10 40.97	19.90	0.72	42 33.93	36 41.59
7	6	. .	. .	. .	. .	. .	14.	. .	42 39.54	20.09	0.87	.	4	40.108	19 18.01	19.87	2.19	43 0.50	26 45 20.07
8	7	. .	. .	. .	. .	. .	. .	38.	44 45.64	20.09	0.57	.	1	8.020	52 54.91	19.73	7.99	45 6.30	27 19 2.63
9	8	. .	. .	2.	. .	. .	. .	. .	47 19.40	20.09	0.92	.	5	42.782	16 31.24	19.57	1.72	47 40.41	26 42 32.53
10	9	. .	. .	. .	. .	8.5	. .	. .	48 51.21	20.09	0.82	.	3	33.515	26 19.46	19.48	3.37	49 12.12	52 22.31
11	9	. .	. .	. .	. .	. .	18.	. .	49 43.56	20.09	0.79	.	3	29.482	30 32.18	19.42	4.10	50 4.44	26 56 35.70
12	6	. .	. .	21.	. .	. .	13.	. .	51 38.44	20.09	0.76	III.	3	24.966	35 15.80	19.30	4.92	51 59.29	27 1 20.02
13	8	. .	. .	. .	. .	. .	39.	. .	52 4.54	20.09	0.92	.	6	41.773	17 34.57	19.27	1.90	52 25.55	26 43 35.74
14	5	. .	. .	. .	. .	. .	59.	. .	53 24.55	20.09	0.84	.	3	33.342	26 30.00	19.18	3.41	53 45.48	52 32.59
15	8	. .	. .	. .	. .	. .	10.	27.5	54 35.57	20.09	0.94	VI.	4	42.835	16 26.72	19.10	1.71	54 56.60	42 27.53
16	9	. .	22.	39.	. .	. .	31.	. .	16 58 56.55	20.09	0.99	.	5	47.098	12 0.20	18.90	0.95	16 59 17.63	38 0.05
17	8	. .	22.	. .	57.	. .	. .	. .	17 0 56.79	20.09	0.90	IV.	4	37.014	22 31.61	18.69	2.73	17 1 17.78	48 33.03
18	4	. .	. .	13.5	. .	48.	. .	. .	2 30.78	20.09	0.89	III.	4	34.718	24 55.19	18.59	3.15	2 51.76	50 56.93
19	8	. .	. .	. .	. .	. .	29.5	. .	17 2 55.05	+20.09	+0.90	.	4	35.802	−23 48.13	−18.56	− 2.95	17 3 16.04	−26 49 49.64

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 26,	0	. .	. .	. .	. .	. .	359 59 62.20	29.9988

REMARKS.

(175) 85. Declination differs 20′ from Arg. Arg. Z. 224, 33, and 307, 44; probably another star.

(176) 2. Transit over T. IV assumed to have been recorded as over T. V.

INSTRUMENT READINGS.

	Date.		Circle. A.		B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 176	June 26,	16 15	75 47	28.4 30.0	22.4 22.4	28.2 29.2	21.8 23.5	21.5 22.5	25.2 26.6	25.14	30.118	78.8	74.0	79.	79.	
		16 34		. .	. .	. .	. .	. .	. .	. .	30.120	77.5	70.3	. .	. .	77.5
		17 25		. .	. .	. .	. .	. .	. .	. .	30.119	77.2	70.3			
		17 45		. .	. .	. .	. .	. .	. .	. .	30.116	76.8	69.			
		18 12		. .	. .	. .	. .	. .	. .	. .	[a]30.016	76.2	68.8	. .	. .	. .
		18 19		. .	. .	. .	. .	. .	. .	. .	30.116	75.8	68.			
		20 0		28.5 30.0	25. 24.5	30. 31.	23.8 25.2	22. 23.	24.8 26.2	26.16	30.110	75.	67.9	78.8	76.	

[a] Assumed as 30.116 inches.

ZONE 176. JUNE 26. S. $D_0 = -26° 25' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	5	. .	. .	. .	33.	. .	7.8	. .	17 4 33.10	+20.09	+0.91	IV.	4	37.676	−21 50.09	−18.46	− 2.61	17 4 54.10	−26 47 51.16
21	7	. .	37.	54.	. .	. .	. .	. .	11 11.62	20.09	0.73	III.	2	15.603	44 58.73	18.01	6.62	11 32.44	27 11 3.36
22	5	. .	. .	. .	. .	39.8	. .	. .	11 22.26	20.09	0.69	.	1	11.229	49 33.30	18.00	7.43	11 43.04	27 15 38.73
23	9	. .	. .	36.	. .	. .	. .	. .	14 53.37	20.09	0.96	.	4	38.699	20 45.36	17.77	2.43	15 14.42	26 46 45.56
24	9	. .	. .	34.	. .	8.	. .	. .	18 8.25	20.09	1.07	III.	6	49.090	9 55.40	17.50	0.57	19 29.41	26 35 53.47
25	9	. .	. .	33.	. .	7.	. .	. .	20 49.98	20.09	0.80	III.	3	36.601	38 47.07	17.35	5.56	21 10.87	27 4 49.98
26	8	. .	29.5	47.	5.	. .	. .	. .	25 4.50	20.10	1.07	IV.	4	47.212	11 51.66	17.06	0.90	25 25.67	26 37 49.62
27	9	. .	46.	. .	. .	. .	. .	. .	27 20.74	20.10	0.89	.	3	26.328	33 50.49	16.90	4.68	27 41.73	59 52.07
28	6	31.5	. .	56.	23.	. .	. .	. .	29 23.14	20.10	0.98	III.	4	35.129	24 29.52	16.75	3.07	29 44.22	26 50 29.34
29	9	. .	33.	. .	8.	. .	. .	. .	31 7.92	20.10	0.72	II.	2	8.449	52 26.94	16.63	7.96	31 28.74	27 18 31.53
30	6	. .	. .	5.	. .	39.8	. .	. .	32 22.47	20.10	1.02	III.	4	39.654	19 45.49	16.54	2.26	32 43.59	26 45 44.29
31	8	. .	26.5	. .	1.5	. .	. .	. .	35 1.36	20.10	0.82	IV.	2	17.195	43 19.20	16.34	6.34	35 22.28	27 9 21.88
32	6	. .	. .	1.	. .	35.	. .	. .	36 18.02	20.10	0.96	III.	3	31.693	28 13.85	16.25	3.70	36 39.08	26 54 13.80
33	3	. .	9.5	27.	44.5	. .	. .	. .	38 44.30	20.10	0.97	IV.	3	31.040	28 54.75	16.07	3.82	39 5.37	26 54 54.64
34	4	. .	3.	. .	37.	. .	. .	. .	40 37.32	20.10	0.92	IV.	3	25.780	34 24.68	15.93	4.77	40 58.34	27 0 25.38
35	6	. .	. .	. .	. .	. .	57.	. .	40 22.54	20.10	1.06	.	5	39.980	19 27.17	15.94	2.19	40 43.70	26 45 25.30
36	6	. .	. .	. .	21.5	. .	. .	. .	42 21.36	20.10	1.02	IV.	4	34.742	24 54.12	15.80	3.15	42 42.48	26 50 53.07
37	4	. .	. .	32.	49.	7.	. .	. .	43 49.28	20.10	0.80	IV.	2	12.242	48 29.95	15.68	7.25	44 10.18	27 14 32.88
38	7	. .	19.	. .	54.	. .	. .	. .	45 53.79	20.11	1.00	IV.	3	32.038	27 52.14	15.51	3.64	46 14.90	26 53 51.29
39	4	. .	. .	. .	41.5	. .	16.	. .	46 41.46	20.11	1.09	IV.	4	40.932	18 25.66	15.46	2.03	47 2.66	26 44 23.15
40	8	. .	. .	. .	. .	. .	. .	5.	47 12.87	20.11	0.89	.	2	19.965	40 25.45	15.42	5.83	47 33.87	27 6 26.73
41	6	. .	17.5	. .	. .	. .	. .	. .	49 52.27	20.11	0.93	.	2	23.151	37 4.89	15.22	5.27	50 13.31	27 3 5.38
42	8	. .	5.	. .	. .	56.5	. .	. .	51 39.45	20.11	0.98	III.	3	27.362	32 45.75	15.07	4.49	52 0.54	26 58 45.31
43	8	. .	. .	. .	. .	19.	. .	. .	53 1.59	20.11	0.94	.	3	22.090	38 16.09	14.96	5.46	53 22.64	27 4 16.51
44	6	. .	. .	. .	. .	14.	. .	. .	53 56.71	20.11	1.05	.	4	33.778	25 54.92	14.89	3.32	54 17.87	26 51 53.13
45	5	. .	. .	. .	. .	. .	20.8	. .	54 46.35	20.11	1.05	.	4	34.702	24 57.20	14.82	3.15	55 7.51	50 55.17
46	7	. .	. .	. .	14.	. .	. .	. .	56 13.86	20.12	0.99	.	3	27.358	32 45.94	14.70	4.49	56 34.97	58 45.13
47	8	. .	. .	. .	. .	. .	8.	. .	17 56 33.54	20.12	1.11	.	4	37.788	21 43.47	14.67	2.59	17 56 54.77	26 47 40.73
48	8	. .	59.5	17.	. .	. .	9.	. .	18 3 34.40	20.12	0.88	III.	2	12.952	47 44.85	14.10	7.15	18 3 55.40	27 13 46.10
49	3	. .	44.	2.	19.	36.	. .	. .	8 18.90	20.12	0.97	IV.	2	20.868	39 28.65	13.70	5.69	8 30.99	27 5 28.04
50	6	. .	8.	. .	. .	0.	. .	. .	12 42.70	20.13	1.05	II.	3	2.756	32 33.12	13.32	4.45	13 3.88	26 58 30.89
51	6	. .	. .	. .	. .	. .	21.	38.5	11 46.54	20.13	1.05	VI.	3	27.562	32 32.57	13.40	4.45	12 7.72	58 30.42
52	.	. .	. .	. .	. .	. .	. .	49.	14 57.07	20.13	1.29	.		. . .	. . .	. .	. .	15	(37)
53	5	. .	. .	. .	1.5	. .	. .	. .	18 1.38	20.13	1.25	.	4	47.188	17 6.87	12.86	0.89	18 22.76	43 0.62
54	4	. .	. .	. .	. .	. .	58.	. .	18 23.55	20.13	1.15	.	3	35.208	24 32.90	12.83	3.05	18 44.83	50 28.78
55	5	. .	. .	. .	. .	. .	50.	. .	19 15.54	20.13	1.19	.	4	39.889	14 17.92	12.76	2.21	19 36.86	40 12.89
56	6	. .	58.	. .	32.5	. .	. .	. .	22 32.54	20.14	1.29	IV.	5	49.400	9 36.19	12.47	0.49	22 53.97	35 29.15
57	7	. .	. .	. .	24.	. .	58.5	. .	31 23.96	20.14	1.17	IV.	3	33.358	26 29.50	11.68	3.40	31 45.27	52 24.58
58	8	. .	. .	. .	. .	11.	. .	. .	32 53.77	20.14	1.24	.	4	40.792	18 34.76	11.55	2.04	33 15.15	26 44 28.35
59	1	. .	22.	39.	. .	13.5	. .	. .	35 56.41	20.15	1.02	III.	2	17.102	42 21.99	11.28	6.20	36 17.58	27 8 19.47
60	8	. .	37.5	. .	. .	12.	. .	. .	37 54.68	20.15	0.98	.	1	12.182	48 31.69	11.16	7.29	38 15.81	14 30.14
61	9	. .	. .	. .	. .	18.	. .	. .	39 0.63	20.15	1.12	.	3	25.470	34 44.19	11.00	4.82	39 21.90	27 0 40.01
62	6	. .	21.5	38.5	46.	. .	. .	. .	40 55.97	20.15	1.16	IV.	3	29.789	30 13.17	10.83	4.05	41 17.28	26 56 8.05
63	4	. .	13.	. .	47.5	4.5	. .	. .	42 47.44	20.16	1.23	IV.	3	36.326	23 23.26	10.66	2.86	43 8.83	49 16.78
64	7	. .	. .	. .	. .	. .	52.	. .	43 17.52	20.16	1.35	.	5	50.928	7 59.89	10.60	0.21	43 39.03	33 50.70
65	8	. .	13.	. .	46.5	. .	. .	. .	49 47.04	20.16	1.32	IV.	4	43.398	15 51.06	10.02	1.57	50 8.52	41 42.65
66	8	. .	30.	. .	5.	. .	. .	. .	56 4.79	20.17	1.25	.	3	34.068	25 44.82	9.44	3.27	56 26.21	26 51 37.53
67	6	. .	53.	. .	28.	. .	. .	. .	18 58 27.84	20.18	1.13	IV.	2	22.408	37 52.32	9.22	5.41	18 58 49.15	27 3 46.95
68	7	. .	36.	53.	. .	. .	. .	. .	19 0 10.54	20.18	1.32	.	3	37.908	20 40.92	9.06	2.37	19 0 32.04	26 46 32.35
69	7	. .	. .	. .	. .	. .	48.	. .	19 1 13.55	+20.18	+1.27	.	3	32.768	−27 5.82	− 8.97	− 3.48	19 1 35.00	−26 52 58.27

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 176	June 26, 20 3	. .	. .	. .	. .	. .	. .	. .	30.112	75.	67.0	. .	. .	75.

REMARKS.

(176) 24. Transits over T.'s II and IV assumed as recorded over T.'s III and V.

(176) 25. Micrometer reading assumed as 21r.601, not 36r.601, to agree with Arg. Z. 214, 95; 217, 29; 306, 34; 388, 126; and Transit Z., 1846, July 9.

(167) 28. Transit over T. III assumed as at 6s.0 instead of 56s.

(176) 53. Micrometer reading assumed as 42r.188, not 47r.188.

(176) 55. Micrometer reading assumed as 44r.889, not 39r.889.

(176) 59. Micrometer reading assumed as 18r.102, not 17r.102.

(176) 60. Transit over T. III assumed to have been recorded as over T. II.

(176) 62. Time of transit over T. IV assumed as 56s.0 instead of 46s.

(176) 68. Micrometer reading assumed as 38r.908, not 37r.908.

ZONE 176. JUNE 26. S. $D_{\circ}=-26° 25' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	8	. .	44.	. .	. .	. .	. .	. .	19 3 18.84	+20.18	+1.07	.	1	11.968	−48 44.98	− 8.77	− 7.35	19 3 40.09	−27 14 41.10
71	6	. .	. .	10.	. .	. .	51.5	. .	4 17.19	20.19	1.14	VI.	2	19.078	41 21.30	8.67	6.02	4 38.52	27 7 15.99
72	8	. .	55.5	. .	30.	. .	. .	. .	10 30.04	20.19	1.39	IV.	4	41.946	17 22.02	8.11	1.82	10 51.62	26 43 11.95
73	9	. .	. .	7.5	. .	42.	. .	. .	13 24.74	20.19	1.24	.	3	26.032	34 8.93	7.84	4.74	13 46.17	27 0 1.51
74	7	. .	32.	49.5	6.8	. .	. .	. .	17 6.77	20.20	1.47	IV.	6	48.122	10 56.29	7.50	0.69	17 28.44	26 36 44.48
75	4	. .	40.	57.5	14.5	. .	. .	. .	20 14.75	20.20	1.11	IV.	1	9.513	51 20.42	7.21	7.83	20 36.06	27 17 15.46
76	9	. .	. .	. .	. .	. .	. .	10.	20 17.82	20.20	1.18	.	2	16.730	43 48.37	7.20	6.47	20 39.20	27 9 42.04
77	7	. .	45.	. .	19.	. .	. .	. .	26 19.29	20.21	1.50	IV.	5	47.440	11 39.24	6.64	0.82	26 41.00	26 37 26.70
78	9	. .	. .	. .	57.5	. .	. .	50.	26 57.75	20.21	1.49	IV.	5	46.150	13 0.14	6.59	1.02	27 19.45	38 47.75
79	9	. .	34.	. .	. .	9.	. .	. .	32 8.79	20.22	1.46	V.	4	41.485	17 51.40	6.04	1.91	32 30.47	43 39.35
80	7	. .	. .	. .	50.	. .	24.5	. .	32 49.96	20.22	1.43	IV.	4	37.934	21 33.82	6.04	2.53	33 11.61	47 22.39
81	8	. .	35.5	. .	. .	. .	. .	. .	35 52.85	20.23	1.43	.	4	36.840	22 41.39	5.81	2.76	35 14.51	48 29.96
82	6	. .	53.	. .	27.5	. .	2.	. .	37 27.54	20.23	1.40	IV.	3	34.590	25 12.07	5.61	3.15	37 49.17	26 51 0.83
83	8	. .	. .	. .	. .	. .	23.	. .	37 48.45	20.23	1.21	.	2	15.220	45 23.31	5.58	6.74	38 9.89	27 11 15.63
84	7	. .	49.8	. .	24.5	. .	. .	. .	40 24.44	20.23	1.48	IV.	4	41.208	18 8.53	5.33	1.95	40 46.15	26 43 55.81
85	7	. .	. .	. .	. .	6.	23.5	. .	40 48.74	20.23	1.24	.	2	15.910	39 26.10	5.30	5.70	41 10.21	27 5 17.10
86	4	. .	43.5	. .	18.	. .	. .	. .	46 18.04	20.24	1.52	IV.	5	43.430	15 50.94	4.78	1.51	46 39.80	26 41 37.23
87	6	. .	. .	. .	. .	. .	55.5	13.	46 21.05	20.24	1.38	.	3	29.368	30 39.34	4.78	4.12	46 42.67	56 28.24
88	7	. .	. .	. .	. .	. .	. .	37.	47 45.13	20.24	1.58	.	6	47.935	11 7.54	4.65	0.68	48 6.95	36 52.87
89	4	. .	. .	. .	27.	44.5	. .	. .	49 27.10	20.24	1.59	IV.	6	48.892	10 7.83	4.49	0.51	49 48.93	35 52.83
90	7	. .	51.	8.	25.	. .	. .	. .	51 25.33	20.25	1.58	IV.	5	47.058	12 3.10	4.31	0.88	51 47.16	37 48.29
91	8	. .	14.	32.	49.	6.	. .	. .	54 48.93	20.25	1.52	IV.	4	40.522	18 51.59	3.99	2.06	55 10.70	26 44 37.64
92	6	. .	. .	. .	42.	. .	16.	. .	55 41.68	20.25	1.26	IV.	2	12.615	48 6.42	3.91	7.27	56 3.19	27 13 57.60
93	6	. .	. .	. .	18.	. .	52.5	. .	57 17.96	20.26	1.47	IV.	3	34.025	25 47.45	3.75	3.25	57 39.69	26 51 34.45
94	4	. .	3.	20.	37.	. .	. .	. .	19 59 37.33	20.26	1.60	IV.	4	45.695	13 26.77	3.54	1.12	19 59 59.19	39 11.43
95	8	. .	. .	12.	. .	. .	. .	. .	20 3 29.42	+20.26	+1.62	.	4	46.740	−12 20.66	− 3.17	− 0.91	20 3 51.30	−26 38 4.74

ZONE 177. JUNE 27. C. $D_{\circ}=-22° 3' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	16.5	33.	50.1	6.5	. .	16 13 33.16	+22.78	. .	IV.	2	18.225	−42 14.67	− 6.80	−11.82	. . .	−22 45 33.29
2	9	. .	. .	50.6	. .	23.8	40.4	. .	15 7.23	22.78	. .	IV.	4	44.406	14 47.80	6.69	7.82	. . .	18 2.31
3	9.10	. .	. .	1.5	18.2	35.1	. .	. .	22 18.25	22.77	. .	IV.	3	34.744	25 2.34	6.20	9.29	. . .	28 17.83
4	9.10	. .	56.2	12.8	29.8	. .	. .	. .	24 29.64	22.77	. .	III.	3	32.863	27 0.37	6.03	9.57	. . .	30 15.97
5	8	. .	25.8	42.8	59.2	16.	32.8	. .	16 28 59.35	+22.77	. .	IV.	3	28.322	−31 45.47	− 5.71	−10.26	. . .	−22 35 1.44

ZONE 178. JULY 10. S. $D_{\circ}=-22 40' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	2.	. .	. .	17 40 45.24	+23.28	+0.53	.	3	35.758	−23 58.52	− 5.57	− 3.08	17 41 9.05	−23 4 37.17
2	8	. .	. .	. .	. .	. .	11.	28.	41 37.61	23.28	0.66	.	4	47.545	11 31.33	5.50	1.20	42 1.55	22 52 8.03
3	10	. .	56.8	. .	31.	47.	. .	. .	45 30.55	23.28	0.58	.	4	43.109	16 9.15	5.13	1.91	45 54.41	22 56 46.19
4	8	. .	. .	. .	58.5	. .	32.	. .	46 58.48	23.28	0.30	.	2	19.469	40 56.65	5.01	5.69	47 22.06	23 21 37.35
5	9	. .	4.	21.	38.	. .	. .	. .	49 37.81	23.28	0.32	.	2	23.100	37 8.53	4.76	5.12	50 1.41	17 48.41
6	9	. .	5.	. .	. .	. .	. .	. .	51 38.80	23.28	0.14	.	1	9.014	51 50.27	4.58	7.42	52 2.22	32 32.27
7	9	. .	. .	. .	15.	. .	. .	. .	52 14.86	23.28	0.40	.	3	30.525	29 27.19	4.51	3.92	52 38.54	10 5.62
8	8	. .	. .	. .	. .	10.5	. .	. .	52 53.76	23.28	0.49	.	4	38.708	20 45.61	4.45	2.62	53 17.53	23 1 22.68
9	7	. .	. .	. .	26.5	. .	. .	. .	54 26.39	23.28	0.59	.	6	48.402	10 38.86	4.30	1.09	54 50.26	22 51 14.25
10	9	. .	42.	. .	15.	. .	. .	. .	58 15.27	23.28	0.36	.	3	33.468	26 22.59	3.94	3.45	58 38.91	23 6 59.98
11	9	. .	. .	. .	. .	37.5	. .	11.	17 58 20.73	23.28	0.52	.	5	46.252	12 53.81	3.94	1.41	17 58 44.53	22 53 29.16
12	10	. .	3.5	. .	37.	54.	. .	. .	18 1 37.08	+23.28	+0.19	.	2	17.590	−42 53.75	− 3.62	− 5.99	18 2 0.55	−23 23 33.36

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
June 27,	0	. .	. .	. .	. .	. .	359 59 64.19	30.0004
July 10,	0	. .	. .	. .	. .	. .	62.40	30.0001

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 177	June 27,	16 10	71 24 67.4	57.6	64.6	56.6	54.2	62.2	60.43	30.080	82.4	80.4	81.5	81.2	79.8
		16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	80.1			
		16 30								30.080	82.	79.9			
Zone 178	July 10,	17 30	72 2 {29. {30.	24.4 24.6	24.5 25.0	21.2 22.2	20.8 21.2	24.2 25.0	24.34	30.176	75.2	72.3			
		18 8	. .	. .	. .	. .	. .	. .	. .	30.172	75.2	72.			

REMARKS.

(176) 71. Transit over T. III assumed as 0^s, not 10^s, to agree with B. A. C. 6565, Transit, 1846, September 2, and 1848, July 20.

(176) 79. Transit over T. IV assumed to have been recorded as over T. V.

(176) 81. Transit over T. III assumed as recorded over T. II, and minutes as 34, not 35.

(176) 85. Micrometer reading assumed as $20^r.910$, not $15^r.910$.

ZONE 178. JULY 10. S. $D_0 = -22° 40' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	7	. .	58.5	. .	32.	49.	. .	. .	18 3 32.09	+23.28	+0.33	.	3	31.658	−28 16.04	− 3.44	− 3.74	18 3 55.70	−23 8 53.22
14	11	. .	. .	. .	43.	. .	. .	. .	5 42.86	23.28	0.30	.	3	30.128	29 52.04	3.23	3.98	6 6.44	10 29.25
15	10	. .	43.5	. .	17.	. .	. .	. .	18 8 17.06	+23.28	+0.16	.	2	21.433	−38 52.78	− 2.97	− 5.38	18 8 40.50	−23 19 31.13

ZONE 179. JULY 11. C. $D_0 = -22° 40' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	35.2	. .	. .	. .	18 2 35.12	+24.55	+0.78	IV.	2	18.739	−41 42.28	− 5.37	−11.79	18 3 0.45	−23 22 29.44
2	7	. .	. .	13.8	30.3	47.3	4.	. .	3 30.47	24.55	0.84	IV.	3	31.798	28 7.13	5.28	9.72	3 55.86	23 8 52.13
3	9	. .	. .	. .	. .	. .	. .	39.2	3 48.87	24.55	0.90	VII.	5	47.845	11 13.24	5.25	7.19	4 14.32	22 51 55.68
4	8	. .	. .	58.5	15.3	32.2	48.5	. .	8 15.23	24.55	0.75	IV.	2	21.572	38 44.69	4.81	11.34	8 40.53	23 19 30.84
5	8	. .	. .	5.3	22.	39.4	55.8	. .	10 22.22	24.55	0.70	IV.	2	18.958	41 28.51	4.60	11.75	10 47.47	23 22 14.86
6	8	. .	. .	15.5	31.8	48.7	. .	. .	12 32.01	24.55	0.81	IV.	4	41.967	18 23.42	4.39	8.11	12 57.37	22 59 5.92
7	9	. .	. .	52.2	. .	. .	. .	. .	17 9.11	24.55	0.59	IV.	2	10.600	50 12.76	3.92	13.08	17 34.25	23 30 59.76
8	7	. .	. .	19.4	. .	52.2	9.1	. .	18 35.78	24.55	0.70	IV.	3	35.287	24 28.45	3.78	9.17	19 1.03	5 11.40
9	7	. .	. .	40.2	57.1	14.3	. .	. .	20 57.15	24.55	0.63	IV.	2	20.423	39 56.81	3.56	11.53	21 22.33	20 41.90
10	7	. .	. .	. .	. .	48.	5.	. .	18 21 47.99	+24.55	+0.59	V.	2	16.520	−44 1.73	− 3.50	−12.14	18 22 13.12	−23 24 47.37

ZONE 180. JULY 17. S. $D_0 = -22° 40' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	33.	. .	5.	. .	. .	. .	18 7 5.79	+24.39	+0.73	.	3	25.238	−34 58.87	−13.02	− 4.77	18 7 30.91	−23 15 36.66
2	8	. .	. .	. .	. .	32.	49.	. .	8 15.34	24.39	0.71	.	3	21.568	38 48.89	12.91	5.36	8 40.44	19 27.16
3	9	. .	. .	5.6	. .	. .	56.	. .	10 22.50	24.39	0.72	.	2	18.868	41 33.84	12.72	5.79	10 47.61	23 22 12.35
4	7	. .	58.	. .	32.	. .	. .	. .	12 31.78	24.38	0.81	.	4	40.842	18 30.30	12.53	2.28	12 56.97	22 59 5.11
5	10	. .	. .	. .	. .	. .	38.	. .	14 4.59	24.38	0.79	.	3	33.530	26 18.20	12.39	3.44	14 29.76	23 6 54.03
6	9	. .	. .	. .	12.5	. .	45.	. .	16 11.98	24.38	0.78	.	3	30.078	28 52.43	12.18	3.80	16 37.14	9 28.41
7	7	. .	2.	19.	36.	. .	. .	. .	17 35.79	24.38	0.82	.	3	35.202	24 33.79	12.06	3.17	18 0.99	5 9.00
8	7	. .	23.5	. .	. .	14.	. .	. .	20 57.16	24.37	0.77	V.	2	20.318	40 3.60	11.76	5.55	21 22.30	20 40.91
9	8	. .	. .	. .	48.	. .	21.5	. .	21 47.97	24.37	0.75	.	1	16.378	44 9.12	11.68	6.19	22 13.09	24 46.99
10	8	. .	22.	. .	. .	. .	. .	. .	28 55.69	24.36	0.83	.	3	27.216	32 54.78	11.04	4.45	29 20.88	13 30.27
11	7	. .	. .	. .	30.	. .	. .	. .	29 29.90	24.36	0.82	.	3	22.586	37 45 16	10.98	5.19	29 55.08	18 21.33
12	8	. .	9.	. .	43.	. .	. .	. .	32 42.85	24.35	0.80	.	2	15.506	45 5.20	10.69	6.32	33 8.00	23 25 42.21
13	9	. .	. .	. .	14.	. .	. .	. .	34 13.89	24.35	0.94	.	6	50.810	8 7.41	10.55	0.70	34 39.18	22 48 38.66
14	8	. .	9.	. .	42.8	. .	. .	. .	40 42.68	24.34	0.94	.	4	39.168	20 15.50	9.97	2.54	41 7.96	23 0 48.01
15	5	. .	7.8	. .	41.5	. .	. .	. .	44 41.42	24.34	0.98	.	5	44.332	14 53.95	9.61	1.72	45 6.74	22 55 25.28
16	5	. .	. .	21.	. .	54.	. .	28.	45 37.64	24.34	1.00	.	5	48.412	10 38.09	9.53	1.08	46 2.98	22 51 8.70
17	6	. .	. .	. .	. .	. .	. .	21.	46 30.45	24.33	0.88	.	2	19.482	40 56.02	9.44	5.69	46 55.66	23 21 31.15
18	9	. .	. .	. .	59.	. .	. .	. .	49 58.95	24.33	0.87	.	2	13.468	47 13.00	9.14	6.65	50 24.15	27 48.79
19	8	. .	20.	. .	. .	. .	. .	. .	51 53.79	24.33	0.88	.	1	10.152	50 38.97	8.96	7.18	52 19.00	23 31 15.11
20	7	. .	. .	. .	10.	. .	. .	60.	52 9.77	24.33	1.02	.	4	45.593	13 33.29	8.94	1.53	52 35.12	22 54 3.76
21	8	. .	. .	29.	. .	3.	. .	. .	54 46.02	24.33	0.98	III.	3	33.673	26 9.61	8.70	3.42	55 11.33	23 6 41.73
22	10	. .	20.	. .	. .	. .	. .	. .	56 53.67	24.32	1.06	.	5	50.198	8 45.72	8.51	0.80	57 19.05	22 49 15.03
23	8	. .	42.	. .	15.	. .	. .	. .	18 59 15.35	24.32	0.93	IV.	1	15.938	44 37.34	8.30	6.25	18 59 40.60	23 25 11.89
24	9	. .	. .	. .	6.	. .	39.	. .	19 0 5.72	24.32	0.93	.	1	15.752	44 49.02	8.21	6.29	19 0 30.97	23 25 23.52
25	9	. .	. .	55.	. .	. .	. .	. .	4 11.93	24.32	1.08	.	5	50.712	8 13.51	7.85	0.69	4 37.33	22 48 42.05
26	10	. .	2.	. .	. .	. .	. .	. .	14 35.76	24.31	1.00	.	1	15.	46	6.92	. .	14 36.07	
27	9	. .	14.5	. .	39.	. .	. .	. .	15 38.59	24.31	1.00	.	2	16.186	44 21.79	6.83	6.23	15 38.90	23 24 54.85
28	10	. .	. .	. .	37.5	. .	. .	. .	18 37.36	24.30	1.08	.	3	30.245	29 44.75	6.56	3.97	19 1.74	10 15.28
29	9	. .	. .	59.	. .	. .	. .	. .	22 15.87	24.30	1.02	.	2	16.590	43 56.84	6.23	6.16	22 40.19	24 29.23
30	9	. .	. .	. .	. .	17.	. .	50.5	19 23 0.20	+24.30	+1.10	.	4	36.896	−22 39.26	− 6.16	− 3.90	19 23 26.60	−23 3 9.32

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 11,	0	. .	. .	. .	. .	. .	359 59 63.49	30.0021
July 17,	0	. .	. .	. .	. .	. .	63.77	30.0028

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 179	July 11,	18 5	. .	. .	. .	. .	. .	. .	. .	30.160	76.4	72.7			
		18 20	72 2 {37.9 37.7	32.5 33.0	34.7 34.5	31.5 32.8	29.8 30.2	32.9 34.1	33.47	30.160	. .	72.7	76.0	75.2	74.8
Zone 180	July 17,	18 0	72 2 28.3	22.	26.8	22.4	19.4	23.	23.65	30.100	72.8	62.2	. .	. .	75.6
		18 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	62.2			
		18 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	61.8			
		19 0	. .	. .	. .	. .	. .	. .	. .	30.104	70.8	61.2			
		19 30	{27. 28.	24. 24.5	26. 25.6	23.8 25.0	19.8 20.4	22.2 23.5	24.15						

REMARKS.

(179) 6. Micrometer reading assumed as $40^r.967$, not $41^r.967$.

(179) 10. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

(180) 6. Micrometer reading assumed as $31^r.078$, not $30^r.078$.

(180) 27. Time of transit over T. II assumed as $4^s.5$ instead of $14^s.5$.

ZONE 181. JULY 18. C. $D_0 = -22° 2' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1870.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	4	12.5	29.1	45.9	1.8	19.2	35.5	52.4	15 51 2.34	+24.41	+0.61	IV.	5	50.798	− 8 8.17	−25.13	− 0.84	15 51 27.36	−22 11 24.14
2	9	..	..	..	55.3	12.	28.2	..	52 55.16	24.40	0.61	V.	4	46.649	12 27.25	25.01	1.47	53 20.17	15 43.73
3	9	..	..	..	..	..	..	55.	53 4.66	24.39	0.62	VII.	2	18.308	42 9.73	24.99	5.77	53 29.67	45 30.49
4	10	..	..	..	29.?	..	..	..	15 57 28.86	24.39	0.63	IV.	3	29.718	30 17.69	24.70	4.04	15 57 53.88	33 36.43
5	8	..	29.5	46.1	..	..	..	..	16 0 2.99	24.39	0.64	III.	2	17.269	43 14.32	24.53	5.96	16 0 28.02	46 34.81
6	8	..	..	..	..	20.7	37.5	..	0 4.12	24.39	0.64	V.	3	30.372	29 36.66	24.53	3.94	0 29.15	32 55.13
7	7.8	..	..	..	4.3	21.3	37.7	..	1 4.37	24.39	0.64	V.	3	21.329	39 3.95	24.46	5.33	1 29.40	42 23.74
8	8.9	..	23.	..	56.1	..	..	..	6 56.31	24.38	0.66	IV.	2	17.082	43 26.23	24.06	5.99	7 21.35	46 46.28
9	8.9	..	..	..	..	47.5	..	..	7 30.68	24.37	0.66	IV.	2	19.806	40 35.27	24.02	5.58	7 55.71	43 54.87
10	8.9	..	..	..	..	..	26.2	..	7 52.96	24.37	0.66	VI.	3	30.572	29 23.80	24.06	3.92	8 17.99	32 41.72
11	8	..	..	..	5.	22.5	38.8	..	9 5.32	24.37	0.67	V.	3	10.091	50 48.57	23.91	7.08	9 30.36	54 9.56
12	9.10	..	..	12.5	29.2	..	..	..	11 29.22	24.37	0.68	III.	5	48.584	10 27.24	23.74	1.16	11 54.27	13 42.14
13	8	38.3	55.3	11.5	28.3	45.	2.5	19.3	13 28.60	24.36	0.68	IV.	2	18.223	42 14.79	23.61	5.85	13 53.64	45 34.25
14	8	..	..	46.1	..	19.7	35.6	..	15 2.76	24.35	0.69	IV.	4	44.404	14 47.93	23.49	1.76	15 27.80	18 3.18
15	9	..	..	..	..	..	..	4.	22 13.88	24.34	0.71	VII.	5	34.752	24 55.07	22.98	3.27	22 38.93	28 11.32
16	9	..	..	..	25.1	..	..	15.5	24 25.18	24.34	0.72	VII.	3	32.873	26 58.86	22.81	3.57	24 50.24	30 15.24
17	8	..	21.5	38.	55.	11.6	..	..	28 54.87	24.33	0.73	IV.	3	28.318	31 45.72	22.49	4.27	29 19.93	35 2.48
18	8	25.	41.7	58.5	14.8	31.5	48.6	4.3	34 14.91	24.31	0.75	IV.	3	36.155	23 33.86	22.08	3.06	34 39.97	26 49.00
19	8	..	..	..	..	10.6	26.5	43.5	34 53.53	24.31	0.75	IV.	4	48.085	10 56.73	22.02	1.24	35 18.59	14 9.99
20	8	..	..	..	..	..	..	32.5	35 42.02	24.31	0.75	VII.	2	10.122	50 42.92	21.96	7.08	36 7.08	54 1.96
21	9	..	..	..	..	20.5	37.	53.8	37 3.75	24.30	0.75	V.	5	41.665	17 41.60	21.86	2.22	37 28.80	20 55.68
22	8.9	..	..	19.5	35.3	52.5	9.2	26.	42 35.77	24.30	0.77	IV.	3	24.618	15 37.70	21.42	4.83	43 0.84	18 53.95
23	6.7	29.7	46.4	3.6	19.7	37.2	53.6	10.6	47 20.11	24.29	0.79	IV.	2	9.755	51 5.62	21.04	7.18	47 45.19	54 23.84
24	8.9	..	..	36.3	52.8	10.	26.5	..	16 53 53.02	24.28	0.81	IV.	2	8.351	52 33.84	20.50	7.39	16 54 18.11	55 51.73
25	8.9	..	21.3	..	55.	11.7	28.5	..	17 2 54.97	24.26	0.83	IV.	2	19.481	40 55.90	19.75	5.62	17 3 20.06	44 11.27
26	9	..	..	45.5	2.2	..	..	..	12 2.20	24.24	0.87	III.	2	17.619	42 52.31	18.94	5.92	12 27.31	46 7.17
27	8.9	..	47.	3.5	20.	36.8	53.5	..	12 20.19	24.24	0.87	IV.	3	28.707	32 23.86	18.92	4.37	12 45.30	35 37.15
28	8	..	..	26.2	43.3	0.1	17.	..	13 43.27	24.24	0.87	IV.	2	12.452	48 16.70	18.79	6.73	14 8.38	51 32.22
29	9.10	..	..	..	54.5	11.	27.5	..	14 54.28	24.23	0.88	V.	3	24.182	36 4.92	18.69	4.90	15 19.39	39 18.51
30	8.9	..	..	15.6	32.2	49.	5.5	22.5	24 32.16	24.22	0.91	IV.	2	9.055	51 49.58	17.81	7.29	24 57.29	55 4.68
31	9	..	59.8	..	33.1	..	..	..	26 33.14	24.21	0.92	III.	4	36.396	23 10.07	17.63	3.02	26 58.27	26 20.72
32	9.10	..	..	..	..	17.2	..	..	27 0.56	24.21	0.92	V.	4	42.158	17 9.22	17.59	2.13	27 25.69	30 18.94
33	9	..	..	18.	34.5	51.3	8.	..	28 34.62	24.21	0.92	IV.	3	33.884	25 56.25	17.44	3.38	28 59.75	29 7.07
34	10	..	..	55.3	12.2	28.8	..	..	33 12.13	24.20	0.93	IV.	4	45.068	14 6.12	17.01	1.68	33 37.26	17 14.81
35	7	..	22.5	39.	55.5	12.3	28.7	45.8	34 55.68	24.20	0.93	IV.	5	54.599	4 9.70	16.85	0.22	35 20.81	7 16.77
36	9	..	..	..	..	48.	4.5	..	36 31.28	24.19	0.94	V.	3	29.762	30 14.76	16.70	4.04	36 56.41	33 25.50
37	7	..	43.	0.	16.3	33.3	49.5	6.3	38 16.42	24.19	0.96	IV.	4	37.684	21 49.57	16.54	2.83	38 41.57	24 58.94
38	8.9	..	2.5	..	36.3	53.3	9.3	..	41 36.18	24.19	0.97	IV.	2	11.845	48 54.52	16.21	6.83	42 1.34	52 7.56
39	9	..	..	32.5	49.1	6.	..	..	42 49.15	24.19	0.97	IV.	3	25.895	34 17.47	16.11	4.63	43 14.31	37 28.21
40	9	..	..	..	..	1.2	17.5	..	43 44.38	24.18	0.97	V.	3	33.307	26 32.51	16.02	3.47	44 9.53	29 42.00
41	9	..	..	12.5	..	45.7	..	..	45 29.04	24.18	0.98	IV.	2	7.371	53 35.29	15.84	7.52	45 54.20	56 48.65
42	8.9	..	..	..	41.3	58.	14.6	31.5	47 41.30	24.18	0.99	V.	3	37.156	22 30.92	15.63	2.91	47 6.47	25 39.46
43	8	..	54.5	11.5	27.5	..	..	..	50 27.87	24.17	1.00	III.	3	33.175	26 40.98	15.36	3.50	49 52.04	29 49.84
44	10	..	56.5	..	30.	..	..	..	50 29.95	24.17	1.00	VI.	4	41.982	18 23.14	15.36	2.28	49 55.12	21 30.78
45	8	..	..	..	..	..	..	47.	50 56.88	24.17	1.00	VII.	3	35.966	23 44.83	15.31	3.08	50 22.05	26 53.22
46	8	..	..	..	..	..	..	21.5	50 31.37	24.17	1.00	VII.	3	31.175	28 45.59	15.35	3.82	50 56.54	31 54.76
47	7	..	..	..	23.8	40.8	57.1	..	52 23.82	24.17	1.00	V.	2	17.452	43 3.35	15.16	5.95	52 48.99	46 14.46
48	8	..	..	..	31.3	..	..	..	53 31.21	24.17	1.01	IV.	2	20.725	39 37.68	15.05	5.45	53 56.39	42 48.18
49	9	..	..	..	..	11.5	..	..	17 53 54.75	+24.17	+1.01	V.	3	26.555	−33 36.07	−15.01	− 4.53	17 54 19.93	−22 36 45.61

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 18, 0	..	..	..	..	..	359 59 63.99	30.0029

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 181	July 18, 15 50	71 24 65.3	57.1	62.8	57.1	51.3	60.	58.93	..	..	72.1	77.5	76.	75.
	16 0	..	..	..	..	..	..	..	30.202	77.	71.6			
	16 20	..	..	..	..	..	..	..	..	..	70.9			
	16 40	..	..	..	..	..	..	..	30.212	76.2	70.			
	17 0	63.7	57.3	62.9	56.9	51.3	58.9	58.50	30.214	75.2	69.1	74.5	73.7	
	17 20	..	..	..	..	..	..	..	..	..	68.0			
	17 40	..	..	..	..	..	..	..	30.222	74.	67.7			
	18 0	..	..	..	..	..	..	..	..	..	67.3			
	18 20	63.7	57.8	62.7	57.1	50.0	58.2	58.25	30.228	73.3	67.0	73.4	72.	

REMARKS.

(181) 27. Micrometer reading assumed as $27^{\mathrm{r}}.707$, not $28^{\mathrm{r}}.707$.

(181) 42. Minutes assumed as 46, not 47.

(181) 43. Minutes assumed as 49, not 50.

(181) 44. Minutes assumed as 49, not 50; and micrometer reading as $40^{\mathrm{r}}.982$, not $41^{\mathrm{r}}.982$, to agree with Arg. Z. 224, 22, and 307, 33.

(181) 45. Minutes assumed as 49, not 50.

ZONE 180. JULY 18. C. $D_0 = -22° \; 2' \; 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	. .	. .	59.5	16.	. .	17 54 42.78	+24.16	+1.01	V.	3	33.031	−26 49.68	−14.93	− 3.52	17 55 7.95	−22 29 58.13
51	8.9	. .	43.5	0.2	. .	33.5	49.7	. .	57 16.81	24.16	1.02	IV.	3	34.592	25 11.94	14.69	3.27	57 41.99	28 19.90
52	9	. .	. .	. .	. .	36.5	. .	. .	58 19.57	24.16	1.02	V.	2	10.521	50 17.91	14.58	7.04	58 44.75	53 29.53
53	8.9	. .	. .	. .	. .	. .	. .	30.5	17 58 40.39	24.16	1.02	VII.	5	45.089	14 6.39	14.55	1.67	17 59 5.57	17 12.61
54	9	. .	52.	8.8	25.3	. .	58.5	. .	18 1 15.38	24.16	1.02	IV.	5	46.528	12 36.42	14.27	1.43	18 1 40.56	15 42.12
55	9	. .	15.5	32.5	49.5	. .	. .	. .	3 49.28	24.16	1.03	III.	2	11.986	48 45.50	14.03	6.83	4 14.47	51 56.36
56	9	. .	. .	. .	. .	11.7	28.5	. .	3 55.02	24.16	1.03	V.	3	18.702	41 48.53	14.02	5.77	4 20.21	44 58.32
57	9	. .	8.	24.3	41.5	. .	. .	. .	7 41.35	24.15	1.04	III.	5	49.143	9 52.14	13.63	1.04	8 6.54	12 56.81
58	8.9	. .	. .	9.2	26.	. .	59.	. .	8 25.86	24.15	1.05	IV.	4	42.007	17 18.26	13.56	2.14	8 51.06	20 23.96
59	8 9	. .	. .	11.5	29.	. .	1.5	. .	8 28.46	24.15	1.05	V.	4	39.084	20 22.08	13.56	2.61	8 53.66	23 28.25
60	8.9	. .	2.5	19.1	. .	. .	9.1	. .	12 35.91	24.14	1.06	III.	4	40.818	18 32.37	13.14	2.32	13 1.11	21 37.83
61	8.9	. .	8.3	. .	41.3	58.2	14.6	. .	12 41.46	24.14	1.06	IV.	4	44.156	15 3.43	13.13	1.82	13 6.66	18 8.38
62	10	. .	55.2	11.8	29.	. .	. .	18.7	14 28.72	24.13	1.07	IV.	5	45.022	3 43.02	12.94	0.11	14 53.92	6 46.07
63	9	. .	. .	. .	17.3	33.8	50.2	. .	23 17.09	24.12	1.10	V.	4	57.847	11 11.92	12.04	1.24	23 42.31	14 15.20
64	9	. .	. .	. .	. .	. .	25.2	. .	23 51.90	24.12	1.10	VI.	2	20.046	40 20.59	11.98	5.57	24 17.12	43 28.14
65	9	. .	. .	. .	. .	. .	. .	11.	24 20.87	24.12	1.10	VII.	3	30.702	29 15.14	11.95	3.89	24 46.09	32 20.98
66	9	. .	. .	. .	. .	. .	45.3	. .	25 12.04	24.12	1.10	VI.	3	24.048	36 13.01	11.84	4.93	25 37.26	39 19.78
67	8.9	. .	. .	. .	. .	. .	. .	43.	25 52.90	24.12	1.10	VII.	5	49.862	9 6.62	11.77	0.90	26 18.12	12 9.29
68	10	. .	. .	25.	41.3	58.5	. .	. .	30 41.55	24.12	1.12	IV.	2	16.076	44 29.32	11.28	6.19	31 6.79	47 36.79
69	10	. .	. .	54.?	11.5	28.	. .	. .	33 11.19	24.12	1.13	IV.	5	43.786	15 28.34	11.03	1.88	33 36.44	18 31.25
70	8	. .	. .	. .	52.	8.	25.5	. .	33 51.80	24.12	1.13	V.	.	F. wire	29 58.12	10.95	2.44	34 17.05	33 1.51
71	9	. .	. .	. .	. .	. .	. .	4.5	34 14.11	24.12	1.13	VII.	2	15.134	45 28.71	10.92	6.34	34 39.36	48 35.97
72	6.7	2.3	19.	35.9	52.2	9.2	25.4	42.5	36 52.36	24.11	1.14	IV.	3	30.434	29 32.96	10.64	3.94	37 17.61	32 37.54
73	10	. .	. .	. .	. .	. .	3.5	. .	37 30.24	24.11	1.14	IV.	3	35.994	23 43.89	10.58	3.06	37 55.49	26 47.53
74	9	. .	. .	56.1	. .	. .	. .	. .	41 12.86	24.11	1.16	III.	3	36.761	22 55.76	10.20	2.95	41 38.13	25 58.91
75	7.8	. .	. .	. .	23.8	40.5	57.	. .	41 23.75	24.10	1.16	V.	4	42.637	16 39.09	10.18	2.05	41 49.01	19 41.32
76	9	. .	. .	. .	. .	. .	29.1	. .	41 55.85	24.10	1.16	VI.	3	33.118	26 44.06	10.13	3.50	42 21.11	29 47.69
77	8.9	. .	. .	. .	10.8	27.6	. .	. .	43 10.79	24.10	1.16	V.	3	34.289	25 30.89	9.99	3.32	43 36.05	28 34.20
78	9	. .	. .	. .	. .	. .	51.	. .	43 17.75	24.10	1.16	VI.	3	29.097	30 56.28	9.98	4.14	43 43.01	34 0.40
79	9	. .	. .	. .	39.5	. .	. .	. .	44 39.42	24.10	1.17	IV.	3	18.665	41 51.09	9.84	5.78	45 4.69	44 56.71
80	7	. .	. .	. .	. .	. .	15.	. .	44 41.62	24.10	1.17	VI.	2	8.546	52 21.87	9.83	7.39	45 6.89	55 29.09
81	7	. .	. .	. .	. .	54.3	11.	. .	45 37.52	24.10	1.17	V.	2	12.626	48 5.90	9.74	6.73	46 2.79	51 12.37
82	8	. .	23.8	40.3	57.1	13.8	30.5	47.2	48 57.09	24.10	1.17	IV.	2	19.987	40 23.97	9.40	5.57	49 22.36	43 28.94
83	7.8	19.3	36.3	53.3	9.8	26.2	. .	. .	52 9.75	24.09	1.18	IV.	2	9.869	50 58.41	9.05	7.18	52 35.02	54 4.64
84	10	. .	. .	. .	. .	50.2	. .	. .	52 33.57	24.09	1.18	V.	5	44.241	14 59.97	9.01	1.77	52 58.84	18 0.75
85	10	. .	11.5	. .	45.	. .	. .	. .	54 45.01	24.09	1.19	III.	2	17.097	43 25.04	8.79	6.03	55 10.29	46 29.86
86	9.10	. .	20.8	37.3	54.	. .	. .	. .	56 54.15	24.09	1.20	III.	2	14.383	46 15.30	8.57	6.46	57 19.44	49 20.33
87	8	. .	58.5	15.	31.8	48.2	5.	. .	18 57 31.73	24.09	1.20	IV.	3	20.196	40 15.13	8.50	5.54	18 57 57.02	43 19.17
88	9.10	. .	31.	48.2	4.9	21.5	. .	. .	19 0 4.75	24.09	1.21	IV.	3	26.535	33 37.51	8.23	4.56	19 0 30.05	36 40.30
89	9	. .	7.8	25.	. .	58.	. .	. .	2 41.53	24.08	1.21	IV.	5	51.621	7 16.63	7.96	0.62	3 6.82	10 15.21
90	9	. .	38.7	55.3	12.5	. .	. .	. .	4 12.28	24.08	1.22	III.	2	14.842	45 46.40	7.80	6.40	4 37.58	48 50.60
91	8.9	. .	. .	. .	44.1	1.	17.5	. .	4 44.18	24.08	1.22	V.	5	43.664	15 36.13	7.75	1.84	5 9.48	18 35.72
92	9.10	. .	. .	. .	10.	. .	. .	. .	5 9.88	24.08	1.23	IV.	5	42.588	16 43.74	7.69	2.04	5 35.19	19 43.47
93	9	. .	4.5	21.3	38.	. .	. .	. .	7 38.01	24.08	1.23	III.	5	49.532	9 27.72	7.44	0.96	8 3.32	12 26.12
94	9	. .	56.7	. .	30.2	. .	. .	. .	9 30.15	24.08	1.24	III.	4	40.182	19 12.42	7.23	2.40	9 55.47	22 12.05
95	9	. .	. .	3.1	19.5	36.3	. .	. .	10 19.61	24.08	1.24	IV.	3	35.492	24 15.52	7.16	3.13	10 44.93	27 15.81
96	7	. .	. .	56.5	13.2	30.2	46.3	3.5	11 13.21	24.08	1.25	IV.	3	22.787	37 32.43	7.05	5.15	11 38.54	40 34.63
97	9	. .	. .	35.	51.7	8.5	. .	. .	12 51.74	24.08	1.25	IV.	4	41.266	18 4.89	6.89	2.23	13 17.07	21 4.01
98	9.10	. .	. .	42.5	. .	16.	[11]	. .	19 15 59.20	+24.08	+1.26	III.	2	9.668	−51 10.83	− 6.56	− 7.24	19 15 24.54	−22 54 14.63

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 180	July 18, 18 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.8			
	19 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	66.2			
	19 20	. .	. .	. .	. .	. .	. .	. .	30.218	72.2	65.8			
	19 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.9			
	20 0	71 24 61.6	57.7	60.9	57.2	49.3	58.1	57.47	30.210	72.	65.7	73.	71.5	

REMARKS.

(180) 54. Transits over T.'s II, III, IV, and VI assumed as 42^s, $58^s.8$, $15^s.3$, and $48^s.5$, not 52^s, $8^s.8$, $25^s.3$, and $58^s.5$, to agree with Arg. Z. 307, 59, and Mer. Circle, 1848, June 12.

(180) 98. Minutes assumed as 14, not 15, to agree with Arg. Z. 233, 28, and 240, 20.

ZONE 180. JULY 18. C. $D_0 = -22° 2' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	9	. .	39.5	. .	. .	29.5	. .	. .	19 15 12.86	+24.08	+1.26	IV.	2	12.289	−48 26.93	− 6.64	− 6.81	19 15 38.20	−22 51 30.38
100	8	. .	. .	1.8	18.5	35.2	52.	. .	16 18.52	24.08	1.26	IV.	3	19.190	41 18.23	6.53	5.71	16 43.86	44 20.47
101	9	. .	. .	. .	. .	. .	. .	46.2	16 56.10	24.08	1.26	VII.	5	48.129	10 55.60	6.47	1.17	17 21.44	13 53.24
102	10	. .	. .	. .	47.2	. .	. .	. .	20 47.08	24.07	1.28	IV.	4	45.195	13 58.28	6.06	1.61	21 12.43	16 55.95
103	10	. .	0.5	17.5	34.2	. .	. .	. .	23 34.13	24.07	1.29	III.	4	43.324	15 55.27	5.77	1.92	23 59.49	18 52.96
104	9	. .	11.5	28.5	45.	1.3?	. .	. .	24 44.94	24.07	1.29	IV.	3	37.265	22 24.33	5.65	2.86	25 10.30	25 22.84
105	10	. .	. .	. .	. .	39.5	. .	. .	25 22.87	24.07	1.29	V.	4	43.991	15 14.04	5.57	1.79	25 48.23	18 11.40
106	9	. .	. .	. .	. .	. .	52.	. .	26 18.75	24.07	1.30	VI.	3	33.468	26 22.15	5.48	3.45	26 44.12	29 21.08
107	8.9	. .	. .	. .	33.5	50.2	. .	. .	27 33.50	24.07	1.30	V.	5	48.183	10 52.53	5.35	1.17	27 58.87	13 49.05
108	8.9	. .	. .	. .	. .	21.3	37.5	. .	28 4.44	24.07	1.30	V.	5	45.172	14 1.55	5.29	1.62	28 29.81	16 58.46
109	8	. .	1.2	17.5	34.3	51.	7.5	. .	30 34.35	24.07	1.30	IV.	4	38.442	21 2.12	5.04	2.69	30 59.72	23 59.85
110	10	. .	. .	59.2	16.2	. .	49.5	. .	34 16.10	24.06	1.31	IV.	5	45.298	13 53.70	4.64	1.58	34 41.47	16 49.92
111	9	. .	. .	. .	. .	. .	. .	9.5	35 19.02	24.06	1.32	VII.	2	9.977	50 51.95	4.53	7.17	35 44.40	53 53.65
112	9	. .	. .	. .	. .	. .	8.2	. .	36 34.93	24.06	1.32	VI.	4	36.698	22 52.00	4.40	2.96	37 0.31	25 49.36
113	9	. .	. .	53.5	10.	26.5	. .	. .	38 10.05	24.06	1.33	IV.	5	50.449	8 30.34	4.23	0.77	38 35.44	11 25.34
114	9	. .	41.5	. .	14.8	. .	. .	. .	49 14.88	24.06	1.36	II.	3	24.260	36 0.27	3.07	4.91	49 40.30	38 58.25
115	9	. .	. .	38.3	55.3	. .	. .	. .	49 55.14	24.06	1.36	III.	5	42.878	16 25.21	3.01	2.00	50 20.56	19 20.22
116	7.8	. .	. .	. .	. .	32.	48.7	5.4	50 15.30	24.06	1.37	V.	3	26.347	33 49.18	2.98	4.59	50 40.73	36 46.75
117	9	. .	. .	. .	20.	36.5	53.2	. .	52 19.87	24.06	1.38	V.	3	31.790	28 7.51	2.76	3.72	52 45.31	31 3.99
118	8.9	. .	35.2	52.	8.5	25.5	42.	. .	19 55 8.67	24.06	1.38	IV.	3	26.795	33 21.01	2.47	3.52	19 55 34.11	36 17.00
119	9	. .	35.	52.	9.	25.	42.	. .	20 2 8.65	24.06	1.40	IV.	4	39.902	20 33.04	1.76	2.43	20 2 34.11	23 27.23
120	9	. .	29.5	46.	2.5	19.6	. .	. .	20 5 2.76	+24.06	+1.41	IV.	3	33.542	−26 17.89	− 1.46	− 3.44	20 5 28.23	−22 29 12.79

ZONE 181. JULY 19. S. $D_0 = -21° 25' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	12.	. .	45.	. .	17 41 11.88	+24.17	+1.00	.	3	32.652	−27 13.67	−25.67	− 9.61	17 41 37.05	−21 52 48.95
2	10	. .	. .	. .	1.5	. .	. .	. .	44 1.38	24.16	1.00	.	5	46.248	12 54.06	25.42	7.57	44 26.54	38 27.05
3	8	. .	21.5	. .	54.5	. .	27.5	. .	46 54.55	24.16	1.00	IV.	3	30.098	29 53.91	25.17	9.99	47 19.71	55 29.07
4	9	. .	9.	. .	42.	. .	. .	. .	50 42.12	24.15	1.00	.	5	41.851	17 29.49	24.83	8.23	51 7.27	21 43 2.55
5	8	. .	38.	. .	12.	. .	. .	. .	52 11.68	24.15	0.99	IV.	2	18.762	41 40.81	24.69	11.70	52 36.82	22 7 17.20
6	10	. .	. .	. .	. .	11.5	. .	. .	52 54.85	24.15	0.99	.	.	.353	31 43.33	24.63	10.29	53 19.99	21 57 18.25
7	10	. .	24.	. .	57.	. .	. .	. .	55 57.12	24.14	0.99	IV.	5	44.472	14 45.57	24.36	7.83	56 22.25	21 40 17.76
8	10	. .	. .	. .	. .	. .	56.	. .	56 22.80	24.14	0.98	.	2	13.690	46 59.19	24.33	12.47	56 47.92	22 12 35.99
9	9	. .	. .	. .	13.	. .	. .	. .	57 12.91	24.14	0.98	.	2	20.672	39 41.02	24.25	11.41	58 38.03	22 5 16.68
10	10	. .	. .	. .	. .	. .	. .	6.	17 58 16.10	24.14	0.98	.	3	33.105	26 44.50	24.16	9.54	17 58 41.22	21 52 18.20
11	10	. .	. .	. .	. .	22.	. .	. .	18 0 5.47	24.14	0.98	.	5	49.082	9 56.04	23.99	7.12	18 0 30.59	21 35 27.15
12	9	. .	. .	. .	. .	. .	. .	6.5	1 16.18	24.14	0.98	.	1	5.680	50 8.02	23.89	12.92	1 41.30	22 15 44.83
13	9	. .	32.	. .	. .	. .	. .	. .	4 5.37	24.13	0.98	.	4	39.400	20 0.99	23.63	8.58	4 30.48	21 45 33.20
14	9	. .	. .	. .	28.	. .	. .	. .	4 27.87	24.13	0.98	.	3	34.152	25 39.55	23.60	9.37	4 52.98	51 12.52
15	6	. .	. .	. .	. .	. .	23.	. .	4 49.87	24.13	0.98	.	4	40.095	19 20.22	23.57	8.48	5 14.98	21 44 52.27
16	9	. .	8.5	. .	. .	. .	. .	. .	7 41.96	24.12	0.98	.	2	13.290	47 23.44	23.30	12.56	8 7.06	22 12 59.30
17	10	. .	35.5	. .	. .	. .	. .	. .	10 8.94	24.12	0.98	.	2	17.038	43 28.30	23.08	11.98	10 34.04	22 9 3.36
18	10	. .	. .	. .	. .	. .	58.	. .	10 24.88	24.12	0.97	.	4	37.702	21 49.00	23.06	8.84	10 49.97	21 47 20.90
19	9	. .	. .	13.	. .	. .	. .	. .	12 29.70	24.12	0.97	.	2	20.840	39 30.18	22.86	11.40	12 54.79	22 5 4.44
20	10	. .	. .	. .	. .	. .	15.	. .	12 41.77	24.12	0.97	.	1	8.322	52 35.97	22.85	13.32	13 6.86	22 18 12.14
21	9	. .	. .	. .	. .	26.	. .	. .	14 9.43	24.12	0.97	.	5	40.879	18 30.80	22.71	8.36	14 34.52	21 44 1.87
22	10	. .	. .	. .	. .	. .	. .	44.	18 15 54.10	+24.11	+0.97	.	4	36.279	−23 18.61	−22.55	− 9.05	18 16 19.18	−21 48 50.21

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 19,	0	. .	. .	. .	. .	. .	359 59 62.03	30.0014

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 181	July 19,	17 40	70 47 {29.2 30.0	24.5 25.0	28.2 28.4	23. 24.2	21. 22.2	26. 27.	25.72[a]	30.170	75.8	72.7	76.	75.	
		18 21	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.	. .	. .	76.5
		18 48	. .	. .	. .	. .	. .	. .	. .	30.160	75.	70.2			
		19 16	. .	. .	. .	. .	. .	. .	. .	30.158	74.	69.5			
		20 0	. .	. .	. .	. .	. .	. .	. .	30.158	73.8	69.			
		20 28	{28.8 30.0	25. 26.	29.2 29.0	24. 25.	20.8 21.5	25.3 26.5	25.92	30.150	73.	68.2	74.		
		20 45	. .	. .	. .	. .	. .	. .	. .	30.150	73.	68.	. .	. .	72.5

REMARKS.

(180) 105. Declination differs 1′ from Arg. Z. 238, 43.

(180) 119. Micrometer reading assumed as 38r.902 instead of 39r.902.

(181) 6. Micrometer reading assumed as 28r.353.

(181) 9. Minutes assumed as 58, not 57, to agree with Arg. Z. 224, 39; and 307, 52.

(181) 12. Micrometer reading assumed as 10r.680, not 5r.680.

[a] Corr. for runs +0″.07.

ZONE 181. JULY 19. S. $D_0 = -21° 25' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	9	..	..	18.	..	..	..	..	18 18 34.73	+24.11	+0.97	.	6	44.192	−15 3.92	−22.30	− 7.86	18 18 59.81	−21 40 34.08
24	9	..	29.	..	..	..	..	..	20 2.37	24.11	0.97	.	5	41.235	18 8.35	22.17	8.31	20 27.45	43 38.83
25	8	..	..	53.	..	..	..	..	21 9.68	24.11	0.97	.	3	34.470	25 19.72	22.07	9.33	21 34.76	50 51.12
26	9	..	..	..	..	52.	..	..	21 35.46	24.10	0.97	.	4	47.270	11 48.40	22.03	7.39	22 0.53	37 17.82
27	9	..	..	34.	..	..	..	..	23 50.74	24.10	0.97	.	2	72.058	23 35.28	21.92	9.11	23 15.81	21 49 6.31
28	8	..	9.	..	..	..	..	..	25 42.42	24.10	0.96	.	2	20.416	39 56.56	21.64	11.46	26 7.48	22 5 29.66
29	9	..	37.	..	..	..	..	..	26 10.46	24.10	0.96	.	2	14.032	46 36.78	21.59	12.45	26 35.52	22 12 10.82
30	9	..	32.5	..	..	..	..	..	28 5.87	24.10	0.96	.	3	36.020	23 42.27	21.41	9.09	28 30.93	21 49 12.77
31	7	..	..	..	30.	..	3.5	..	28 30.11	24.10	0.96	.	5	53.295	5 31.66	21.37	6.49	28 55.17	21 30 59.52
32	8	..	..	..	..	20.	..	..	30 3.26	24.10	0.96	.	2	20.350	40 1.58	21.23	11.47	30 28.32	22 5 34.28
33	10	..	..	..	..	31.	..	..	31 14.46	24.09	0.96	.	4	47.002	12 5.04	21.11	7.43	31 39.51	21 37 33.58
34	10	..	..	..	..	..	31.	..	32 57.83	24.09	0.96	.	2	17.922	42 33.74	20.94	11.84	33 22.88	22 8 6.52
35	10	..	5.	..	..	..	..	..	35 38.37	24.09	0.96	.	4	44.160	15 2.17	20.69	7.87	36 3.42	21 40 30.73
36	10	..	20.	..	53.	..	..	..	41 53.20	24.08	0.95	IV.	2	14.858	45 45.58	20.08	12.33	42 18.23	22 11 17.99
37	6	..	..	25.8	..	..	15.8	..	43 42.57	24.08	0.95	III.	2	20.364	40 0.28	19.91	11.47	43 7.60	22 5 31.66
38	6	..	3.8	..	36.8	..	..	..	44 36.93	24.08	0.95	IV.	5	52.022	6 51.39	19.82	6.68	45 1.96	21 32 17.89
39	8	..	50.	..	..	..	..	..	48 23.37	24.07	0.95	.	3	29.593	30 25.60	19.45	10.07	48 48.39	55 55.12
40	9	..	..	..	50.	..	..	..	48 49.88	24.07	0.95	.	4	38.418	21 3.63	19.41	8.73	49 14.90	21 46 31.77
41	8	..	..	10.5	..	..	..	..	50 10.38	24.07	0.95	.	3	24.150	36 7.12	19.25	10.90	50 35.40	22 1 37.27
42	10	..	1.	..	..	..	..	..	52 34.49	24.07	0.95	.	1	8.368	52 30.96	19.04	13.32	52 59.51	22 18 3.32
43	8	..	23.5	..	57.	..	..	..	54 56.88	24.07	0.95	.	5	40.142	19 16.88	18.81	8.47	55 21.90	21 44 44.16
44	2	..	..	..	16.	33.	49.5	..	55 16.21	24.07	0.94	IV.	3	28.208	31 52.55	18.78	10.28	55 41.22	57 21.61
45	9	..	5.5	..	..	..	..	..	57 38.87	24.07	0.94	.	5	45.550	13 37.51	18.55	7.65	58 3.88	39 3.71
46	10	..	..	..	2.	..	..	..	58 1.87	24.06	0.94	.	4	34.695	24 57.14	18.51	9.30	58 26.87	50 24.95
47	.	..	..	..	..	..	11.	..	58 37.91	24.06	0.94	.	.	F.Wire.	29 59.91	18.46	10.00	59 2.91	21 55 28.37
48	9	..	..	..	..	..	..	37.	18 58 46.99	24.06	0.94	.	3	24.565	35 40.32	18.44	10.84	18 59 11.99	22 1 9.60
49	9	..	38.	..	..	..	..	..	19 1 11.37	24.06	0.94	.	3	30.800	29 9.75	18.19	9.88	19 1 36.37	21 54 37.82
50	9	..	9.	..	..	..	..	..	2 42.44	24.06	0.94	.	2	15.792	44 50.27	18.05	12.18	3 7.44	22 10 20.50
51	7	..	..	48.5	..	..	38.	..	3 5.03	24.06	0.94	III.	3	31.300	28 38.69	18.01	9.81	3 30.03	21 54 6.51
52	9	..	..	..	..	45.	..	..	4 28.19	24.06	0.94	.	2	14.545	46 5.58	17.88	12.40	4 53.19	22 11 35.86
53	9	..	0.5	..	33.5	..	..	..	6 33.66	24.06	0.94	IV.	2	20.242	40 8.18	17.67	11.51	6 58.66	5 37.36
54	9	..	5.2	..	..	..	..	..	7 25.46	24.05	0.94	.	1	13.668	46 59.63	17.59	12.50	7 50.45	12 29.72
55	9	..	..	..	..	..	19.	..	7 45.88	24.05	0.94	.	3	24.972	35 14.98	17.56	10.76	8 10.87	22 0 43.30
56	10	..	..	..	..	..	..	25.	8 35.10	24.05	0.94	.	5	38.740	20 44.80	17.48	8.68	9 0.11	21 46 10.96
57	10	..	..	47.	..	..	..	..	11 3.71	24.05	0.94	.	2	17.668	42 49.17	17.23	11.90	11 28.70	22 8 18.30
58	8	..	..	..	32.5	..	..	..	11 32.40	24.05	0.94	.	2	21.299	39 1.88	17.19	11.35	11 57.39	22 4 30.42
59	8	..	..	..	..	48.	..	..	12 31.37	24.05	0.94	.	3	30.189	29 48.15	17.09	9.98	12 56.36	21 55 15.22
60	9	..	3.	..	..	..	..	..	14 36.40	24.05	0.94	.	3	23.550	36 44.75	16.89	11.01	15 1.39	22 2 12.65
61	9	..	..	..	..	..	..	27.	14 36.98	24.05	0.94	.	2	23.458	36 46.75	16.89	10.98	15 1.97	22 2 14.62
62	8	..	..	30.	..	..	..	..	16 46.68	24.05	0.94	.	3	35.080	24 41.38	16.67	9.23	17 11.67	21 50 7.28
63	6	..	..	..	..	..	30.2	..	16 57.05	24.05	0.94	.	2	21.650	38 40.04	16.66	11.30	17 22.04	22 4 8.00
64	9	..	..	..	..	..	19.	..	17 45.91	24.05	0.94	.	3	30.238	29 44.81	16.58	9.97	18 10.90	21 55 11.36
65	.	..	..	7.	..	..	..	..	20 23.75	24.04	0.94	.	5	46.050	13 6.24	16.31	7.56	20 48.73	38 30.11
66	7	..	0.1	..	..	..	..	..	21 33.47	24.04	0.94	.	5	47.330	11 45.81	16.20	7.36	21 58.45	37 9.37
67	8	..	..	..	..	57.	..	..	21 40.42	24.04	0.94	.	4	40.458	18 55.98	16.19	8.41	22 5.40	44 20.58
68	7	..	..	..	56.	..	..	..	22 55.87	24.04	0.94	.	3	35.430	24 19.48	16.07	9.18	23 20.85	21 49 44.73
69	8	..	1.	..	..	..	..	..	27 33.56	24.04	0.94	.	1	12.355	48 21.09	15.61	12.73	27 58.54	22 13 49.43
70	8	..	..	..	..	0.1	..	..	27 44.35	24.04	0.94	.	3	28.092	31 59.58	15.60	10.30	28 9.33	21 57 25.48
71	10	..	52.	..	25.	..	..	..	19 30 25.12	+24.04	+0.94	IV.	3	28.882	−31 10.08	−15.33	−10.18	19 30 50.10	−21 56 35.59

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 181	July 19, 21 8	..	..	..	..	..	..	..	30.150	72.8	67.5			

REMARKS.

(181) 27. Micrometer reading assumed as $36^r.058$, and minutes of transit as 22 instead of 23, to correspond with Arg. Z. 307, 96.

(181) 37. Minutes of transit assumed as 42, not 43.

(181) 41. Transit over T. IV assumed as recorded over T. III.

(181) 54. Right ascension differs 13^s from Arg. Z. 238, 15; and Mural Z., 1848, July 18, and is wrong.

(181) 70. Transit over T. V assumed as $1^s.0$ instead of $0^s.1$, to agree with Transit Z., 1848, August 7.

ZONE 181. JULY 19. S. $D_0 = -21° 25' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	8	. .	. .	. .	. .	15.	. .	. .	19 30 58.45	+24.04	+0.94	.	5	45.032	−14 10.28	−15.28	− 7.71	19 31 23.43	−21 39 33.27
73	9	. .	. .	. .	. .	. .	. .	5.	31 15.12	24.04	0.93	.	6	48.813	10 12.53	15.25	7.14	31 40.09	35 34.92
74	10	. .	. .	23.5	. .	. .	. .	. .	33 40.18	24.04	0.93	.	3	35.312	24 26.95	15.02	9.20	34 5.15	21 49 51.17
75	10	. .	. .	. .	. .	. .	50.	. .	34 16.78	24.04	0.93	.	1	9.428	51 26.62	14.96	13.19	34 41.75	22 16 54.77
76	8	. .	38.5	. .	. .	28.5	. .	. .	37 11.88	24.04	0.93	.	3	32.558	27 19.63	14.67	9.62	37 36.85	21 52 43.92
77	9	. .	. .	. .	11.	28.	. .	. .	38 11.06	24.03	0.93	IV.	2	14.628	46 0.16	14.57	12.39	38 36.02	22 11 27.12
78	10	. .	. .	. .	3.	. .	. .	. .	41 2.91	24.03	0.93	.	3	19.770	35 27.97	14.30	10.75	41 27.87	22 0 53.02
79	10	. .	. .	5.	. .	. .	. .	. .	43 21.72	24.03	0.93	.	5	41.434	17 56.10	14.08	8.26	43 46.68	21 43 18.44
80	9	. .	32.	. .	15.	. .	. .	. .	46 15.12	24.03	0.93	IV.	3	31.639	28 17.24	13.81	9.76	46 40.08	21 53 40.81
81	10	. .	13.	30.	. .	3.5	. .	. .	50 46.62	24.03	0.93	III.	2	15.552	45 2.00	13.37	12.22	51 11.58	22 10 27.59
82	9	. .	. .	36.5	. .	. .	26.	. .	51 53.03	24.03	0.93	III.	3	32.972	26 53.59	13.26	9.55	52 17.99	21 52 16.40
83	7	. .	. .	. .	43.	. .	16.	. .	55 42.88	24.03	0.93	IV.	4	40.782	18 35.07	12.90	8.36	56 7.84	21 43 56.33
84	9	. .	. .	3.	. .	36.	. .	. .	19 57 19.48	24.03	0.93	III.	2	19.938	40 26.74	12.74	11.54	19 57 44.44	22 5 51.02
85	10	. .	7.5	. .	. .	. .	. .	. .	20 0 40.88	24.03	0.93	.	3	28.043	32 2.78	12.43	10.33	20 1 5.84	21 57 25.54
86	8	. .	. .	22.	. .	. .	. .	. .	1 38.71	24.03	0.93	.	5	40.308	19 6.76	12.35	8.42	2 3.67	44 27.53
87	9	. .	. .	. .	. .	. .	. .	11.	1 21.10	24.03	0.93	.	5	39.738	19 42.16	12.37	8.50	1 46.06	45 3.03
88	10	. .	27.5	. .	. .	. .	. .	. .	4 0.87	24.03	0.93	.	3	31.090	27 48.94	12.11	9.84	4 25.83	21 53 10.89
89	10	. .	44.	. .	. .	. .	. .	. .	5 17.40	24.02	0.93	.	3	24.062	36 12.57	11.99	10.94	5 42.35	22 1 35.50
90	10	. .	. .	. .	18.	. .	51.	. .	6 17.88	24.02	0.93	IV.	3	30.490	29 29.38	11.90	9.93	6 42.83	21 54 51.21
91	8	. .	. .	. .	54.	. .	. .	. .	7 53.88	24.02	0.93	.	4	38.330	21 9.15	11.75	8.72	8 18.83	46 29.62
92	10	. .	35.5	. .	8.	. .	. .	. .	10 8.38	24.02	0.93	IV.	5	46.296	12 51.06	11.54	7.50	10 33.33	38 10.10
93	8	. .	49.	6.	23.	. .	. .	. .	12 22.63	24.02	0.94	IV.	3	32.174	27 43.73	11.34	9.68	12 47.59	53 4.75
94	9	. .	. .	2.3	. .	. .	. .	. .	14 18.99	24.02	0.94	.	3	36.838	22 50.94	11.15	8.95	14 43.95	48 11.04
95	9	. .	. .	. .	55.	. .	. .	. .	14 54.88	24.02	0.94	.	4	45.502	13 39.01	11.10	7.62	15 19.84	21 38 57.73
96	9	. .	. .	. .	21.5	. .	. .	. .	16 21.43	24.02	0.94	.	1	17.252	43 15.13	10.97	11.99	16 46.39	22 8 38.09
97	10	. .	49.5	. .	. .	. .	. .	. .	19 22.87	24.02	0.94	.	4	47.190	11 51.98	10.69	7.36	19 47.83	21 37 10.03
98	10	. .	54.	. .	. .	. .	. .	. .	20 27.37	24.02	0.94	.	4	47.108	11 57.12	10.59	7.38	20 52.33	37 15.09
99	10	. .	. .	. .	. .	10.	. .	. .	20 53.42	24.02	0.94	.	3	39.698	19 51.33	10.55	8.52	21 18.38	45 10.40
100	8	. .	54.5	. .	28.	. .	. .	. .	28 27.87	24.02	0.94	.	3	33.945	25 52.41	9.87	9.38	28 52.83	51 11.66
101	9	. .	. .	. .	12.8	. .	. .	. .	29 12.66	24.02	0.94	.	3	28.752	31 18.30	9.80	10.19	29 37.62	21 56 38.29
102	10	. .	49.	. .	. .	. .	. .	. .	31 22.44	24.02	0.95	.	2	16.853	43 39.78	9.61	12.05	31 47.41	22 9 1.44
103	10	. .	. .	. .	. .	. .	. .	58.5	31 8.60	24.02	0.95	.	4	40.085	19 19.64	9.63	8.46	31 33.57	21 44 37.73
104	11	. .	. .	. .	. .	15.5	. .	. .	32 58.90	24.02	0.95	.	4	36.632	22 55.95	9.46	8.98	33 23.87	48 14.39
105	10	. .	. .	. .	41.	. .	. .	. .	34 40.88	24.02	0.95	.	5	38.638	20 51.58	9.32	8.68	35 5.85	46 9.58
106	9	. .	. .	. .	. .	. .	38.	. .	35 4.87	24.02	0.95	.	5	40.950	18 26.29	9.28	8.32	35 29.84	43 43.89
107	10	. .	. .	. .	. .	. .	41.6	. .	36 8.46	24.02	0.95	.	5	43.080	16 12.73	9.19	8.00	36 33.43	21 41 29.92
108	7	. .	. .	. .	. .	. .	. .	52.5	37 2.45	24.02	0.95	.	3	22.370	37 58.02	9.11	11.20	37 27.42	22 3 18.33
109	7	. .	. .	32.	. .	5.	22.	. .	41 48.65	24.03	0.95	III.	3	33.292	26 33.70	8.69	9.48	42 13.63	21 51 51.87
110	8	. .	. .	. .	17.	. .	. .	. .	43 16.87	24.03	0.95	.	4	37.352	22 10.53	8.56	8.87	43 41.85	47 27.96
111	9	. .	7.	24.	. .	56.5	. .	. .	45 40.39	24.03	0.95	III.	6	53.150	5 40.56	8.35	7.46	46 5.37	21 30 56.37
112	9	. .	9.	. .	42.	. .	. .	. .	48 42.18	24.03	0.95	IV.	2	17.085	43 26.04	8.08	12.02	49 7.16	22 8 46.14
113	10	. .	. .	. .	. .	. .	22.	. .	48 48.88	24.03	0.95	.	3	37.394	22 15.80	8.08	8.86	49 13.86	21 47 32.74
114	10	. .	. .	37.	. .	. .	. .	. .	50 53.72	24.03	0.96	.	1	14.780	45 49.41	7.90	12.39	51 18.71	22 11 9.70
115	9	. .	. .	48.	. .	. .	. .	. .	53 4.64	24.03	0.96	.	3	30.298	29 41.55	7.71	9.96	53 29.63	21 54 59.22
116	9	. .	. .	4.5	. .	37.5	. .	. .	54 20.98	24.03	0.96	.	2	18.278	42 11.04	7.61	11.84	54 45.97	22 7 30.49
117	10	. .	. .	. .	10.8	. .	. .	. .	56 10.68	24.03	0.96	.	4	38.783	20 40.53	7.45	8.63	56 35.67	21 45 56.61
118	5	. .	59.	15.5	32.	49.	. .	. .	20 59 32.21	24.03	0.96	IV.	4	37.235	22 17.87	7.16	8.89	20 59 57.20	47 33.92
119	11	. .	27.	. .	. .	. .	. .	. .	21 2 0.37	24.03	0.96	.	4	39.442	19 58.36	6.95	8.52	21 2 25.36	45 13.83
120	8	. .	. .	21.	. .	54.	. .	. .	21 3 37.59	+24.04	+0.96	III.	5	46.945	−12 10.00	− 6.82	− 7.38	21 4 2.59	−21 37 24.20

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(181) 78. Micrometer reading assumed as $24^r.770$, not $19^r.770$.

(181) 80. Time of transit over T. II assumed as 42^s instead of 32^s.

(181) 88. Micrometer reading assumed as $32^r.090$ instead of $31^r.090$.

(181) 103. Right ascension differs from Arg. Z. 237, $5 = 10^s.4$.

ZONE 181. JULY 19. S. $D_\circ = -21° 25' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
121	8	. .	41.	58.	14.5	. .	. .	. .	21 5 14.46	+24.04	+0.96	.	3	30.502	−29 28.63	− 6.68	− 9.93	21 5 39.46	−21 54 45.24
122	9	. .	. .	. .	52.	. .	. .	. .	6 51.90	24.04	0.97	.	2	22.058	38 14.15	6.55	11.26	7 16.91	22 3 31.96
123	9	. .	. .	. .	35.5	. .	9–	. .	21 8 35.62	+24.04	+0.97	.	1	12.575	−48 8.37	− 6.43	−12.75	21 9 0.63	−22 13 27.55

ZONE 182. JULY 20. C. $D_\circ = -28° 18' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	25.2	42.2	0.5	17.7	. .	17 48 42.62	+24.95	+1.02	IV.	3	34.295	−25 30.70	−18.05	− 3.17	17 49 8.59	−28 44 11.92
2	9.10	. .	. .	. .	. .	18.	35.6	. .	49 0.43	24.95	0.83	V.	3	26.095	34 4.85	18.03	4.77	49 26.21	52 47.65
3	10	. .	. .	. .	46.2	. .	21.5	. .	50 46.26	24.95	1.02	IV.	4	36.465	23 6.18	17.89	− 2.74	51 12.23	41 46.81
4	10	. .	. .	. .	. .	29.5	47.	. .	52 11.98	24.94	1.35	V.	5	54.537	4 13.61	17.77	+ 0.77	52 38.27	22 50.61
5	9	. .	. .	. .	. .	. .	25.2	. .	53 50.15	24.94	0.99	VI.	3	34.606	25 10.60	17.64	− 3.10	54 16.08	43 51.34
6	9	. .	. .	. .	. .	37.5	54.5	. .	55 19.70	24.94	1.03	V.	3	37.268	22 23.95	17.52	2.58	55 45.67	41 4.05
7	9	. .	. .	. .	. .	57.3	14.8	. .	56 39.76	24.94	1.19	V.	4	45.485	13 35.39	17.41	0.99	57 5.89	32 13.79
8	7	. .	. .	51.7	9.2	26.2	54.2	. .	58 9.10	24.93	1.27	IV.	5	49.558	9 26.22	17.29	0.18	58 35.30	28 3.69
9	9	. .	. .	. .	. .	12.8	30.5	. .	17 58 55.33	24.93	0.92	V.	3	32.420	27 28.16	17.23	3.52	17 59 21.18	46 8.91
10	8	. .	25.6	43.2	0.3	. .	. .	. .	18 2 0.68	24.93	0.74	III.	3	23.381	36 55.42	16.96	5.30	18 2 26.35	28 55 37.68
11	9.10	. .	. .	. .	. .	35.3	53.5	. .	2 17.92	24.93	0.60	V.	2	16.281	44 16.78	16.94	6.71	2 43.45	29 3 0.43
12	9.10	. .	. .	. .	49.5	. .	. .	. .	3 49.36	24.93	0.81	IV.	3	27.210	32 55.16	16.82	4.55	4 15.10	28 51 36.53
13	9	. .	. .	18.2	36.	. .	. .	. .	4 35.86	24.93	0.79	III.	3	26.403	33 45.91	16.75	4.71	5 1.58	52 27.37
14	9	. .	. .	. .	. .	19.5	. .	55.	5 2.06	24.92	0.98	V.	3	35.909	23 48.97	16.71	2.84	5 27.96	42 28.52
15	9	. .	. .	. .	. .	. .	52.2	. .	5 17.14	24.92	1.06	VI.	3	39.197	20 22.52	16.69	2.21	5 43.12	39 1.42
16	8	. .	52.5	10.2	27.8	45.4	2.2	. .	7 27.65	24.92	0.80	IV.	3	26.503	33 38.94	16.51	4.69	7 53.37	28 52 20.14
17	9	. .	51.3	8.8	26.8	. .	. .	. .	9 26.66	24.92	0.57	III.	2	16.085	44 28.44	16.34	6.76	9 52.15	29 3 11.54
18	9	. .	52.	10.2	27.2	. .	. .	. .	10 27.52	24.92	0.49	III.	2	12.052	48 41.35	16.26	7.56	10 52.93	29 7 25.17
19	9	. .	. .	. .	2.3	19.5	. .	. .	11 12.04	24.92	0.90	V.	3	32.577	27 18.25	16.20	3.49	11 27.86	28 45 57.94
20	8	. .	. .	47.2	4.8	22.5	39.4	. .	12 4.74	24.92	1.21	IV.	5	48.115	10 56.73	16.12	0.45	12 30.87	29 33.30
21	9.10	. .	. .	. .	19.5	36.6	. .	. .	13 19.26	24.92	1.23	V.	5	48.986	10 2.00	16.01	0.30	13 45.41	28 28 38.31
22	9	. .	. .	. .	14.3	31.5	. .	. .	14 13.94	24.92	0.44	V.	2	9.985	50 51.39	15.93	7.97	14 39.30	29 9 35.29
23	9	. .	. .	52.5	9.8	27.5	. .	. .	18 9.99	24.91	1.22	IV.	5	49.571	9 25.40	15.60	0.16	18 36.12	28 28 1.16
24	9	. .	. .	. .	. .	. .	7.	. .	18 31.93	24.91	0.76	VI.	3	26.872	33 15.68	15.57	4.62	18 57.60	51 55.87
25	8.9	. .	59.7	17.5	34.8	. .	. .	. .	20 34.97	24.91	0.73	III.	3	25.574	34 37.79	15.40	4.88	21 0.61	53 18.07
26	9	. .	. .	. .	57.5	14.3	32.	. .	21 57.03	24.91	1.05	V.	5	41.474	17 53.65	15.28	1.76	22 22.99	36 30.69
27	9	. .	. .	. .	. .	35.3	. .	. .	24 17.83	24.91	1.22	V.	5	50.369	8 35.35	15.08	0.03	24 43.96	27 10.46
28	8	. .	. .	50.5	8.2	26.	43.3	. .	27 8.24	24.90	1.01	IV.	4	40.572	18 48.38	14.84	1.94	27 34.15	37 25.16
29	9	. .	. .	. .	19.3	37.3	54.5	. .	29 19.46	24.90	1.01	V.	4	40.723	19 41.89	14.65	− 2.10	29 45.37	38 18.64
30	9	. .	. .	54.2	. .	. .	. .	. .	31 11.97	24.90	1.27	III.	5	54.115	4 39.91	14.49	+ 0.72	31 38.14	23 13.71
31	9	. .	. .	. .	. .	40.5	. .	. .	31 22.77	24.90	0.62	V.	2	21.495	38 49.71	14.48	− 5.68	31 48.29	28 57 29.87
32	10	. .	. .	. .	. .	. .	13.8	. .	31 38.63	24.90	0.45	VI.	2	13.922	46 44.52	14.45	7.19	32 3.98	29 5 26.16
33	9	. .	. .	8.	25.5	. .	0.5	. .	33 25.50	24.90	1.04	IV.	4	42.549	16 44.36	14.31	− 1.54	33 51.44	28 35 20.21
34	9	. .	41.	58.5	. .	. .	. .	. .	35 16.28	24.89	1.28	III.	5	55.258	3 28.28	14.14	+ 0.93	35 42.45	22 1.49
35	9	. .	. .	. .	44.3	2.	19.5	. .	35 44.29	24.89	0.64	V.	3	23.442	36 51.40	14.11	− 5.29	36 10.82	55 30.80
36	8	. .	9.	26.	43.8	1.6	18.5	. .	37 43.86	24.89	1.20	IV.	5	51.362	7 33.01	13.93	+ 0.17	38 9.95	26 7.77
37	9	. .	52.5	10.5	27.5	45.3	. .	. .	40 27.75	24.89	0.98	IV.	3	32.148	27 45.29	13.71	− 3.57	40 53.62	46 22.57
38	9.10	. .	. .	23.5	41.3	. .	. .	. .	44 41.16	24.89	0.66	III.	3	25.781	34 24.68	13.34	4.83	45 6.71	53 2.85
39	10	. .	. .	. .	27.2	. .	. .	. .	45 27.06	24.88	0.84	IV.	4	34.456	25 12.25	13.28	3.11	45 52.78	43 48.64
40	9.10	. .	44.5	2.3	19.5	. .	. .	. .	48 19.75	24.88	0.57	III.	3	22.252	38 6.24	13.04	5.53	48 45.20	56 44.81
41	9	. .	. .	56.5	14.2	32.2	. .	. .	49 14.26	24.88	0.75	IV.	3	31.223	28 43.39	12.96	3.76	49 39.89	47 20.11
42	9	. .	. .	. .	10.	27.6	45.2	. .	18 50 9.97	+24.88	+0.63	V.	3	24.808	−35 25.47	−12.88	− 5.02	18 50 35.48	−28 54 3.37

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
July 20,	0	. . .	. .	. .	. .	. .	359 59 63.32	30.0010

REMARKS.

(182) 7. Declination 10′ discordant from Arg. Z. 223, 41.

(182) 29. Micrometer reading assumed as $39^r.723$, not $40^r.723$.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 182	July 20,	17 45	77 39 65.8	58.	64.3	57.3	52.4	61.	59.80	30.076	77.8	72.7	76.7	75.7	76.2
		18 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.3			
		18 20	. .	. .	. .	. .	. .	. .	. .	30.072	. .	71.8			
		18 40	. .	. .	. .	. .	. .	. .	. .	30.070	76.	71.3			
		19 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.7			
		19 20	65.5	58.2	64.6	58.3	52.5	60.2	59.88	30.068	75.4	70.	75.5	73.5	

ZONE 182. JULY 20. C. $D_0 = -28° 18' 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
43	9	. .	. .	. .	12.5	. .	47.5	. .	18 51 12.40	+24.88	+0.61	VI.	3	24.088	−36 10.44	−12.79	− 5.16	18 51 37.89	−28 54 48.39
44	9.10	. .	. .	. .	. .	43.5	8.	. .	51 25.69	24.88	0.48	V.	2	17.656	42 50.42	12.78	6.44	51 51.05	29 1 29.64
45	9	. .	. .	. .	. .	57.	. .	32.5	52 39.48	24.88	0.66	V.	3	27.785	32 18.78	12.67	4.43	53 5.02	28 50 55.88
46	9	. .	. .	. .	. .	. .	56.2	. .	53 21.14	24.88	0.67	VI.	3	27.467	32 38.60	12.61	4.50	53 46.69	28 51 15.71
47	9.10	. .	. .	29.2	. .	4.6	. .	. .	54 46.86	24.88	0.43	IV.	2	14.587	46 2.76	12.50	7.05	55 12.17	29 4 42.31
48	9	. .	49.2	. .	. .	43.	. .	. .	57 24.95	24.87	0.63	IV.	3	26.388	33 46.80	12.27	4.71	57 50.45	28 52 23.78
49	7.8	. .	. .	21.	38.1	56.	13.5	. .	57 38.35	24.87	0.65	IV.	3	27.002	33 8.09	12.25	4.59	58 3.87	51 44.93
50	8.9	. .	. .	. .	2.7	20.5	38.2	. .	18 59 2.81	24.87	0.52	V.	3	20.902	39 30.47	12.13	5.80	18 59 28.20	28 58 8.40
51	9	. .	24.	41.6	59.2	. .	. .	. .	19 0 59.31	24.87	0.37	III.	2	13.512	47 9.92	11.97	7.29	19 1 24.55	29 5 49.18
52	9	. .	. .	. .	37.7	55.7	. .	. .	1 20.38	24.87	0.74	V.	3	32.120	27 46.87	11.92	− 3.58	1 45.99	28 46 22.37
53	9.10	. .	. .	. .	. .	31.3	49.3	. .	2 31.53	24.87	1.18	V.	5	54.208	4 34.26	11.86	+ 0.76	2 57.58	23 5.36
54	10	. .	2.8	20.2	. .	55.1	. .	. .	4 37.85	24.87	0.85	IV.	3	38.367	21 15.17	11.67	− 2.35	5 3.57	39 49.19
55	8	. .	. .	39.7	57.2	15.	. .	. .	6 57.25	24.86	0.54	IV.	3	23.397	36 54.41	11.47	5.32	7 22.65	55 31.20
56	9	. .	27.2	45.2	2.5	. .	. .	. .	9 2.61	24.86	1.03	III.	5	47.852	11 12.99	11.29	0.48	9 28.50	29 44.76
57	10	. .	38.2	. .	13.5	. .	. .	. .	11 13.44	24.86	0.71	III.	3	31.938	27 58.41	11.11	3.62	11 39.01	46 33.14
58	9	. .	. .	. .	26.2	44.	1.5	. .	11 26.30	24.86	0.71	V.	3	32.383	27 30.49	11.10	3.52	11 51.87	46 5.11
59	9	. .	13.8	. .	. .	. .	. .	. .	13 49.20	24.86	0.51	II.	3	21.885	38 28.95	10.90	5.62	14 14.57	57 5.47
60	9	. .	22.	. .	39.8	14.5	. .	. .	13 57.21	24.86	0.49	IV.	3	21.380	39 0.93	10.89	5.72	14 22.56	57 37.54
61	10	. .	. .	. .	. .	. .	43.5	. .	14 8.38	24.86	0.46	V.	3	19.830	40 37.72	10.87	6.03	14 33.70	59 14.62
62	9	. .	. .	. .	. .	. .	. .	. .	15	24.85	0.76	VII.	3	34.828	24 56.07	10.80	3.04	15	43 29.91
63	9	. .	. .	6.5	24.	41.5	. .	. .	21 24.00	24.85	0.81	IV.	4	38.453	21 1.43	10.28	2.33	21 29.66	39 34.04
64	8.9	. .	. .	58.2	15.3	33.5	. .	. .	22 15.70	24.85	0.98	IV.	5	46.282	12 51.92	10.21	0.79	22 41.53	31 22.92
65	9	. .	. .	. .	. .	. .	. .	18.5	22 25.69	24.85	0.77	VII.	3	37.102	22 33.50	10.20	2.60	22 51.31	41 6.30
66	9	. .	. .	. .	. .	10.5	28.	. .	23 52.91	24.85	0.59	V.	3	27.864	32 13.76	10.08	4.43	24 18.35	28 50 48.27
67	9.10	. .	31.3	. .	. .	. .	. .	. .	26 6.72	24.85	0.37	II.	2	17.571	42 54.88	9.90	6.48	26 31.94	29 1 31.26
68	9	. .	. .	57.2	15.	32.5	50.3	. .	26 14.93	24.85	0.39	IV.	2	19.455	40 57.53	9.89	6.10	26 40.17	28 59 33.52
69	9	. .	. .	. .	. .	55.5	12.5	. .	19 26 37.56	+24.85	+0.40	V.	2	19.026	−41 24.44	− 9.86	− 6.19	19 27 2.81	−29 0 0.49

ZONE 183. JULY 20. C. $D_0 = -23° 17' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	37.1	54.	10.8	. .	. .	. .	20 12 10.87	+24.82	+0.42	III.	3	21.688	−38 41.49	−12.12	− 5.37	20 12 36.11	−23 56 48.98
2	8	. .	27.5	34.2	51.3	8.	25.	. .	14 1.23	24.82	0.42	IV.	3	21.313	39 5.14	11.95	5.43	15 26.47	57 12.52
3	9.10	. .	. .	. .	3.2	. .	37.	. .	16 3.24	24.82	0.41	VI.	3	20.838	39 34.24	11.88	5.51	16 28.47	57 41.63
4	9	. .	. .	. .	51.3	. .	25.7	. .	18 51.64	24.82	0.38	VI.	5	46.922	12 11.44	11.71	1.25	19 16.84	30 14.40
5	10	. .	. .	. .	. .	. .	. .	. .	21	24.82	0.38	.	3	35.953	. . .	. .	3.03		
6	9	. .	18.3	35.1	51.7	9.	. .	. .	24 51.96	24.82	0.38	IV.	3	32.542	27 20.63	11.33	3.60	25 17.16	23 45 25.56
7	9	. .	38.5	. .	12.5	. .	. .	. .	26 12.43	24.82	0.39	II.	2	15.858	44 42.17	11.27	6.33	26 37.64	24 2 49.77
8	10	. .	14.7	. .	48.2	. .	. .	. .	30 48.30	24.82	0.36	II.	5	43.916	15 19.87	11.00	1.72	31 13.48	23 33 22.59
9	9	. .	4.8	21.8	38.7	. .	. .	. .	32 38.65	24.82	0.36	III.	3	37.677	21 58.35	10.90	2.75	33 3.83	40 2.00
10	9	. .	. .	. .	58.3	15.	32.	. .	32 58.27	24.82	0.35	V.	4	45.264	13 54.39	10.88	1.51	33 23.44	23 31 56.78
11	9	. .	. .	8.3	25.1	32.3	. .	. .	34 25.19	24.82	0.37	IV.	2	18.273	42 11.67	10.80	5.94	34 50.38	24 0 18.41
12	9.10	. .	. .	9.2	26.	43.	. .	. .	35 26.04	24.82	0.36	IV.	3	34.321	25 29.07	10.74	3.31	35 51.22	23 43 33.12
13	10	. .	. .	47.8	. .	21.	. .	. .	37 4.36	24.82	0.38	IV.	2	14.650	45 58.75	10.65	6.52	37 29.56	24 4 5.92
14	9	. .	. .	19.5	. .	53.2	. .	. .	38 36.32	24.82	0.36	IV.	2	17.388	43 7.16	10.56	6.08	39 1.50	24 1 13.80
15	9	. .	. .	. .	. .	22.2	38.9	. .	39 5.37	24.82	0.33	V.	5	53.263	5 33.59	10.54	0.22	39 30.52	23 23 34.35
16	10	. .	. .	38.	. .	. .	. .	. .	45 55.01	24.82	0.32	III.	4	51.848	6 59.93	10.15	0.45	46 20.15	25 0.53
17	9	. .	. .	50.3	. .	. .	41.3	. .	52 7.49	24.81	0.30	III.	5	49.397	9 36.25	9.82	0.85	52 32.60	27 36.92
18	8.9	. .	. .	. .	16.	33.5	. .	. .	20 52 16.28	+24.81	+0.31	V.	3	37.992	−21 38.33	− 9.81	− 2.70	20 52 41.40	−23 39 40.84

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 183	July 20, 20 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.5			
	20 20	72 39 69.4	63.9	68.	62.9	56.2	63.7	64.02	30.058	74.5	69.4	75.5	75.	76.2
	20 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.9			
	21 0	. .	. .	. .	. .	. .	. .	. .	30.058	. .	68.7			
	21 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.5			
	21 40	70.1	64.2	68.2	63.1	56.1	63.9	64.27	30.052	73.5	68.4	74.6	73.6	
	21 52	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.2			

REMARKS.

(182) 44. Time of transit over T. VI assumed as 0ˢ.8 instead of 8ˢ.

(182) 52. Transits over T.'s V and VI assumed as recorded over T.'s IV and V.

(182) 53. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

(182) 60. Transit over T. III assumed to have been recorded as over T. IV.

(183) 2. Time of transits over T.'s III, IV, V, and VI assumed as 44ˢ.2, 1ˢ.3, 18ˢ, and 35ˢ instead of 34ˢ.2, 51ˢ.3, 8ˢ, and 25ˢ; and minutes as 15, not 14.

(183) 11. Time of transit over T. V assumed as 42ˢ.3 instead of 52ˢ.3.

ZONE 183. JULY 20. C. $D_0 = -23° 17' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	8.9	. .	9.6	26.3	43.2	. .	17.5	. .	20 57 43.41	+24.81	+0.30	IV.	3	29.278	−30 45.48	− 9.51	− 4.13	20 58 8.52	−23 48 49.12
20	8.9	. .	21.7	. .	. .	12.	. .	. .	57 55.34	24.81	0.30	IV.	3	33.062	26 47.94	9.50	3.51	20 58 20.45	44 50.95
21	9.10	. .	. .	25.3	42.8	. .	. .	. .	20 59 42.48	24.81	0.28	III.	4	45.272	13 53.00	9.40	1.50	21 0 7.57	31 53.90
22	9	. .	. .	16.3	32.9	49.8	. .	. .	21 1 32.95	24.81	0.31	IV.	3	23.518	36 46.77	9.31	5.06	1 58.07	54 51.14
23	9	. .	. .	11.8	27.8	. .	1.	. .	2 27.94	24.81	0.30	IV.	4	34.418	25 14.64	9.26	5.27	2 53.05	43 17.17
24	9	. .	47.2	1.8	. .	37.3	. .	. .	4 20.80	24.81	0.27	IV.	5	54.238	4 32.38	9.16	0.02	4 45.88	22 31.56
25	9	. .	. .	10.	27.	43.8	. .	. .	5 26.98	24.81	0.27	IV.	4	47.399	11 39.93	9.10	1.15	5 52.06	29 40.18
26	10	. .	. .	21.8	37.5	55.2	. .	. .	7 38.22	24.81	0.26	IV.	5	50.950	7 58.69	8.99	0.55	8 3.29	25 58.23
27	8.9	. .	32.5	49.7	6.5	. .	. .	. .	15 6.48	24.82	0.25	III.	5	53.575	5 13.89	8.60	0.14	15 31.55	23 12.63
28	9	. .	. .	. .	. .	27.	43.5	. .	15 19.96	24.82	0.28	V.	2	22.458	37 49.37	8.59	5.27	15 45.06	55 53.23
29	10	. .	. .	. .	54.?	. .	. .	. .	20 53.88	24.82	0.26	IV.	3	24.541	35 42.59	8.29	4.91	21 18.96	53 45.79
30	10	. .	. .	. .	. .	. .	22.?	. .	20 48.43	24.82	0.25	VI.	3	26.384	33 46.61	8.30	4.61	21 13.50	51 49.52
31	9	. .	40.8	. .	14.7	31.6	. .	. .	23 14.66	24.82	0.24	IV.	3	34.738	25 2.72	8.18	3.21	23 39.72	23 43 4.11
32	8	. .	41.6	58.3	15.5	. .	. .	. .	26 15.43	24.82	0.25	III.	2	11.689	49 4.11	8.03	7.05	26 40.50	24 7 9.19
33	9	. .	. .	. .	. .	40.3	57.2	. .	26 23.55	24.82	0.23	V.	3	30.941	29 0.77	8.02	3.86	26 48.60	23 47 2.65
34	9	. .	26.	43.2	59.5	. .	. .	. .	28 59.77	24.82	0.23	III.	3	33.606	26 13.88	7.89	3.42	29 24.82	44 15.19
35	9	. .	. .	42.5	59.1	16.3	. .	. .	30 59.25	24.82	0.23	IV.	3	25.730	34 27.88	7.79	4.72	31 24.30	52 30.39
36	7	12.1	29.	45.6	2.5	19.4	36.1	53.2	33 2.56	24.82	0.23	IV.	3	22.075	38 17.22	7.70	5.33	33 27.61	56 20.25
37	9	. .	. .	45.2	. .	19.5	. .	. .	34 2.34	24.82	0.22	IV.	3	27.015	33 7.27	7.65	4.51	34 27.38	51 9.43
38	10	. .	. .	56.	12.2	29.2	. .	. .	40 12.50	24.82	0.18	IV.	5	46.295	12 51.11	7.36	1.32	40 37.50	30 49.79
39	8.9	. .	52.7	9.4	26.3	43.5	. .	. .	42 26.42	24.82	0.20	IV.	3	20.497	39 56.25	7.27	5.58	42 51.44	57 59.10
40	9	. .	0.3	. .	34.3	. .	. .	. .	46 34.21	24.82	0.20	II.	2	18.675	41 45.57	7.09	5.90	46 59.23	59 48.56
41	9	. .	. .	. .	50.2	7.	24.	. .	46 50.22	24.82	0.19	V.	3	32.285	27 36.64	7.08	3.63	47 15.23	45 37.35
42	9	. .	45.8	2.9	19.5	36.3	. .	. .	49 19.48	24.82	0.19	IV.	3	21.835	38 32.15	6.96	5.37	49 44.49	56 34.48
43	8.9	. .	. .	8.8	25.2	42.5	59.	. .	50 25.49	24.83	0.17	IV.	4	42.032	17 16.69	6.91	2.03	21 50 50.49	23 35 15.63
44	9	. .	16.5	33.5	50.5	7.5	. .	. .	21 51 50.44	+24.83	+0.19	IV.	2	17.829	−42 39.27	− 6.86	− 6.03	22 52 15.46	−24 0 42.16

ZONE 184. JULY 24. S. $D_0 = -20° 47' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	48.	. .	21.	. .	. .	. .	20 14 21.06	+25.25	+0.38	IV.	5	46.578	−12 33.28	−10.15	− 7.48	20 14 46.69	−21 0 20.91
2	9	. .	. .	. .	. .	. .	43.	. .	15 10.02	25.25	0.38	.	3	24.571	35 40.27	10.07	10.84	15 35.65	23 31.18
3	9	. .	. .	25.	41.5	. .	. .	. .	17 41.46	25.25	0.38	.	3	30.228	29 45.82	9.85	9.97	18 7.09	17 35.64
4	7	18.	34.5	51.	8.	. .	. .	. .	20 51.15	25.25	0.38	.	3	24.462	35 47.61	9.63	10.86	20 16.78	23 38.10
5	7	. .	. .	16.5	49.5	. .	. .	. .	21 49.55	25.25	0.38	.	4	35.065	24 33.47	9.48	9.23	22 15.18	12 22.18
6	10	. .	. .	2.	. .	. .	. .	. .	25 18.60	25.25	0.38	.	3	23.978	36 17.84	9.18	10.93	25 44.23	24 7.95
7	9	. .	. .	. .	. .	3.5	. .	. .	25 47.02	25.25	0.38	.	6	44.239	15 0.17	9.21	7.85	25 12.65	2 47.23
8	10	. .	. .	56.5	. .	. .	. .	. .	27 3.13	25.25	0.38	.	2	18.770	41 40.00	9.01	11.72	27 38.76	29 30.73
9	7	. .	. .	. .	. .	. .	52.5	. .	27 19.51	25.25	0.38	.	4	41.186	18 10.48	9.00	8.30	27 45.14	5 57.78
10	7	. .	1.	. .	. .	. .	. .	. .	29 17.63	25.25	0.38	.	2	17.618	42 52.00	8.80	11.90	29 43.26	30 42.70
11	10	. .	. .	49.5	. .	. .	. .	. .	34 6.09	25.24	0.38	.	3	27.420	32 42.12	8.41	10.40	34 31.71	20 30.93
12	8	. .	. .	27.	. .	0.5	. .	. .	35 43.73	25.24	0.38	.	2	22.330	37 56.95	8.27	10.18	36 9.35	25 45.40
13	9	. .	35.5	. .	8.5	. .	. .	. .	40 8.55	25.24	0.38	.	3	37.088	22 35.31	7.89	8.93	40 34.17	10 22.13
14	9	. .	7.	. .	40.	. .	. .	. .	45 40.11	25.24	0.38	.	2	17.502	43 0.02	7.43	11.91	46 5.73	30 49.36
15	9	. .	49.8	. .	22.5	. .	. .	. .	50 22.70	25.24	0.38	.	4	45.640	13 30.21	7.04	7.63	50 48.32	21 1 14.88
16	10	. .	45.	. .	. .	. .	. .	. .	53 18.36	25.24	0.37	.	4	5.552	7 19.55	6.80	7.00	53 43.97	20 55 3.35
17	9	. .	. .	35.5	. .	8.5	. .	. .	54 52.00	25.24	0.38	.	3	27.710	32 23.73	6.67	10.35	55 17.62	21 20 10.75
18	9	. .	. .	3.5	. .	36.5	. .	. .	20 58 20.08	25.24	0.38	.	4	41.210	18 7.96	6.39	8.30	20 58 45.70	21 5 52.65
19	6	. .	59.	. .	32.5	. .	5.5	. .	21 1 32.36	+25.24	+0.39	.	4	57.956	− 0 35.91	− 6.12	− 5.75	21 1 57.99	−20 48 17.78

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.		s.	s.	s.	s.	° ′ ″	r.
July 24,	0	. .	. . .	. .	. .	. .	359 59 62.89	30.0012

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″							in.	°	°	°	°	°
Zone 184	July 24, 20 10	70 9 60.	58.8	63.0	56.6	49.5	56.7	57.43	30.118	73.	65.6			
	20 35	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.			
	21 0	. .	. .	. .	. .	. .	. .	. .	30.110	72.	64.			
	21 16	. .	. .	. .	. .	. .	. .	. .	. .	. .	63.5			
	21 50	60.	58.8	63.0	58.0	49.3	56.7	57.63	30.104	74.2	63.8			

REMARKS.

(183) 19. Time of transit over T. VI assumed as $17^s.5$ instead of $47^s.5$.

(183) 28. Transits over T.'s V and VI assumed as 37^s and $53^s.5$, not 27^s and $43^s.5$.

(184) 4. Transits over T.'s II, III, IV, and V assumed as recorded over T.'s I, II, III, and IV, and minutes 19, not 20.

(184) 5. Transit over T. II assumed to have been recorded as over T. III.

(184) 7. Minutes assumed as 24, not 25.

(184) 10. Transit over T. III assumed as recorded over T. II.

(184) 13. Right ascension differs $18^s.2$ from Arg. Z. 243, 105; probably 1 thread interval in error.

(184) 16. Micrometer reading assumed as $49^r.552$, to agree with Mer. Circle, 1848, September 1, and Transit, July 24.

ZONE 184. JULY 24. S. $D_{\circ}=-20^{\circ}\ 47'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	9	. .	31.5	. .	4.8	. .	. .	. .	21 3 4.71	+25.25	+0.39	.	5	50.198	− 8 45.72	− 5.99	− 6.92	21 3 30.35	−20 56 28.63
21	9	. .	26.5	. .	59.5	. .	. .	. .	5 59.58	25.25	0.38	.	2	23.878	36 19.22	5.75	10.97	6 25.21	21 24 5.94
22	5	. .	. .	. .	. .	56.	12.5	. .	6 39.50	25.25	0.38	.	3	31.495	28 26.20	5.70	9.78	7 5.13	21 16 11.68
23	8	. .	56.5	. .	29.5	. .	. .	. .	9 29.56	25.25	0.39	.	5	49.120	9 53.33	5.46	7.08	9 55.20	20 57 35.87
24	8	. .	32.5	. .	5.8	. .	. .	. .	12 5.74	25.25	0.38	.	2	21.088	39 14.29	5.25	11.39	12 31.37	21 27 0.93
25	.	. .	40.	57.	13.5	. .	46.	. .	15 13.33	25.25	0.38	.	2	19.040	41 22.75	5.00	11.71	15 38.96	29 9.46
26	8	. .	52.5	. .	25.8	. .	. .	. .	17 25.80	25.25	0.37	.	1	10.016	50 47.50	4.84	13.08	17 51.42	38 35.42
27	9	. .	58.8	. .	32.	. .	. .	. .	23 32.07	25.25	0.37	.	2	6.506	49 15.12	4.34	12.90	23 57.69	37 2.36
28	9	. .	. .	. .	18.5	. .	1.5	. .	24 18.46	25.25	0.38	.	3	27.690	32 24.93	4.28	10.33	24 44.09	21 20 9.54
29	9	. .	. .	. .	3.	. .	. .	. .	26 2.89	25.25	0.39	.	5	51.750	7 8.47	4.14	6.69	26 28.53	20 54 49.30
30	9	. .	11.	27.5	44.	. .	. .	. .	28 44.09	25.25	0.39	.	4	41.031	18 18.51	3.92	8.31	29 9.73	21 6 0.74
31	10	. .	36.	. .	8.5	25.	. .	. .	34 8.70	25.26	0.39	.	4	41.462	17 52.59	3.50	8.24	34 34.35	5 34.33
32	10	. .	17.5	. .	. .	. .	. .	. .	40 50.73	25.26	0.39	.	3	35.280	24 28.89	2.97	9.19	41 16.38	12 11.05
33	10	. .	. .	3.	. .	. .	. .	. .	41 19.62	25.26	0.39	.	3	36.958	22 43.40	2.93	8.93	41 45.27	10 25.26
34	9	. .	. .	. .	2.	18.8	. .	. .	42 2.06	25.26	0.39	.	3	33.280	26 34.39	2.87	9.51	42 27.71	14 16.77
35	9	. .	16.	. .	47.	6.	. .	. .	21 46 49.20	+25.27	−0.39	.	4	39.502	−19 55.60	− 2.50	− 8.56	21 47 14.86	−21 7 36.66

ZONE 185. AUGUST 1. C. $D_{\circ}=-20^{\circ}\ 48'\ 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	34.2	. .	7.4	23.2	40.4	. .	17 50 7.21	+25.54	+0.95	IV.	4	45.608	−13 32.28	− 4.05	− 1.72	17 50 33.70	−21 1 38.05
2	9	. .	. .	17.	33.?	. .	. .	. .	51 33.29	25.54	0.95	III.	5	48.650	10 23.02	3.92	1.28	51 59.78	20 58 28.22
3	9	. .	. .	. .	13.2	30.	. .	. .	53 13.22	25.53	0.95	V.	2	18.506	41 57.24	3.77	5.69	53 39.70	21 30 6.70
4	9	. .	31.	47.	4.1	. .	. .	. .	56 3.95	25.52	0.95	III.	4	38.800	20 39.02	3.52	2.70	56 30.42	8 45.24
5	9	. .	52.	8.4	25.	. .	. .	. .	57 25.08	25.52	0.95	III.	2	17.789	42 41.52	3.39	5.79	57 51.55	30 50.70
6	7	. .	. .	. .	44.5	1.2	. .	. .	57 44.48	25.52	0.95	V.	2	21.245	39 5.45	3.37	5.29	58 10.95	27 14.11
7	9	. .	. .	. .	. .	. .	. .	45.2	57 55.51	25.52	0.95	VII.	3	35.172	24 34.79	3.35	3.24	58 21.98	12 41.38
8	8	. .	. .	. .	. .	20.	. .	. .	59 3.45	25.51	0.95	V.	3	31.977	27 55.77	3.25	3.70	59 29.91	16 2.72
9	7	. .	. .	. .	. .	. .	45.3	. .	17 59 12.30	25.51	0.95	VI.	2	20.627	39 44.21	3.23	5.38	17 59 38.76	27 52.82
10	9	. .	. .	5.2	21.5	. .	. .	. .	18 1 21.58	25.51	0.95	III.	3	28.165	31 55.26	3.04	4.27	18 1 48.04	20 2.57
11	3	. .	48.1	5.	21.2	38.	54.4	. .	18 4 21.39	+25.51	+0.95	IV.	4	41.838	−17 28.80	− 2.77	− 2.25	18 4 47.85	−21 5 33.82

ZONE 186. AUGUST 4. S. $D_{\circ}=-22^{\circ}\ 2'\ 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	36.	53.	. .	. .	. .	. .	20 2 9.64	+22.52	+1.92	.	4	38.810	−20 37.83	−11.21	− 8.61	20 2 34.08	−22 23 27.65
2	10	. .	46.	. .	19.	. .	. .	. .	4 19.19	22.51	1.88	IV.	3	32.406	27 29.23	11.01	9.62	4 43.58	30 19.86
3	8	. .	. .	. .	. .	13.	. .	54.	4 3.42	22.51	1.88	.	3	33.452	26 23.41	10.98	9.45	5 27.81	29 13.84
4	8	. .	18.3	. .	. .	. .	. .	. .	8 51.82	22.50	1.87	.	3	35.136	24 37.89	10.60	9.20	9 16.19	27 27.69
5	6	. .	. .	. .	48.	4.5	. .	. .	8 47.88	22.50	1.92	.	4	45.829	13 18.28	10.60	7.53	9 12.30	16 6.41
6	7	. .	20.5	37.5	54.	. .	. .	. .	12 54.10	22.50	1.91	IV.	4	56.642	1 55.54	10.22	5.86	13 18.51	4 41.62
7	9	. .	. .	. .	. .	. .	57.	. .	13 23.65	22.49	1.76	.	2	14.418	46 13.67	10.17	12.43	13 47.90	49 6.27
8	10	. .	. .	. .	. .	. .	42.	. .	15 8.76	22.49	1.80	.	3	31.060	28 53.12	10.02	9.83	15 33.05	31 42.97
9	10	. .	. .	. .	. .	. .	. .	12.	16 21.90	22.49	1.87	.	5	52.958	5 52.31	9.91	6.43	16 46.26	8 38.65
10	9	. .	. .	. .	. .	10.	26.5	. .	18 53.28	22.48	1.78	V.	3	32.028	27 52.64	9.68	9.68	19 17.54	30 42.00
11	6	. .	. .	. .	18.8	. .	52.	. .	20 18.69	22.48	1.67	IV.	1	5.590	50 12.60	9.55	13.83	20 42.84	53 5.98
12	9	. .	28.5	. .	. .	. .	. .	. .	23 2.11	22.48	1.68	.	2	13.578	36 37.94	9.32	12.56	23 26.27	39 29.82
13	9	. .	. .	. .	. .	. .	37.5	. .	23 4.15	22.48	1.68	.	2	13.180	37 3.84	9.32	12.62	23 28.31	39 55.78
14	8	. .	. .	. .	. .	. .	54.	. .	20 24 20.69	+22.48	+1.70	V.	1	19.090	−41 20.27	− 9.20	−11.69	20 24 44.87	−22 44 11.16

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
August 1, 0	. .	. .	. .	. .	. .	359 59 64.10	30.0038
4,	. .	. .	. .	. .	. .	63.36	30.0013

INSTRUMENT READINGS.

.	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1847. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 185	Aug. 1, 17 45	70 9 68.1	62.2	67.9	62.8	52.9	63.6	62.92	30.058	75.8	70.2	75.7	74.2	77.
	18 0	. .	. .	. .	. .	. .	. .	. .	30.064	75.	69.8			
Zone 186	Aug. 4, 20 0	71 24 58.7	54.	60.	53.	47.	55.9	54.77	30.018	77.	73.8			
	20 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.5			
	20 40	. .	. .	. .	. .	. .	. .	. .	30.010	76.8	73.2			
	21 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.			
	21 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.9			
	21 40	. .	. .	. .	. .	. .	. .	. .	30.004	76.	72.8			
	22 0	58.8	54.	60.	53.7	47.	55.9	54.90	29.990	75.5	72.5			

REMARKS.

(184) 27. Micrometer reading assumed as $11^{r}.506$, not $6^{r}.506$.

(184) 28. Time of transit over T. VI assumed as $51^{s}.5$ instead of $1^{s}.5$.

(184) 35. Time of transit over T. IV assumed as 49^{s} instead of 47^{s}.

(186) 3. Transits over T. I assumed as recorded over T. V, and minutes as 5, not 4.

(186) 11. Micrometer reading assumed as $10^{r}.590$, not $5^{r}.590$.

(186) 12. Micrometer reading assumed as $23^{r}.578$, not $13^{r}.578$.

(186) 13. Micrometer reading assumed as $23^{r}.180$, not $13^{r}.180$.

ZONE 186. AUGUST 4. S. $D_0 = -22° 30' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	8	. .	27.7	. .	. .	. .	. .	. .	20 37 1.21	+22.46	+1.70	.	4	45.319	−13 49.48	− 8.09	− 7.61	20 37 25.37	−22 16 35.18
16	7	. .	. .	. .	22.	. .	55.	. .	37 21.80	22.46	1.61	.	2	20.848	39 29.91	8.06	11.43	37 45.87	42 19.40
17	9	. .	. .	. .	43.5	. .	. .	. .	40 43.37	22.45	1.63	.	3	35.756	23 58.84	7.77	9.10	41 7.45	26 45.71
18	9	. .	11.	. .	44.5	. .	. .	. .	45 44.48	22.44	1.56	IV.	2	22.450	37 49.68	7.34	11.17	46 8.48	40 38.19
19	9	. .	. .	. .	13.	. .	46.	. .	46 12.80	22.44	1.55	IV.	2	21.712	38 35.79	7.30	11.29	46 36.79	41 24.38
20	7	. .	. .	. .	. .	4.	20.5	. .	47 47.26	22.44	1.57	.	3	28.272	31 48.41	7.17	10.26	48 11.27	34 35.84
21	9	. .	. .	. .	57.5	. .	. .	. .	53 57.36	22.44	1.53	.	3	29.530	30 29.61	6.66	10.06	54 21.33	33 16.33
22	8	. .	1.	. .	34.5	. .	. .	. .	20 59 34.44	22.43	1.54	IV.	5	45.919	14 17.71	6.20	7.65	20 59 58.41	17 1.56
23	6	. .	26.4	43.	0.	17.	. .	. .	21 5 59.97	22.42	1.39	IV.	2	13.826	46 50.30	5.68	12.55	21 5 23.78	49 38.53
24	6	. .	. .	. .	2.5	19.5	. .	. .	6 2.60	22.42	1.47	.	4	36.360	23 12.77	5.68	8.99	6 26.49	25 57.44
25	8	. .	43.8	0.	. .	33.5	. .	. .	8 16.98	22.42	1.46	.	4	40.445	18 55.41	5.50	8.36	8 40.86	21 39.27
26	9	. .	. .	. .	. .	9.5	. .	. .	9 52.72	22.42	1.39	.	2	23.199	37 2.82	5.37	11.07	10 16.53	39 49.26
27	8.9	. .	10.8	28.	45.	. .	. .	. .	16 44.66	22.41	1.41	.	4	43.580	15 39.14	4.84	7.85	17 8.48	18 21.83
28	8	. .	. .	. .	17.	33.8	. .	. .	17 16.99	22.41	1.37	.	3	33.060	26 48.01	4.79	9.51	17 40.77	29 32.31
29	9	. .	. .	59.	. .	. .	. .	. .	19 15.78	22.41	1.38	.	4	40.289	19 5.76	4.63	8.38	19 39.57	21 48.77
30	5	. .	. .	. .	45.5	. .	19.	. .	19 45.56	22.41	1.37	VI.	3	35.055	24 42.45	4.60	9.20	20 9.34	27 26.25
31	9	. .	3.	. .	36.	. .	. .	. .	22 36.22	22.40	1.30	.	2	22.979	37 15.62	4.38	11.10	22 59.92	40 1.10
32	8	. .	16.5	33.5	. .	7.	. .	. .	27 50.17	22.40	1.35	V.	5	51.459	7 26.93	3.98	6.63	28 13.92	10 7.54
33	8	. .	. .	. .	15.	. .	48.	. .	30 14.80	22.40	1.30	IV.	3	39.046	20 32.37	3.80	8.57	30 38.50	23 14.74
34	8	. .	2.8	. .	36.5	. .	. .	. .	32 36.36	22.40	1.25	IV.	3	26.308	33 51.81	3.62	10.58	33 0.01	36 36.01
35	10	. .	. .	. .	. .	32.	. .	. .	38 15.36	22.39	1.26	.	5	41.508	17 51.53	3.21	8.18	38 39.01	20 32.92
36	10	. .	13.	. .	47.	. .	. .	. .	44 46.70	22.39	1.20	IV.	4	36.872	22 40.46	2.76	8.91	45 10.29	25 22.13
37	10	. .	8.	. .	41.	. .	. .	. .	47 41.27	22.39	1.09	.	2	14.729	45 53.04	2.55	12.41	48 4.75	48 38.00
38	8	. .	50.5	. .	24.	. .	57.	. .	55 23.88	22.39	1.10	IV.	3	32.360	27 32.12	2.04	9.63	55 47.37	30 13.79
39	8	. .	32.3	49.	6.	22.5	. .	. .	21 59 5.84	+22.38	+1.10	.	4	42.640	−16 38.52	− 1.80	− 8.00	21 59 29.32	−22 19 18.32

ZONE 187. AUGUST 7. S. $D_0 = -20° 10' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	17.5	. .	. .	. .	. .	18 29 34.06	+22.51	+1.31	.	4	38.809	−20 38.46	−25.59	− 2.70	18 29 57.88	−20 31 6.75
2	10	. .	. .	. .	. .	. .	52.	. .	30 19.14	22.51	1.03	.	2	22.520	37 45.53	25.53	5.08	30 42.68	48 16.14
3	9	. .	. .	42.	. .	. .	. .	. .	33 58.51	22.50	1.19	.	3	31.187	28 45.70	25.30	3.82	33 22.20	39 14.82
4	7	. .	. .	. .	. .	. .	23.5	. .	32 7.08	22.50	1.39	.	4	42.890	16 23.33	25.30	2.12	33 30.97	26 50.75
5	9	. .	. .	0.	. .	. .	. .	. .	35 16.63	22.48	1.48	.	5	48.092	10 58.07	25.08	1.35	35 40.59	21 24.50
6	9	. .	. .	. .	. .	. .	. .	31.	35 58.15	22.48	1.05	.	2	23.020	37 14.05	25.04	5.01	36 21.68	47 44.10
7	7	. .	1.	18.	34.	. .	. .	. .	38 34.19	22.48	1.40	.	4	43.778	15 26.58	24.79	1.97	38 58.07	25 53.34
8	9	. .	. .	16.5	33.	. .	. .	. .	39 33.02	22.48	1.52	.	4	50.510	8 24.19	24.69	1.02	39 57.02	18 49.80
9	6	. .	. .	. .	22.	38.	. .	. .	40 21.72	22.48	1.36	.	3	40.558	18 57.61	24.62	2.46	40 45.56	29 24.69
10	7	. .	. .	42.	58.	. .	. .	. .	41 58.23	22.47	1.38	.	4	41.938	17 22.09	24.48	2.25	42 22.08	27 48.82
11	8	. .	. .	. .	. .	. .	15.	. .	42 42.12	22.47	1.47	.	5	46.960	12 9.05	24.41	1.51	43 6.06	22 34.97
12	8	. .	7.	. .	. .	. .	. .	. .	45 40.09	22.46	1.36	.	4	40.923	18 25.28	24.13	2.40	46 3.91	28 51.81
13	8	. .	. .	37.5	. .	. .	. .	. .	45 54.09	22.46	1.40	.	4	43.210	16 2.43	24.11	2.06	46 17.95	26 28.60
14	4	. .	28.5	45.	. .	. .	. .	. .	48 1.60	22.45	1.01	.	2	20.065	40 18.46	23.91	5.45	48 25.06	50 47.82
15	7	. .	. .	. .	. .	52.8	9.	. .	48 52.61	22.45	1.23	.	3	33.292	26 33.45	23.86	3.51	49 16.29	37 0.82
16	8	. .	51.5	. .	24.	. .	. .	. .	53 24.23	22.44	1.24	.	3	33.142	26 42.93	23.42	3.53	53 47.91	37 9.88
17	9	. .	. .	. .	. .	. .	5.	. .	53 32.10	22.44	0.93	.	1	14.955	45 39.88	23.41	6.19	53 55.47	56 9.48
18	9	. .	. .	. .	. .	. .	18.	. .	54 45.12	22.43	1.51	.	5	48.987	10 1.87	23.30	1.21	55 9.06	20 26.38
19	10	. .	30.8	. .	. .	. .	. .	. .	59 3.89	22.41	1.36	.	4	39.580	−19 49.63	22.90	− 2.58	59 27.66	−20 30 15.11
20	.	. .	. .	. .	. .	45.5	. .	. .	18 59 29.	+22.41	+1.40	.	.	.052	. . .	−22.86	. .	18 59 (52)	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
August 7		. .	. .	. .	. .	. .	359 59 62.78	30.0018

INSTRUMENT READINGS.

	Date.		Circle. A.		B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″							″	in.	°	°	°	°	°
Zone 187	Aug: 7,	18 20	69.32	31.5 32.5	26.9 27.1	32.9 33.4	28.2 29.4	21. 22.	27. 28.2	28.34	30.212	76.	66.3			
		18 50		. .	. .	. .	. .	. .	. .	. .	. .	. .	65.			
		19 10		. .	. .	. .	. .	. .	. .	. .	. .	. .	64.5			
		19 20		. .	. .	. .	. .	. .	. .	. .	30.262	74.	63.9			
		19 40		. .	. .	. .	. .	. .	. .	. .	. .	. .	63.6			
		20 0		. .	. .	. .	. .	. .	. .	. .	30.260	72.8	62.9			
		20 50		30. 31.5	28.2 28.2	33.8 34.5	28.8 29.5	22.2 23.	26. 26.	28.47	. .	. .	62.			

REMARKS.

(186) 22. Mic. reading assumed as 44r.919, not 45r.919, to agree with Arg. Z. 237, 38, and 247, 106.
(186) 23. Min. of transit assumed as 4, not 5.
(186) 32. Time of transit over T. V assumed as 6s.7 instead of 0s.7.
(187) 2. Right ascension differs 17s.2 from Arg. Z. 227, 64; probably 1 thread interval in error.
(187) 3. Minutes assumed as 32, not 33, to agree with Arg. Z. 227, 67, and 310, 68.
(187) 4. Transit over T. V assumed as recorded over T. VI, and minutes as 33, not 34.
(187) 6. Transit over T. VI assumed as recorded over T. VII.
(187) 15. Transits over T.'s IV and V ass'd as recorded over T.'s V and VI.
(187) 17. Right ascension differs 17s from Arg. Z. 224, 114; probably 1 thread interval in error.
(187) 18. Right ascension differs 28s.3 from Arg. Z. 227, 99.

ZONE 187. AUGUST 7. S. $D_0 = -20° 10' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	.	. .	. .	. .	. .	. .	39.	. .	19 0 6.10	+22.41	+1.58	.	6	52.632	− 6 13.08	−22.80	− 0.73	19 0 30.09	−20 16 36.61
22	8	. .	29.7	. .	. .	. .	19.	. .	1 46.20	22.41	1.28	.	3	34.965	24 48.47	22.65	3.26	2 9.89	35 14.38
23	9	. .	. .	. .	. .	36.	52.	. .	2 19.35	22.40	1.25	.	3	32.920	26 56.60	22.59	3.56	2 43.00	37 22.75
24	8	. .	. .	. .	. .	50.	. .	. .	3 33.51	22.40	1.21	.	3	30.332	29 39.17	22.48	3.95	3 57.12	40 5.60
25	9	. .	19.5	36.	. .	. .	. .	. .	6 52.56	22.39	1.16	.	3	27.850	32 14.83	22.17	4.31	7 16.11	42 41.31
26	9	. .	22.5	. .	. .	. .	. .	. .	7 55.63	22.39	1.07	.	3	22.375	37 58.52	22.08	5.12	8 19.09	48 25.72
27	9	. .	32.	. .	5.	. .	. .	. .	9 4.98	22.38	1.18	.	3	28 135	31 57.08	21.97	4.27	9 28.54	42 23.32
28	9	. .	44.	60.5	. .	. .	. .	. .	14 17.06	22.37	1.28	.	3	34.418	25 22.98	21.48	3.34	14 40.71	35 47.80
29	10	. .	. .	. .	. .	. .	35.	. .	14 2.17	22.37	1.28	.	3	34.075	25 43.94	21.51	3.39	14 25.82	36 8.84
30	10	. .	. .	. .	. .	20.	. .	. .	15 3.58	22.37	1.44	.	4	43.132	16 8.01	21.41	2.06	15 27.39	26 31.48
31	9	. .	. .	. .	. .	38.	. .	. .	16 21.46	22.36	1.14	.	4	25.435	34 38.61	21.29	4.68	16 44.96	45 4.58
32	9	. .	. .	. .	. .	17.	. .	. .	17 0.38	22.36	1.02	.	2	18.095	42 22.89	21.22	5.74	17 23.76	52 49.85
33	8	. .	. .	. .	. .	20.	. .	. .	18 19.86	22.35	1.23	.	3	30.818	29 8.49	21.13	3.88	18 43.44	39 33.50
34	9	. .	. .	. .	. .	. .	7.	. .	18 50.43	22.35	1.07	.	2	21.889	38 24.93	21.08	5.19	19 13.85	48 51.20
35	9	. .	42.5	. .	. .	. .	. .	. .	22 15.60	22.35	1.16	.	3	26.785	33 21.70	20.73	4.47	22 39.11	43 46.90
36	7	. .	. .	35.5	52.	. .	. .	. .	22 51.94	22.35	1.18	.	3	27.800	32 18.03	20.67	4.32	23 15.47	42 43.02
37	9	. .	34.5	. .	. .	. .	. .	. .	25 7.59	22.34	1.56	.	6	49.300	9 42.15	20.46	1.18	25 31.49	20 3.79
38	9	. .	. .	44.	. .	. .	. .	. .	27 0.61	22.33	1.50	.	5	46.070	13 4.99	20.28	1.63	27 24.44	23 26.90
39	9	. .	. .	. .	. .	57.	13.5	. .	27 56.94	22.33	1.21	.	3	28.808	31 14.60	20.22	4.17	28 20.48	41 38.99
40	9	16.	33.	. .	. .	. .	. .	. .	31 5.62	22.32	1.54	.	5	48.218	10 50.02	19.90	1.31	31 29.48	21 11.23
41	7	. .	. .	. .	. .	. .	12.	. .	30 55.38	22.32	1.02	.	2	17.720	42 46.47	19.94	5.80	31 18.72	53 12.21
42	9	. .	. .	. .	. .	16.	. .	. .	31 15.88	22.32	1.47	.	4	43.868	15 21.69	19.81	1.99	32 39.67	25 43.49
43	10	. .	38.	. .	. .	. .	. .	. .	34 11.09	22.31	1.39	.	4	38.975	20 27.55	19.60	2.66	34 34.19	30 49.81
44	10	. .	. .	. .	. .	. .	17.	. .	42 44.18	22.29	1.28	.	3	32.675	27 11.79	18.79	3.61	43 7.75	37 34.19
45	10	. .	. .	. .	. .	59.	. .	. .	45 42.49	22.28	1.19	.	3	26.710	33 26.28	18.51	4.48	46 5.96	43 49.27
46	10	. .	. .	. .	. .	48.	. .	. .	47 47.95	22.27	0.95	.	2	12.500	48 13.89	18.33	6.58	48 11.17	58 38.80
47	10	. .	. .	34.	. .	. .	. .	. .	49 50.57	22.27	1.44	.	4	40.725	18 38.27	18.11	2.42	50 14.28	28 58.80
48	10	. .	. .	. .	. .	. .	. .	8.	50 18.52	22.26	1.32	.	3	33.485	26 20.71	18.07	3.48	50 42.10	20 36 42.26
49	9	. .	46.5	. .	. .	. .	36.	. .	19 57 3.08	22.25	0.86	.	3	6.000	55 5.18	17.44	7.55	19 57 26.19	21 5 30.17
50	8	. .	. .	. .	7.0	23.5	40.	. .	20 0 6.94	22.24	0.93	.	1	9.756	51 5.01	17.15	7.00	20 0 30.11	21 1 29.16
51	9	. .	29.5	. .	3.	. .	. .	. .	5 2.72	22.23	1.26	.	3	29.120	30 55.28	16.70	4.12	5 26.21	20 41 16.10
52	8	. .	. .	52.2	. .	. .	. .	. .	7 8.78	22.22	1.47	.	4	41.083	18 15.81	16.51	2.36	7 32.47	28 34.68
53	8	. .	. .	. .	9.	25.3	. .	. .	8 8.88	22.22	1.53	.	5	44.490	14 44.35	16.42	1.85	8 32.63	25 2.62
54	8	. .	. .	11.	. .	44.	. .	. .	10 27.61	22.21	1.57	.	5	46.820	12 17.83	16.20	1.51	10 51.39	20 22 35.54
55	9	. .	50.5	. .	23.5	. .	. .	. .	14 23.57	22.20	0.95	.	1	10.788	49 59.04	15.84	6.85	14 46.72	21 0 21.73
56	9	. .	. .	36.	. .	8.5	. .	. .	15 52.32	22.20	1.47	.	4	40.155	19 14.11	15.71	2.40	16 15.99	20 29 32.31
57	9	. .	25.	. .	58.	. .	. .	. .	19 58.00	22.19	1.17	.	2	22.925	37 19.01	15.33	5.04	20 21.36	47 39.38
58	10	. .	. .	26.	. .	59.5	. .	. .	23 42.80	22.18	1.39	.	3	35.692	24 2.92	15.01	3.16	24 6.37	34 21.09
59	10	. .	46.5	. .	. .	. .	. .	. .	28 19.59	22.17	1.60	.	4	47.338	11 42.82	14.60	1.43	28 43.36	21 58.85
60	9	. .	30.	46.5	. .	. .	. .	. .	34 3.06	22.16	1.23	.	3	25.092	35 7.97	14.11	4.73	34 26.45	45 26.81
61	9	. .	. .	. .	. .	. .	29.	. .	51 56.15	22.12	1.51	.	3	39.856	19 41.10	12.66	2.53	52 19.78	29 56.29
62	4	. .	55.	12.	28.	44.5	1.	. .	55 28.15	22.12	1.56	.	4	42.859	16 24.71	12.39	2.09	55 51.83	26 39.19
63	7	. .	12.	29.	45.	1.	18.	. .	20 57 45.03	22.11	1.24	IV.	2	23.910	36 17.84	12.21	4.90	20 58 8.38	46 34.95
64	7	. .	45.5	1.8	18.	35.	. .	. .	21 0 18.32	22.11	1.22	V.	2	22.752	37 30.74	12.01	5.09	21 0 41.65	47 47.84
65	9	. .	. .	. .	. .	23.	. .	. .	3 6.34	22.10	1.08	.	1	14.450	46 11.35	11.80	6.33	3 29.52	56 29.48
66	8	. .	. .	46.	. .	. .	. .	. .	5 2.51	22.10	1.32	.	3	28.179	31 54.44	11.66	4.27	5 25.93	42 10.37
67	8	. .	. .	45.5	. .	18.	. .	. .	6 1.75	22.10	1.34	.	3	29.011	31 2.05	11.59	4.15	6 25.19	41 17.79
68	8	. .	12.5	. .	45.5	. .	. .	. .	7 45.50	22.09	1.24	.	3	23.006	37 18.75	11.46	5.05	8 8.83	47 35.26
69	8	. .	59.	. .	32.	. .	. .	. .	21 9 32.06	+22.09	+1.07	.	2	13.345	−47 20.01	−11.32	− 6.50	21 9 55.22	−20 57 37.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″							in.	°	°	°	°	°
Zone 187	Aug. 7, 21 0	. .	. .	. .	. .	. .	. .	. .	30.258	71.2	60.8			
	21 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	60.			
	21 40	. .	. .	. .	. .	. .	. .	. .	30.250	70.	60.4			
	22 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	59.6			
	22 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	60.2			
	22 30	69 32 {30. 31.	30. 30.2	33.9 34.3	30.6 30.6	24.2 24.2	25.8 26.0	29.23						

REMARKS.

(187) 22. Transit over T. III ass'd to have been recorded as over T, II.

(187) 30. Right ascension differs $16^s.6$ from Arg. Z. 310, 148; probably 1 thread interval in error.

(187) 33. Transit over T. IV assumed as recorded over T. V.

(187) 34. Transit over T. V ass'd as rec'ded over T. VI to agree with Arg. Z. 227, 133; 238, 32; and 310, 155.

(187) 39. Transits over T.'s IV and V assumed as recorded over T.'s V and VI.

(187) 41. Transit over T. V assumed as recorded over T. VI.

(187) 42. Transit over T. IV assumed as recorded over T. V.

(187) 46. Transit over T. IV assumed as recorded over T. V.

(187) 48. Right ascension differs $17^s.7$ from Arg. Z. 243, 36; probably 1 thread interval in error.

(187) 49. Transit over T. III ass'd to have been recorded as over T. II.

ZONE 187. AUGUST 7. S. $D_{\circ}=-20° 10' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″			h. m. s.	° ′ ″
70	10	. .	. .	. .	. .	28.5	. .	. .	21 10 11.97	+22.09	+1.30	.	3	26.446	−33 42.96	−11.28	− 4.54	21 10 35.36	−20 43 58.78
71	11	. .	. .	. .	30.	. .	. .	. .	13 29.88	22.09	1.54	.	5	40.364	19 3.37	11.05	2.45	13 53.51	29 16.87
72	11	. .	. .	13.	. .	46.	. .	. .	14 29.63	22.09	1.71	.	5	50.120	8 50.86	10.98	1.00	14 53.43	19 2.84
73	9	. .	4.5	. .	. .	. .	. .	. .	18 37.64	22.08	1.19	.	2	19.292	41 7.08	10.68	5.59	19 0.91	51 23.35
74	10	. .	. .	. .	. .	55.	. .	. .	18 38.35	22.08	1.13	.	1	15.947	44 37.30	10.68	6.10	19 1.56	54 54.08
75	10	. .	9.	25.5	. .	. .	. .	. .	20 42.10	22.08	1.61	.	4	44.363	14 49.56	10.54	1.85	21 5.77	25 1.95
76	10	. .	. .	57.	. .	. .	. .	. .	24 13.58	22.08	1.11	.	1	14.143	46 29.47	10.30	6.38	24 36.77	56 46.15
77	7	. .	32.	. .	. .	. .	. .	. .	26 5.16	22.07	1.14	.	1	15.953	44 35.15	10.18	6.08	26 28.37	54 51.41
78	6	. .	. .	. .	1.5	18.	. .	. .	26 1.42	22.07	1.30	.	3	25.302	34 54.92	10.18	4.70	26 24.79	45 9.80
79	8	. .	29.	45.5	2.	. .	. .	. .	30 2.04	22.06	1.74	.	4	51.267	7 36.05	9.91	0.83	30 25.84	7 46.79
80	9	. .	. .	. .	. .	26.	. .	. .	31 9.36	22.06	1.16	.	2	16.884	43 38.71	9.84	5.96	31 32.58	53 54.51
81	8	. .	. .	. .	58.	14.5	31.	. .	58.03	22.06	1.57	.	3	40.610	18 54.29	9.72	2.41	33 21.66	29 6.42
82	9	. .	. .	. .	26.	42.	. .	. .	34 25.76	22.06	1.75	.	5	51.000	7 55.56	9.62	0.87	34 49.57	18 6.05
83	9	. .	22.5	. .	55.5	. .	. .	. .	38 55.49	22.05	1.78	.	5	52.900	5 55.89	9.33	0.58	39 19.32	16 5.80
84	9	. .	37.	. .	10.5	. .	. .	. .	42 10.28	22.05	1.18	.	2	17.520	42 58.20	9.12	5.87	42 33.51	53 13.19
85	9	. .	. .	45.	. .	18.	. .	. .	45 1.50	22.05	1.35	.	3	27.348	32 46.64	8.94	4.40	45 24.90	42 59.98
86	10	. .	2.	. .	. .	. .	. .	. .	46 35.09	22.04	1.73	.	5	48.543	10 29.63	8.84	1.23	46 58.86	20 39.70
87	9	. .	35.	. .	8.	. .	. .	. .	50 7.99	22.04	1.75	.	5	49.882	9 5.36	8.62	1.03	50 31.78	19 15.01
88	10	. .	38.	. .	11.	. .	. .	. .	57 10.98	22.03	1.59	.	4	39.592	19 48.87	8.22	2.56	57 34.60	29 59.65
89	9	. .	. .	29.	. .	. .	. .	. .	58 45.65	22.03	1.79	.	5	51.210	7 42.44	8.13	0.84	59 9.47	17 51.41
90	10	. .	. .	. .	. .	37.	. .	. .	21 59 20.58	22.03	1.67	.	4	44.340	14 52.31	8.10	1.85	21 59 44.28	25 2.26
91	9	. .	53.	. .	. .	. .	. .	. .	22 6 26.09	22.02	1.45	.	3	31.888	28 1.49	7.71	3.72	22 6 49.56	38 12.92
92	10	. .	. .	39.	. .	. .	. .	. .	6 55.61	22.02	1.71	.	5	46.322	12 49.28	7.68	1.55	7 19.34	22 58.51
93	9	. .	. .	27.	. .	0.	. .	. .	7 43.60	22.02	1.69	.	5	45.119	14 4.75	7.64	1.73	8 7.31	24 14.12
94	9	. .	38.	. .	. .	. .	43.5	. .	10 10.88	22.02	1.13	.	1	12.200	48 31.94	7.50	6.69	10 34.03	58 46.13
95	9	. .	12.	28.5	45.	. .	. .	. .	13 45.06	22.02	1.18	.	2	15.283	45 18.48	7.32	6.22	14 8.26	55 32.02
96	10	. .	. .	. .	. .	. .	29.	. .	14 56.14	22.02	1.65	.	4	42.220	17 5.59	7.25	2.15	15 19.81	27 14.99
97	8	. .	. .	56.	. .	29.	45.	. .	17 12.33	22.01	1.11	.	1	11.228	49 32.33	7.14	6.84	17 35.45	59 46.31
98	10	. .	45.	. .	17.8	. .	. .	. .	21 17.88	22.01	1.44	.	3	29.836	30 10.23	6.93	4.03	21 41.33	40 21.19
99	8	. .	36.5	. .	9.	25.5	. .	. .	22 26 9.16	+22.00	+1.48	.	3	32.174	−27 43.73	− 6.68	− 3.68	22 26 32.64	−20 37 54.09

ZONE 188. AUGUST 14. S. $D_{\circ}=-19° 32' 38''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	27.	. .	0.	15.	. .	18 57 43.06	+24.73	+0.48	.	2	15.683	−39 39.95	−11.69	−11.35	18 58 8.27	−20 12 32.99
2	8	. .	12.	. .	. .	. .	. .	. .	18 59 45.03	24.73	0.49	.	2	14.278	46 21.51	11.48	12.22	19 0 10.25	19 15.21
3	7	. .	59.	. .	. .	. .	. .	. .	19 0 31.96	24.73	0.61	.	3	30.718	29 14.92	11.41	9.90	0 57.30	2 6.23
4	9	. .	. .	. .	. .	38.5	55.	. .	0 22.09	24.73	0.50	.	2	16.850	43 40.83	11.43	11.89	0 47.32	16 34.15
5	8	. .	. .	. .	. .	. .	13.5	. .	1 40.76	24.72	0.53	.	2	20.483	39 53.37	11.30	11.37	2 6.01	20 12 46.04
6	10	. .	. .	34.	50.	. .	. .	. .	3 50.22	24.72	0.76	.	4	47.835	11 11.92	11.08	7.43	4 15.70	19 44 0.43
7	8	. .	38.	54.5	11.	27.	. .	. .	6 10.83	24.71	0.63	.	3	30.420	29 33.83	10.85	9.94	6 36.17	20 2 24.62
8	10	. .	59.	. .	. .	48.	. .	. .	8 31.79	24.70	0.71	.	4	38.873	20 33.88	10.62	8.74	8 57.20	19 53 23.24
9	9	. .	13.	29.5	46.	. .	. .	. .	10 45.98	24.70	0.82	.	5	53.406	5 24.56	10.40	6.67	11 11.50	19 38 11.63
10	10	. .	23.5	40.	. .	. .	. .	. .	13 56.50	24.69	0.57	.	2	19.085	41 19.92	10.09	11.59	14 21.76	20 14 11.60
11	9	. .	37.8	54.	. .	27.	. .	. .	15 10.60	24.68	0.68	.	3	32.696	27 10.85	9.96	9.60	15 35.96	20 0 0.41
12	8	. .	. .	34.	51.	7.	23.	. .	18 50.61	24.67	0.85	.	4	53.173	5 36.97	9.61	6.66	19 16.13	19 38 23.24
13	9	. .	. .	40.5	. .	. .	. .	. .	20 57.07	24.67	0.84	.	4	50.260	8 39.88	9.40	7.10	21 22.58	41 26.38
14	8	. .	57.	13.8	30.	46.5	. .	. .	22 30.10	24.66	0.84	.	4	49.930	8 59.84	9.24	7.11	22 55.60	41 46.19
15	8	. .	24.	40.5	56.8	. .	. .	. .	19 23 56.88	+24.66	+0.76	.	4	38.895	−20 33.06	− 9.00	− 8.74	19 25 22.30	−19 53 20.80

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 14,		. .	. .	. .	. .	. .	359 59 73.01	

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 188	Aug. 14,	18 57	68 54 60.	57.0	63.4	55.7	53.3	56.0	57.57						
		19 0	. .	. .	. .	. .	. .	. .	. .	30.200	78.	74.6			
		19 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.8			
		19 58	. .	. .	. .	. .	. .	. .	. .	30.200	77.5	73.4			
		20	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.9			
		20 20	60.8	57.	63.4	55.7	52.8	56.	57.62	30.202	77.2	72.8	. .	. .	. .
		20 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.2			

REMARKS.

(187) 81. Minutes of transit assumed as 32.

(187) 83. Transit over T. IV ass'd to have been at $55^s.5$ instead of $35^s.5$.

(187) 90. Right ascension differs $16^s.1$ from Arg. Z. 255, 75; perhaps 1 thread interval in error.

(188) 1. Micrometer reading assumed as $20^r.683$, not $15^r.683$.

(188) 14. Time of transit over T. II assumed as 57^s. instead of 37^s.

(188) 15. Minutes assumed as 24, not 23, to agree with Arg. Z. 310, 165.

Extern. therm. assumed as 72°.8.

Zone 188. August 14. S. $D_0 = -19° 32' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
16	10	..	..	43.	..	..	..	..	19 26 59.54	+24.65	+0.54	.	1	10.146	−50 40.09	− 8.80	−12.87	19 27 24.73	−20 23 31.76
17	9	..	15.	32.	48.5	..	..	..	30 48.35	24.64	0.57	.	1	12.346	48 22.23	8.43	12.55	31 13.56	21 13.21
18	5	..	38.8	55.	11.8	28.	44.	..	37 11.55	24.62	0.70	.	3	25.982	34 12.07	7.81	10.57	37 36.87	7 0.45
19	10	..	..	..	..	..	28.	..	37 55.25	24.62	0.64	.	2	18.775	41 40.23	7.74	1.64	38 20.51	14 29.61
20	10	..	8.	..	41.	..	14.	..	42 41.05	24.61	0.73	IV.	3	28.480	31 35.49	7.29	10.20	43 6.39	20 4 22.98
21	7	..	41.5	58.	14.	30.5	..	..	46 14.28	24.60	0.93	.	5	51.789	8 8.71	6.95	7.00	46 39.81	19 40 52.66
22	9	..	34.6	51.2	..	24.	..	..	50 7.60	24.59	0.80	V.	3	32.552	27 19.83	6.58	9.62	50 32.99	20 0 6.03
23	8	..	..	..	21.	37.5	44.	..	51 21.04	24.58	0.68	.	2	17.540	42 57.58	6.47	11.78	51 46.30	20 15 45.83
24	7	..	33.	49.	5.5	..	39.	..	57 5.78	24.57	0.86	.	4	37.497	22 1.43	5.92	8.91	57 31.21	19 54 46.26
25	9	..	..	..	..	29.	..	..	19 58 12.58	24.57	0.82	.	3	32.680	27 11.73	5.82	9.60	19 58 37.97	59 57.15
26	8	..	..	2.	18.3	34.5	..	..	20 1 18.28	24.56	0.91	.	4	42.098	16 9.86	5.52	8.24	20 1 43.75	48 53.62
27	9	..	4.	21.	37.	53.5	..	..	5 37.16	24.55	1.00	.	5	52.148	6 43.61	5.14	6.79	6 2.71	39 25.54
28	10	..	42.	58.	15.	31.5	..	..	8 14.89	24.55	0.98	.	4	47.509	11 33.02	4.89	7.46	8 40.42	19 44 15.37
29	9	..	53.8	10.	26.5	..	..	..	11 26.61	24.54	0.70	.	1	10.990	49 46.43	4.60	12.77	11 51.85	20 22 33.80
30	6.7	..	..	..	22.	38.5	55.	..	11 22.06	24.54	0.81	IV.	3	25.128	34 2.98	4.60	10.56	11 47.41	6 47.94
31	10	..	..	..	20.8	..	53.5	..	13 20.74	24.53	0.75	.	2	18.076	42 23.90	4.42	11.72	13 46.02	20 15 10.04
32	7	..	26.8	43.	59.8	16.	..	..	15 59.63	24.52	0.92	.	3	37.468	22 11.65	4.18	8.90	16 25.07	19 54 54.73
33	9	..	25.5	42.	..	..	..	..	17 58.45	24.52	0.87	.	3	30.724	29 14.57	4.00	9.89	18 23.84	20 1 58.46
34	9	..	..	51.3	..	..	..	..	25 7.83	24.50	1.00	.	4	44.182	15 1.33	3.35	7.92	25 33.33	19 47 42.60
35	8	..	..	..	..	41.	57.5	..	25 24.70	24.50	0.95	.	3	38.026	21 36.26	3.32	8.82	25 50.15	19 54 18.40
36	10	..	46.	..	..	..	..	..	28 19.04	24.49	0.75	.	1	11.503	49 14.39	3.05	12.70	28 44.28	20 22 0.14
37	8	..	..	57.5	14.	30.5	..	..	31 14.02	24.49	1.02	.	4	43.842	15 23.00	2.79	7.98	31 39.53	19 48 3.77
38	10	..	23.	..	56.	..	..	..	33 55.91	24.48	0.93	.	3	31.470	28 27.96	2.55	9.78	34 21.32	20 1 10.29
39	8	..	..	38.	54.3	11.	27.	..	34 54.40	24.48	1.00	.	4	39.472	19 56.98	2.46	8.60	35 19.88	19 52 38.04
40	8	..	4.5	..	37.5	54.	..	..	37 37.47	24.47	0.96	.	3	33.670	26 9.80	2.22	9.45	38 2.90	58 51.47
41	8	..	..	57.	13.5	30.	..	..	39 13.52	24.47	1.04	.	4	43.499	15 44.73	2.07	8.03	39 39.03	19 48 24.83
42	7.8	..	43.	..	..	..	..	..	20 43 16.02	+24.46	+0.84	.	2	15.940	−39 23.39	− 1.71	−11.30	20 43 41.32	−20 12 6.40

Zone 189. August 15. C. $D_0 = -18° 55' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	..	..	..	18.6	..	51.2	..	18 0 18.55	+28.32	. .	VI.	3	32.800	−27 3.88	−10.37	− 7.61	. . .	−19 22 31.86
2	9	..	..	44.9	1.	17.8	..	..	2 1.19	28.32	. .	IV.	3	27.742	32 21.66	10.19	8.32	. . .	27 50.17
3	8	..	..	40.2	56.2	13.4	29.6	..	2 56.68	28.32	. .	IV.	3	27.876	32 13.20	10.10	8.30	. . .	27 41.60
4	10	..	..	..	17.2	..	..	..	5 17.09	28.31	. .	IV.	5	48.840	10 11.15	9.86	5.38	. . .	5 36.39
5	8	..	..	..	59.5	..	..	..	5 59.39	28.30	. .	IV.	5	52.343	6 31.42	9.78	4.90	. . .	1 56.10
6	8	..	..	..	..	27.2	..	..	6 10.99	28.30	. .	V.	5	56.199	2 29.24	9.76	4.36	. . .	57 53.36
7	8.9	..	9.	25.5	..	..	14.5	..	7 41.91	28.29	. .	IV.	5	53.376	5 26.56	9.61	4.75	. . .	0 50.92
8	8.9	..	..	..	..	..	15.5	..	7 42.88	28.29	. .	VI.	5	47.188	11 54.93	9.61	5.60	. . .	7 20.14
9	9	..	9.6	26.5	42.3	..	..	..	11 42.57	28.28	. .	III.	2	12.132	47 33.63	9.20	10.30	. . .	43 3.13
10	9	..	..	..	..	24.2	40.5	..	12 7.90	28.28	. .	VI.	3	35.242	24 30.84	9.16	7.27	. . .	19 57.27
11	8.9	..	13.1	29.3	45.9	..	18.6	..	14 45.86	28.27	. .	III.	3	27.645	32 27.81	8.89	8.33	. . .	27 55.03
12	8.9	..	..	..	..	7.5	24.6	..	14 51.48	28.27	. .	V.	2	17.078	43 26.67	8.87	9.81	. . .	38 55.35
13	9	..	..	39.2	55.3	..	28.	..	17 55.42	28.26	. .	IV.	5	52.002	6 52.66	8.57	4.94	. . .	19 2 16.17
14	8	..	..	48.	4.6	..	..	..	22 4.52	28.24	. .	III.	5	54.212	4 33.95	8.14	4.63	. . .	18 59 56.72
15	9	..	..	..	..	23.2	..	..	22 6.89	28.24	. .	V.	3	39.588	19 58.30	8.14	6.66	. . .	19 15 23.10
16	8.9	..	..	..	..	53.	9.2	..	22 36.65	28.24	. .	V.	3	41.382	18 5.77	8.09	6.42	. . .	13 30.28
17	8.9	..	..	..	56.2	13.	..	..	22 56.39	28.24	. .	V.	3	41.382	18 5.77	8.06	6.42	. . .	13 30.25
18	8	..	..	..	..	..	45.	..	18 23 12.37	+28.24	. .	VI.	4	49.880	− 9 4.61	− 8.02	− 5.23	. . .	−19 4 27.86

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 15,		. .	. .	. .	. .	. .	359 59 73.83	30.1597

INSTRUMENT READINGS.

	Date.		Circle. A.		B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 189	Aug. 15,	18 0	68 17	35.7 35.7	30.1 29.9	35.5 36.4	30. 31.8	26.4 27.0	29.4 30.6	31.54	30.166	80.	76.5	78.8	78.5	77.8
		18 20		. .	. .	. .	. .	. .	. .	. .	. .	. .	75.3			
		18 44		. .	. .	. .	. .	. .	. .	. .	. .	. .	74.8			
		19 0		. .	. .	. .	. .	. .	. .	. .	. .	. .	74.3			
		19 10		34.9 35.2	29.9 29.9	36.3 36.5	29.9 30.9	26.1 26.5	29.2 30.4	31.31	30.170	78.2	74.3	77.8	77.5	77.8

REMARKS.

(188) 21. Micrometer reading assumed as $50^r.789$, not $51^r.789$.

(188) 23. Time of transit over T. VI assumed as 54^s, instead of 44^s.

(188) 26. Micrometer reading assumed as $43^r.098$ instead of $42^r.098$.

(188) 30. Micrometer reading assumed as $26^r.128$, not $25^r.128$.

(188) 42. Micrometer reading assumed as $20^r.940$, not $15^r.940$.

(189) 9. Micrometer reading assumed as $13^r.132$, not $12^r.132$.

ZONE 189. AUGUST 15. C. $D_0 = -18° 55' 10''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	8.9	. .	33.7	49.2	. .	. .	39.	. .	18 26 6.18	+28.23	. .	IV.	3	32.476	−27 24.78	− 7.73	− 7.65	. . .	−19 22 50.16
20	9.10	. .	. .	56.3	12.6	. .	45.	. .	26 12.53	28.23	. .	VI.	3	25.461	34 44.50	7.72	8.64	. . .	30 10.86
21	8.9	. .	. .	. .	41.8	. .	14.6	. .	27 41.84	28.22	. .	VI.	4	39.356	20 5.38	7.57	6.69	. . .	15 29.64
22	8.9	. .	. .	. .	. .	36.2	. .	. .	28 19.86	28.22	. .	V.	4	35.345	24 16.84	7.50	7.26	. . .	19 41.60
23	9	. .	. .	20.5	36.3	. .	. .	. .	29 36.56	28.22	. .	III.	4	40.942	18 24.60	7.37	6.48	. . .	13 48.45
24	10	. .	. .	. .	55.7	. .	28.5	. .	31 55.75	28.21	. .	VI.	2	20.016	40 22.47	7.14	9.40	. . .	35 49.01
25	6	. .	. .	22.	38.1	55.	. .	. .	33 38.32	28.20	. .	IV.	3	30.063	29 56.11	6.96	7.99	. . .	25 21.06
26	7	. .	19.	35.7	52.	. .	. .	. .	34 51.92	28.20	. .	III.	3	27.763	32 20.35	6.84	8.32	. . .	27 45.51
27	9	. .	. .	. .	25.2	. .	. .	. .	35 25.07	28.20	. .	IV.	3	27.281	32 50.77	6.78	8.38	. . .	28 15.93
28	7	. .	10.5	27.3	43.2	59.5	. .	. .	36 43.32	28.19	. .	IV.	2	10.738	50 4.00	6.65	10.71	. . .	45 31.36
29	9.10	. .	. .	. .	43.2	. .	. .	. .	? 43.08	. .	. .	VII.	4	40.799	18 34.76	6.55	6.50	. . .	13 57.81
30	8	. .	24.2	. .	57.	. .	29.6	. .	38 56.98	28.19	. .	IV.	3	33.782	26 2.64	6.42	7.47	. . .	21 26.53
31	9	. .	. .	3.8	. .	. .	. .	. .	40 20.31	28.18	. .	III.	5	50.013	8 57.46	6.28	5.22	. . .	4 18.96
32	8	. .	. .	. .	. .	35.5	52.	. .	40 19.30	28.18	. .	V.	3	36.732	22 57.39	6.28	7.06	. . .	18 20.73
33	9	. .	. .	. .	. .	. .	33.5	. .	40 0.91	28.18	. .	VI.	4	40.300	19 6.14	6.31	6.57	. . .	14 29.02
34	9	. .	. .	. .	. .	. .	23.	. .	41 50.34	28.18	. .	VI.	2	9.221	51 39.53	6.13	10.93	. . .	47 6.59
35	9	. .	. .	. .	41.5	56.7	. .	. .	43 40.87	28.17	. .	V.	3	37.367	22 17.75	5.93	6.97	. . .	17 40.65
36	9.10	. .	. .	. .	3.2	. .	36.2	. .	46 3.34	28.16	. .	VI.	4	44.853	14 20.18	5.69	5.94	. . .	9 41.81
37	7.8	. .	47.5	3.8	19.3	36.3	52.5	. .	48 19.92	28.15	. .	IV.	3	34.447	25 21.16	5.46	7.38	. . .	20 44.00
38	7.8	. .	35.1	51.6	7.6	24.2	40.6	. .	50 7.85	28.14	. .	IV.	3	26.922	33 13.04	5.27	8.43	. . .	28 36.74
39	9.10	. .	. .	. .	. .	1.5	. .	. .	50 45.08	28.14	. .	V.	3	25.353	34 51.53	5.21	8.65	. . .	30 15.39
40	9	. .	. .	. .	. .	5.	. .	. .	51 48.55	28.14	. .	V.	2	22.503	37 46.52	5.10	9.05	. . .	33 10.67
41	7	. .	15.7	32.	. .	5.	20.2	. .	53 48.30	28.13	. .	IV.	3	28.057	32 1.97	4.89	8.27	. . .	27 25.13
42	7	. .	19.2	35.5	. .	8.2	24.7	. .	53 51.98	28.13	. .	IV.	3	36.212	23 30.34	4.88	7.13	. . .	18 52.35
43	9.10	. .	9.	25.2	41.5	. .	. .	. .	56 41.69	28.12	. .	III.	2	8.862	46 47.60	4.59	10.27	. . .	19 42 12.46
44	6	. .	22.3	38.3	55.	11.	27.1	. .	57 54.82	28.12	. .	IV.	5	56.196	2 29.43	4.46	4.36	. . .	18 57 48.25
45	8	. .	. .	13.3	29.5	46.	2.3	. .	18 59 29.64	28.11	. .	IV.	4	43.512	15 43.94	4.30	6.12	. . .	18 11 4.36
46	9	. .	. .	14.	30.3	. .	. .	. .	19 2 30.26	28.11	. .	III.	3	29.466	30 33.75	3.98	8.09	. . .	19 25 55.82
47	8.9	. .	57.8	14.5	30.5	47.5	. .	. .	4 30.74	28.10	. .	IV.	3	26.947	33 11.47	3.77	8.44	. . .	28 33.68
48	9.10	. .	. .	. .	. .	27.	. .	. .	4 46.44	28.09	. .	V.	5	48.224	10 49.97	3.74	5.45	. . .	6 9.16
49	9	. .	. .	. .	. .	47.2	3.5	. .	5 30.90	28.09	. .	V.	4	40.981	18 22.97	3.66	6.46	. . .	13 43.09
50	7	. .	52.5	8.3	25.	41.5	57.2	. .	8 24.95	28.08	. .	IV.	4	41.742	17 34.82	3.35	6.36	. . .	12 54.53
51	8.9	. .	. .	. .	. .	. .	30.	. .	19 8 57.38	+28.08	. .	VI.	5	46.787	−12 19.92	− 3.29	− 5.64	. . .	−19 7 38.85

ZONE 190. AUGUST 16. S. $D_0 = -24° 33' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	6.	. .	. .	. .	17 44 49.08	+25.97	+0.39	.	5	48.208	−10 50.97	− 9.69	− 7.04	17 44 15.44	−24 44 7.70
2	7	. .	. .	57.	14.	31.	. .	. .	45 14.00	25.97	0.32	IV.	4	41.502	17 50.08	9.58	8.13	45 40.29	24 51 7.79
3	10	. .	. .	. .	40.5	. .	. .	. .	46 40.41	25.96	0.14	.	2	19.822	40 34.27	9.47	11.69	47 6.51	25 13 55.43
4	9	. .	. .	37.	. .	10.	. .	. .	47 53.50	25.96	0.23	III.	3	29.914	30 5.45	9.36	10.00	48 19.69	3 24.81
5	9	. .	39.	. .	. .	. .	. .	. .	50 13.21	25.95	0.19	.	3	24.854	35 22.96	9.15	10.84	50 39.35	8 42.95
6	8	. .	. .	. .	19.	36.	53.	. .	50 18.98	25.95	0.23	IV.	3	29.182	30 51.45	9.15	10.12	50 45.16	25 4 10.72
7	10	. .	. .	. .	. .	. .	45.	. .	51 11.06	25.95	0.38	.	4	45.972	13 9.69	9.07	7.39	51 37.39	24 46 26.15
8	9	. .	. .	. .	. .	56.	. .	. .	52 39.07	25.94	0.39	.	4	45.945	13 11.26	8.95	7.40	53 5.40	46 27.61
9	8	. .	44.8	2.	18.5	. .	. .	. .	55 18.84	25.93	0.44	IV.	5	51.228	7 41.37	8.72	6.51	55 45.21	24 40 56.60
10	9	. .	12.	. .	46.	. .	. .	. .	57 46.04	25.92	0.22	IV.	3	26.575	33 35.00	8.51	10.57	58 12.18	25 6 54.08
11	10	. .	. .	. .	. .	42.	59.5	. .	17 58 25.12	25.92	0.09	V.	2	12.319	48 25.17	8.45	12.92	17 58 51.13	21 46.54
12	11	. .	. .	58.	. .	. .	. .	. .	18 0 15.13	+25.91	+0.12	.	2	15.575	−45 0.62	− 8.29	−12.39	18 0 41.16	−25 18 21.30

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 16,	. .	. .	. .	. .	. .	359 59 60.10	30.0100

REMARKS.

(189) 43. Micrometer reading assumed as 13r.862, not 8r.862.
(189) 48. Seconds of transit 10.74 or 46.44.
(190) 1. Transit over T. V assumed as recorded over T. VI, and minutes as 43, not 44.

[(189) 29. Same A. R. nearly as 28.]

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848, h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 190	Aug. 16, 17 40	73.54 60.	56.8	60.5	55.8	48.6	54.2	55.98	30.076	80.9	78.5			
	18 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	77.2			
	18 20	. .	. .	. .	. .	. .	. .	. .	30.080	. .	76.5			
	18 40	. .	. .	. .	. .	. .	. .	. .	30.086	80.	75.9	78.	79.0	79.4
	19 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.3			
	19 20	60.4	56.8	62.8	55.8	49.8	53.9	56.58	30.080	79.7	75.2			
Zone 191	Aug. 16, 20 40	75 9 60.	56.2	61.5	54.8	49.0	53.5	55.83	30.078	79.2	73.9	78.5	78.0	78.5
	21 20	. .	. .	. .	. .	. .	. .	. .	30.078	78.8	73.5			
	21 40	60.	56.2	61.5	55.0	49.	53.2	55.82	30.072	78.5	73.1			

ZONE 190. AUGUST 16. S. $D_0 = -24° 33' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	8.9	. .	7.	24.	. .	. .	. .	. .	18 3 41.15	+25.90	+0.18	III.	2	22.643	−37 37.26	− 7.99	−11.22	18 4 7.23	−25 10 56.47
14	11	. .	23.	. .	. .	. .	. .	. .	4 57.15	25.90	0.40	.	4	47.166	11 53.67	7.88	7.19	5 23.45	24 45 8.74
15	10	. .	36.5	. .	. .	. .	. .	. .	7 10.67	25.89	0.26	.	3	30.302	29 41.36	7.68	9.95	7 36.82	25 2 58.99
16	10	. .	. .	. .	. .	. .	36.	. .	7 2.07	25.89	0.20	.	3	23.748	36 31.58	7.70	11.03	7 28.16	9 50.31
17	10	. .	47.	. .	. .	. .	. .	. .	9 21.29	25.88	0.09	.	2	11.442	49 19.46	7.51	13.08	9 47.26	22 40.05
18	11	. .	. .	. .	29.5	. .	. .	. .	10 29.36	25.88	0.29	.	3	33.113	26 44.75	7.40	9.50	10 55.53	25 0 1.65
19	6.7	. .	17.	34.	51.	. .	. .	. .	11 51.04	25.87	0.30	IV.	3	34.457	25 20.53	7.29	9.29	12 17.21	24 58 37.11
20	11	. .	. .	3.5	. .	37.	. .	. .	14 20.33	25.86	0.38	.	4	42.080	17 13.36	7.08	8.01	14 46.57	50 28.45
21	8	. .	52.	. .	26.	. .	. .	. .	18 26.02	25.85	0.48	IV.	5	53.160	5 40.06	6.72	6.22	18 52.35	24 38 53.10
22	8	. .	. .	. .	16.	. .	. .	. .	19 15.88	25.84	0.23	.	3	25.670	34 31.71	6.65	10.72	19 41.95	25 7 49.08
23	6.7	. .	. .	. .	. .	58.	15.	. .	19 40.88	25.84	0.12	V.	2	13.175	47 31.36	6.62	12.78	20 6.84	25 20 50.76
24	7	. .	. .	. .	. .	39.	56.	. .	21 22.05	25.84	0.32	.	3	33.800	26 1.27	6.47	9.39	21 48.21	24 59 17.13
25	.	. .	. .	56.	. .	. .	. .	. .	23 13.09	25.83	0.21	.	2	22.078	38 12.70	6.30	11.31	23 39.13	25 11 30.31
26	9	. .	. .	. .	. .	58.	. .	. .	23 24.00	25.83	0.16	.	2	16.718	43 49.12	6.27	12.20	23 49.91	25 17 7.59
27	10	. .	16.	. .	. .	. .	. .	. .	26 50.16	25.82	0.32	.	3	34.243	25 34.09	6.00	9.33	27 16.30	24 58 49.42
28	10	. .	. .	. .	. .	. .	43.	. .	27 9.09	25.82	0.34	.	3	36.842	22 50.00	5.97	8.89	27 35.24	56 4.86
29	10	. .	. .	. .	. .	. .	51.	. .	29 17.07	25.81	0.40	.	4	42.570	16 43.42	5.79	7.95	29 43.28	24 49 57.16
30	10	. .	. .	. .	7.	. .	. .	. .	31 6.88	25.80	0.24	.	3	24.882	35 21.01	5.63	10.85	31 32.92	25 8 37.49
31	8	. .	. .	. .	57.	14.	31.	. .	31 56.96	25.80	0.26	V.	3	26.093	34 4.92	5.56	10.66	32 23.02	7 21.14
32	9.8	. .	. .	. .	14.	31.	. .	. .	33 13.89	25.79	0.23	.	4	23.	. . .	5.45	. .	33 39.91	
33	6.7	. .	36.	53.	10.	. .	. .	. .	35 10.06	25.79	0.24	IV.	4	24.070	36 3.72	5.28	10.97	35 36.09	9 19.97
34	10	. .	. .	57.	. .	. .	. .	. .	37 14.05	25.78	0.29	.	5	29.058	30 52.64	5.10	10.14	37 40.12	25 4 7.88
35	8	. .	. .	14.8	. .	48.5	. .	. .	38 31.70	25.77	0.35	.	4	36.965	22 34.25	5.00	8.86	38 57.82	24 55 48.11
36	9	. .	0.	17.	. .	. .	. .	. .	40 34.14	25.77	0.43	.	5	44.159	15 4.94	4.83	7.7c	41 0.34	48 17.47
37	8	. .	40.	. .	14.	. .	. .	. .	42 14.02	25.76	0.42	IV.	5	42.979	16 19.07	4.68	7.88	42 40.20	49 31.63
38	10	. .	. .	28.	. .	. .	. .	. .	43 45.15	25.76	0.45	.	5	46.778	12 20.55	4.56	7.26	44 11.36	45 32.37
39	8	. .	. .	28.5	. .	. .	. .	. .	44 45.59	25.75	0.36	.	3	36.018	23 42.52	4.47	9.02	45 11.70	56 56.01
40	10	. .	. .	. .	. .	. .	28.	. .	44 54.08	25.75	0.39	.	3	39.298	20 16.12	4.46	8.49	45 20.22	53 29.07
41	7	. .	31.6	49.	6.	. .	. .	. .	47 5.92	25.74	0.44	IV.	4	43.882	15 20.50	4.27	7.74	47 32.10	24 48 32.51
42	8	. .	8.5	25.	42.	. .	. .	. .	48 42.20	25.74	0.31	IV.	3	29.042	31 0.10	4.13	10.15	49 8.25	25 4 14.38
43	7	. .	12.5	29.5	46.5	. .	20.5	. .	50 46.56	25.73	0.26	IV.	3	24.754	35 29.10	3.96	10.86	51 12.55	8 43.92
44	6.7	. .	16.8	34.	51.	7.5	. .	. .	52 50.84	25.72	0.31	IV.	3	30.322	29 39.99	3.79	9.95	53 16.87	25 2 53.73
45	10	. .	. .	49.5	. .	. .	. .	. .	54 6.64	25.72	0.45	.	5	45.570	13 36.52	3.67	7.45	54 32.81	24 46 47.64
46	9	. .	. .	6.5	. .	. .	. .	. .	55 23.61	25.71	0.40	.	4	39.328	19 53.58	3.57	8.49	55 49.72	53 5.64
47	8	. .	. .	. .	1.	18.	. .	. .	56 0.94	25.71	0.39	IV.	4	38.952	20 29.93	3.51	8.55	56 27.04	53 41.99
48	9	. .	5.	. .	. .	. .	. .	. .	57 39.15	25.70	0.47	.	5	47.289	11 48.53	3.38	7.18	58 5.32	44 59.09
49	8	. .	4.8	. .	38.	. .	. .	. .	58 38.42	25.70	0.41	IV.	4	39.440	19 59.49	3.29	8.47	59 4.53	24 53 11.25
50	8	. .	. .	. .	. .	26.5	43.5	. .	18 59 9.40	25.70	0.19	V.	2	15.202	45 24.31	3.24	12.46	18 59 35.29	25 18 40.01
51	9	. .	36.	. .	. .	27.	. .	. .	19 3 10.12	25.69	0.48	II.	5	48.288	10 45.83	2.91	7.00	19 3 36.29	24 43 55.74
52	8.9	. .	53.5	10.5	27.	44.	. .	. .	6 27.27	25.68	0.36	.	3	34.	26	2.64	. .	6 53.31	
53	10	. .	51.	. .	. .	. .	. .	. .	8 25.28	25.67	0.19	.	2	13.779	46 52.74	2.47	12.70	8 51.14	25 20 7.91
54	9	. .	9.	26.	43.	. .	. .	. .	10 43.04	25.66	0.41	IV.	4	38.518	20 57.36	2.27	8.62	11 9.11	24 54 8.25
55	9	. .	45.	. .	. .	. .	. .	. .	12 19.15	25.65	0.51	.	5	50.120	8 50.74	2.14	6.69	12 45.31	41 59.57
56	7	. .	8.5	25.	42.	. .	. .	. .	19 15 42.22	+25.64	+0.47	IV.	4	44.635	−14 33.40	− 1.86	− 7.62	19 16 8.33	−24 47 42.88

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point,	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE.							Barom.	THERMOM.				
		A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(190) 14. Declination differs 9′ from Arg. Z. 220, 98.

(190) 26. Transit over T. VI assumed as recorded over T. V.

(190) 46. Micrometer reading assumed as $39^{r}.528$ instead of $39^{r}.328$.

ZONE 191. AUGUST 16. S. $D_0 = -25° 47' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	51.	. .	. .	. .	20 41 50.87	+23.41	+1.09	.	4	39.253	−20 11.22	− 9.73	− 8.36	20 42 15.37	−26 8 19.31
2	8	. .	13.	30.	47.	. .	. .	. .	44? 47.23	23.40	. .	.	4	39.220	12 12.41	9.26	8.36	48	0 20.03
3	10	. .	. .	9.	. .	43.	. .	. .	49 25.96	23.39	2.14	.	2	13.893	46 45.90	9.14	12.83	49 51.49	34 57.87
4	11	. .	37.	. .	. .	. .	. .	. .	55 11.53	23.37	1.29	.	4	37.583	21 55.07	8.70	8.66	55 36.19	10 2.43
5	9	. .	3.8	21.5	38.3	. .	. .	. .	20 57 38.42	23.36	1.31	.	4	38.011	21 28.17	8.52	8.58	20 58 3.09	9 35.27
6	10	. .	12.	. .	46.	. .	. .	. .	21 0 46.31	23.36	2.41	.	2	9.603	51 14.70	8.28	13.63	21 1 12.08	39 26.61
7	10	. .	. .	. .	. .	24.	. .	. .	2 6.74	23.35	1.82	.	3	26.436	33 43.52	8.18	10.64	2 31.91	21 52.34
8	9	. .	57.5	14.5	32.	. .	. .	. .	5 31.95	23.34	2.22	IV.	2	16.990	43 31.94	8.92	12.30	5 57.51	31 43.16
9	10	. .	32.	. .	6.	. .	. .	. .	9 6.20	23.33	1.84	.	3	28.098	31 59.52	7.66	10.34	9 31.37	20 7.52
10	9	. .	30.5	47.5	5.	. .	. .	. .	15 4.88	23.32	1.61	.	3	35.832	23 54.01	7.23	8.97	15 29.81	12 0.21
11	8	. .	58.5	. .	. .	. .	. .	. .	19 33.04	23.31	1.86	.	3	30.432	29 33.21	6.91	9.93	19 58.21	17 40.05
12	8	. .	2.5	19.9	36.5	. .	. .	. .	21 36.72	23.30	2.05	.	3	26.405	33 45.72	6.77	10.64	22 2.07	21 53.13
13	7.8	. .	10.	27.	44.	. .	. .	. .	22 44.24	23.30	1.43	.	5	43.168	16 7.13	6.71	7.66	23 8.97	26 4 11.50
14	9	. .	37.	54.	11.5	. .	. .	. .	26 11.41	23.29	1.28	.	4	48.067	10 57.05	6.46	6.81	26 35.98	25 59 0.32
15	10	. .	. .	. .	25.	. .	. .	. .	27 24.94	23.29	2.57	.	2	13.640	41 48.38	6.39	12.02	27 50.80	26 29 56.79
16	8	. .	. .	48.8	. .	23.	. .	. .	29 5.97	23.28	1.60	.	4	40.458	18 55.60	6.27	8.15	29 30.85	26 7 0.02
17	9	. .	. .	17.	34.	51.	. .	. .	30 54.07	23.28	1.13	.	5	53.080	5 44.96	6.17	5.93	31 18.48	25 53 47.06
18	9	. .	. .	. .	56.5	. .	. .	. .	31 56.42	23.28	2.50	.	2	17.262	43 15.07	6.08	12.26	32 22.20	26 31 23.41
19	9	. .	. .	43.	0.	. .	. .	. .	33 0.11	23.27	2.55	.	2	16.330	44 13.33	6.01	12.43	33 25.93	32 21.77
20	9	. .	22.	. .	. .	. .	. .	. .	37 56.55	23.27	2.13	.	3	28.860	31 11.59	5.70	10.20	38 21.95	19 17.49
21	10	. .	. .	. .	33.	. .	. .	. .	38 32.94	23.26	2.73	.	2	12.815	47 53.70	5.66	13.06	38 58.93	36 2.42
22	8	. .	. .	. .	. .	24.8	41.5	. .	39 7.27	23.26	2.68	.	2	14.560	46 4.59	5.62	12.74	39 33.21	34 12.95
23	10	. .	. .	. .	. .	. .	18.	. .	40 43.74	23.26	2.19	.	3	27.920	32 9.86	5.52	10.37	41 9.19	20 15.75
24	10	. .	49.5	. .	. .	. .	. .	. .	21 43 24.02	+23.25	+1.65	.	5	43.043	−16 14.90	− 5.36	− 7.69	21 43 48.92	−26 4 17.95

ZONE 192. AUGUST 18. P. $D_0 = -22° 40' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	11	. .	. .	6.	. .	40.	. .	. .	19 7 22.95	+27.35	. .	.	2	12.420	−48 17.35	−22.18	−12.75	. . .	−23 28 52.28
2	11	. .	. .	. .	. .	9.	. .	. .	8 52.02	27.35	. .	.	2	13.510	47 9.14	22.04	12.57	. . .	27 43.75
3	10	. .	. .	. .	. .	31.	. .	. .	11 14.11	27.34	. .	.	3	21.270	39 7.58	21.82	11.36	. . .	19 40.76
4	10	. .	2.5	. .	. .	. .	. .	. .	14 36.23	27.32	. .	.	2	20.110	40 14.50	21.51	11.54	. . .	20 47.55
5	9	. .	. .	50.	. .	. .	. .	. .	15 6.89	27.32	. .	.	2	13.650	46 59.88	21.46	12.55	. . .	27 33.89
6	9	. .	. .	. .	38.5	55.5	12.	. .	15 38.52	27.32	. .	IV.	3	20.245	40 12.05	21.41	11.52	. . .	20 44.98
7	8	. .	. .	20.	37.	54.	. .	. .	18 36.96	27.31	. .	IV.	3	30.158	29 50.22	21.14	9.98	. . .	10 21.34
8	8	. .	41.5	58.	. .	32.	. .	. .	22 15.06	27.30	. .	.	2	11.559	49 10.82	20.80	12.88	. . .	29 44.50
9	9	. .	. .	. .	59.5	16.	33.	. .	22 59.40	27.29	. .	.	4	36.819	22 43.02	20.73	8.93	. . .	3 12.68
10	10	. .	. .	47.	4.	. .	. .	. .	27 3.84	27.27	. .	.	3	31.840	28 4.50	20.36	9.71	. . .	8 34.57
11	9	. .	47.5	4.	20.5	. .	. .	. .	30 20.79	27.26	. .	.	3	36.252	23 27.83	20.05	9.02	. . .	3 56.90
12	10	. .	. .	43.	. .	17.	. .	. .	30 0.04	27.26	. .	.	3	36.548	23 9.39	20.08	8.98	. . .	3 38.45
13	8.9	. .	35.9	. .	9.	. .	. .	. .	35 9.03	27.24	. .	.	3	28.043	32 2.78	19.62	10.30	. . .	23 12 32.70
14	10.9	. .	. .	. .	. .	36.	52.5	. .	35 19.18	27.24	. .	.	5	45.710	13 26.20	19.60	7.56	. . .	22 53 53.36
15	10	. .	33.	. .	6.	23.	. .	. .	38 6.25	27.23	. .	.	3	30.078	29 55.17	19.35	9.99	. . .	23 10 24.51
16	9	. .	. .	37.	54.	10.5	. .	. .	40 53.80	27.22	. .	.	3	31.278	28 40.00	19.11	9.80	. . .	9 8.91
17	8	. .	54.	3.	27.5	. .	. .	. .	43 27.62	27.21	. .	.	2	9.178	51 40.09	18.88	13.25	. . .	32 12.22
18	10	. .	44.5	. .	18.	. .	. .	. .	47 18.02	27.20	. .	.	3	33.913	25 54.42	18.54	9.38	. . .	6 22.34
19	11	. .	. .	. .	19.5	. .	. .	. .	48 19.40	27.20	. .	.	3	21.018	39 23.45	18.45	11.40	. . .	19 53.30
20	9.8	. .	54.5	11.	. .	. .	. .	. .	51 28.00	27.19	. .	.	3	32.492	27 23.95	18.17	9.60	. . .	7 51.72
21	6.7	. .	. .	47.	3.2	20.	. .	. .	19 52 3.36	+27.18	. .	V.	3	31.652	−28 16.16	−18.12	− 9.74	. . .	−23 8 44.02

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 18,	. .	. .	. .	. .	. .	359 59 61.75	30.0058

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 192	Aug. 18, 19 0	72 2 {30. / 31.	26. / 25.5	28.8 / 29.3	22.8 / 24.2	21. / 21.8	25. / 25.	}25.86	29.924	77.8	70.2	79.2	78.5	78.
	19 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.9	79.	73.4	75.5
	19 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.2			
	20 0	. .	. .	. .	. .	. .	. .	. .	29.930	76.	68.8			
	20 40	. .	. .	. .	. .	. .	. .	. .	29.932	75.5	67.7			
	21 40	. .	. .	. .	. .	. .	. .	. .	29.924	74.8	67.			
	21 50	{30. / 31.	27. / 27.	30. / 30.2	23.2 / 24.0	22.2 / 22.8	24.8 / 24.0	}26.35						

REMARKS.

(191) 1. Right ascension differs 2ˢ.5 from Arg. Z. 251, 19; wrong.

(191) 15. Micrometer reading assumed as 18ʳ.640, not 13ʳ.640.

(191) 17. Transits over T.'s III, IV, and V assumed as 37ˢ, 54ˢ, and 11ˢ, to agree with Arg. Z. 242, 721, and 251, 74; and Mur. October 14, 1848.

(192) 20. Declination differs 5′ 19″ from Arg. Z. 311, 35; micrometer probably 5ʳ in error.

ZONE 192. AUGUST 18. P. $D_o = -22° 40' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	8	. .	51.5	. .	25.5	. .	. .	. .	19 55 25.28	−27.17	. .	.	4	39.146	−20 17.12	−17.82	− 8.56	. . .	−23 0 43.50
23	10	. .	. .	46.	. .	. .	. .	. .	56 2.85	27.17	. .	.	4	36.770	22 45.85	17.77	8.94	. . .	3 12.56
24	11	. .	57.	. .	31.	. .	. .	. .	19 59 30.77	27.16	. .	.	3	32.830	27 2.56	17.47	9.55	. . .	7 29.58
25	9	. .	. .	18.	. .	52.	. .	. .	20 3 34.96	27.15	. .	III.	2	15.360	45 12.84	17.12	12.30	. . .	25 42.26
26	11	. .	. .	. .	. .	. .	31.	. .	4 57.55	27.14	. .	.	3	21.155	39 14.36	17.01	11.39	. . .	19 42.76
27	10	. .	45.	. .	18.8	. .	. .	. .	10 18.67	27.12	. .	.	3	28.759	31 17.86	16.55	10.19	. . .	11 44.60
28	11	. .	. .	. .	8.	. .	. .	. .	12 7.88	27.11	. .	.	2	25.338	34 47.19	16.39	10.73	. . .	23 15 14.31
29	10	. .	. .	. .	. .	39.5	56.	. .	14 22.68	27.11	. .	V.	4	50.218	8 42.33	16.22	6.84	. . .	22 49 3.39
30	11	. .	. .	. .	23.	. .	. .	. .	16 22.87	27.10	. .	.	3	36.768	22 55.32	16.05	8.96	. . .	23 3 20.33
31	10	. .	. .	. .	46.	. .	. .	. .	17 45.87	27.09	. .	.	3	37.502	22 9.40	15.93	8.81	. . .	2 34.14
32	9	. .	. .	. .	. .	10.	26.5	. .	18 52.98	27.09	. .	III.	2	10.940	49 49.76	15.84	13.01	. . .	30 18.61
33	8	. .	. .	6.	23.	39.5	. .	. .	20 22.79	27.08	. .	V.	3	20.450	39 59.01	15.71	11.50	. . .	20 26.22
34	9	. .	51.	. .	25.	. .	. .	. .	22 24.78	27.07	. .	IV.	3	26.918	33 13.29	15.55	10.48	. . .	13 39.32
35	11	. .	. .	. .	51.	. .	. .	. .	25 50.87	27.07	. .	.	3	34.078	25 44.19	15.27	9.35	. . .	6 8.81
36	10	. .	. .	. .	10.5	27.5	. .	. .	27 10.53	27.06	. .	.	3	27.048	33 5.20	15.16	10.46	. . .	23 13 30.82
37	8	. .	. .	. .	31.	48.	5.	. .	28 31.24	27.06	. .	.	5	42.015	17 18.20	15.04	8.11	. . .	22 57 41.35
38	9	. .	. .	26.	. .	0.	. .	. .	30 42.98	27.05	. .	.	3	19.840	40 37.40	14.86	11.59	. . .	23 21 3.85
39	10	. .	. .	42.5	. .	. .	. .	. .	32 59.41	27.05	. .	.	2	9.330	51 30.96	14.68	13.26	. . .	23 31 58.90
40	9	. .	42.	. .	16.	. .	. .	. .	34 15.78	27.04	. .	IV.	4	40.485	18 53.16	14.58	8.35	. . .	22 59 16.09
41	10	. .	. .	. .	. .	. .	. .	. .	. . .	. .	. .	.	5	51.978	. . .	14.44	6.58		
42	.	. .	. .	23.	. .	. .	. .	. .	37	27.03	. .	.	.	. . .	. . .	14.30			
43	10	. .	32.	. .	. .	. .	. .	. .	39 5.75	27.02	. .	.	2	17.268	43 12.81	14.19	12.00	. . .	23 23 39.00
44	8	. .	. .	. .	. .	. .	44.5	. .	39 11.06	27.02	. .	.	3	23.800	36 28.26	14.17	10.97	. . .	16 53.40
45	10	. .	. .	. .	47.	4.	. .	. .	42 47.02	27.01	. .	.	3	25.043	35 10.98	13.90	10.78	. . .	23 15 35.66
46	10	. .	. .	. .	29.5	. .	3.	. .	44 29.48	27.00	. .	.	5	40.428	18 57.92	13.76	8.36	. . .	22 59 20.04
47	9	. .	19.5	36.	. .	. .	. .	. .	50 53.02	26.99	. .	.	3	23.669	36 37.35	13.26	10.99	. . .	23 17 1.60
48	11	. .	. .	. .	. .	. .	31.5	. .	50 58.10	26.99	. .	.	3	29.955	30 2.19	13.24	10.00	. . .	10 25.43
49	9	. .	. .	. .	. .	25.	41.5	. .	52 8.00	26.98	. .	.	2	13.460	47 12.24	13.16	12.61	. . .	23 27 38.01
50	8.9	. .	. .	34.8	. .	8.	25.	. .	20 58 51.51	26.97	. .	V.	4	43.511	15 43.35	12.64	7.87	. . .	22 56 3.86
51	9	. .	21.5	38.	. .	. .	. .	. .	21 0 55.00	26.96	. .	.	3	32.355	27 32.63	12.47	9.63	. . .	23 7 54.73
52	7.8	. .	. .	9.5	26.	. .	. .	. .	1 26.10	26.95	. .	.	3	35.023	24 44.95	12.44	9.21	. . .	5 6.60
53	8.9	. .	50.	7.	. .	. .	. .	. .	4 23.74	26.94	. .	.	3	30.838	29 7.55	12.21	9.87	. . .	9 29.63
54	8.9	. .	. .	. .	. .	38.	55.	. .	4 21.29	26.94	. .	.	2	18.332	42 6.78	12.22	11.85	. . .	22 30.85
55	10	. .	. .	. .	. .	. .	56.	. .	7 22.50	26.93	. .	.	2	14.995	45 35.86	11.99	12.38	. . .	26 0.23
56	8.9	. .	7.5	24.	41.	57.5	. .	. .	11 40.92	26.92	. .	.	3	38.798	20 47.88	11.67	8.60	. . .	1 8.15
57	5	. .	26.	42.5	59.	. .	. .	. .	13 59.32	26.91	. .	.	2	22.268	37 59.50	11.50	11.23	. . .	18 22.23
58	8.7	. .	. .	51.	7.5	24.	. .	. .	15 7.45	26.90	. .	.	2	17.658	42 48.60	11.42	11.96	. . .	23 11.98
59	4.3	. .	7.	24.	40.5	57.5	. .	. .	17 40.66	26.90	. .	.	3	36.555	23 8.82	11.23	8.96	. . .	3 29.01
60	9	. .	51.	7.8	24.5	. .	. .	. .	23 24.57	26.89	. .	IV.	3	23.387	36 55.04	10.82	11.05	. . .	23 17 16.91
61	11	. .	. .	57.5	. .	. .	. .	. .	28 14.43	26.88	. .	.	5	49.630	9 20.18	10.49	6.89	. . .	22 49 37.56
62	11	. .	43.5	. .	. .	. .	. .	. .	31 17.17	26.87	. .	.	5	49.332	9 38.82	10.27	6.94	. . .	22 49 56.03
63	9	. .	37.	54.	10.5	27.5	. .	. .	36 10.64	26.86	. .	IV.	3	25.592	34 36.60	9.95	10.69	. . .	23 14 57.24
64	10	. .	. .	. .	. .	8.	24.5	. .	37 51.16	26.85	. .	.	.	F. W.	. . .	9.84			
65	10	. .	39.5	. .	13.5	. .	. .	. .	40 13.38	26.85	. .	IV.	2	10.265	50 32.52	9.68	13.17	. . .	23 30 55.37
66	11	. .	. .	23.	. .	. .	. .	. .	21 47 39.94	−27.83	. .	.	5	50.582	− 8 20.41	− 9.21	− 6.72	. . .	−22 48 36.34

CORRECTIONS,

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″	°	°	°	°	°	″	in.	°	°	°	°	°

REMARKS.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		ZONE 193. AUGUST 24. C. $D_0=-20°\ 10'\ 0''$.																	
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	. .	27.	44.	. .	22 26 10.85	+23.11	. .	V.	3	32.242	−27 39.27	− 4.62	− 9.67	. . .	−20 37 53.56
2	9	. .	4.2	. .	38.	54.5	10.8	. .	31 37.78	23.10	. .	IV.	3	23.328	36 58.74	4.39	11.01	. . .	47 14.14
3	8	. .	. .	50.7	7.2	23.5	. .	. .	39 7.16	23.08	. .	IV.	5	45.730	13 24.95	4.08	7.64	. . .	20 23 36.67
4	9	. .	. .	. .	. .	46.1	. .	. .	41 29.35	23.08	. .	V.	2	6.664	54 18.28	3.99	13.54	. . .	21 4 35.81
5	8	. .	32.5	49.1	5.3	21.9	38.4	. .	47 5.46	23.07	. .	IV.	2	14.678	45 55.67	3.78	12.32	. . .	20 56 11.77
6	9	. .	12.8	29.3	45.3	2.2	. .	. .	48 45.70	23.06	. .	IV.	5	48.068	10 58.25	3.72	7.29	. . .	21 9.26
7	9	. .	. .	. .	16.9	33.	49.7	. .	58 16.75	23.05	. .	V.	5	52.985	5 49.49	3.41	6.56	. . .	15 59.46
8	9	. .	. .	. .	. .	. .	. .	. .	22 58	23.05	. .	VII.	3	29.582	30 25.28	3.41	10.06	. . .	40 38.75
9	8	. .	. .	32.	. .	4.5	. .	. .	23 5 48.31	23.04	. .	IV.	4	38.967	20 28.24	3.16	8.65	. . .	30 40.05
10	9	. .	. .	. .	. .	. .	. .	. .	6	23.04	. .	VII.	3	20.606	39 48.35	3.15	11.43	. . .	50 2.93
11	9	. .	. .	. .	20.	36.3	. .	. .	8 19.82	23.04	. .	V.	3	23.738	36 32.58	3.07	11.09	. . .	46 46.74
12	9	. .	. .	53.4	9.7	26.	. .	. .	12 9.65	23.03	. .	IV.	3	19.875	40 35.08	2.93	11.55	. . .	50 49.56
13	9	. .	56.8	13.3	29.3	. .	. .	. .	14 29.64	23.03	. .	III.	4	39.344	20 4.57	2.84	8.59	. . .	30 16.00
14	4	. .	. .	. .	. .	. .	. .	. .	23 15	+23.03	. .	VII.	2	15.717	−44 50.46	− 2.81	−12.13	. . .	−20 55 5.40
		ZONE 194. AUGUST 29. C. $D_0=-21°\ 25'\ 20'$.																	
1	6.7	. .	32.	48.	5.3	22.1	38.5	. .	23 1 5.21	+23.22	. .	IV.	3	26.301	−33 52.25	− 6.42	− 3.55	. . .	−21 59 22.22
2	9	. .	. .	14.2	30.7?	. .	. .	. .	2 30.72	23.21	. .	III.	3	35.168	24 35.98	6.26	2.22	. . .	21 50 4.46
3	9	. .	43.2	. .	17.2	. .	50.3	. .	8 16.95	23.19	. .	IV.	3	25.419	34 47.58	5.63	3.69	. . .	22 0 16.90
4	8.9	. .	. .	14.4	. .	47.5	. .	. .	8 30.94	23.19	. .	IV.	3	24.372	35 53.26	5.61	3.86	. . .	1 22.73
5	10	. .	. .	33.3	50.	. .	. .	. .	14 49.97	23.18	. .	III.	2	17.528	42 56.83	4.94	4.89	. . .	8 26.66
6	8.9	. .	57.2	. .	31.3	48.	4.	. .	16 30.96	23.17	. .	IV.	2	10.112	50 41.99	4.76	6.01	. . .	16 12.76
7	9	. .	. .	. .	15.7	32.7	. .	. .	18 15.80	23.16	. .	V.	3	25.606	34 35.50	4.56	3.66	. . .	0 3.72
8	8	. .	55.2	12.2	. .	. .	2.3	. .	23 28.90	23.15	. .	IV.	2	14.112	46 31.17	4.02	5.41	. . .	12 0.60
9	8	. .	. .	19.	35.2	. .	8.3	. .	23 35.31	23.14	. .	IV.	2	21.022	39 17.75	4.01	4.36	. . .	22 4 46.12
10	7	. .	. .	. .	. .	20.5	37.	. .	25 3.90	23.13	. .	V.	3	40.154	19 22.72	3.86	1.47	. . .	21 44 48.05
11	8.9	. .	57.4	14.3	30.3	47.	3.8	. .	23 30 30.63	+23.12	. .	IV.	4	42.607	−16 39.90	− 3.29	− 1.10	. . .	−21 42 4.29
		ZONE 195. AUGUSL 30. S. $D_0=-23°\ 17'\ 50''$.																	
1	10	. .	52.5	. .	26.5	. .	. .	. .	19 7 26.36	+20.05	+0.91	IV.	5	48.312	−10 43.05	− 9.29	− 3.10	19 7 47.32	−23 28 45.44
2	10	. .	. .	39.5	. .	. .	. .	. .	8 56.49	20.04	0.91	.	5	48.312	10 43.05	9.14	3.10	9 17.44	28 45.29
3	8	. .	. .	. .	51.5	. .	25.5	. .	9 51.66	20.04	0.69	IV.	3	29.659	30 21.46	9.05	6.04	10 12.39	48 26.55
4	8	. .	5.5	. .	. .	. .	. .	. .	11 39.37	20.03	0.63	.	3	24.820	35 25.08	8.88	6.82	12 0.03	53 30.78
5	10	. .	. .	. .	. .	. .	53.5	. .	11 19.87	20.03	0.55	.	3	19.332	41 8.76	8.91	7.70	11 40.45	59 15.37
6	11	. .	. .	. .	. .	31.	. .	. .	13 14.10	20.02	0.67	.	3	26.717	33 25.71	8.72	6.52	13 34.79	51 30.95
7	10	. .	. .	23.	. .	. .	. .	. .	14 39.95	20.01	0.87	.	4	41.539	17 46.76	8.59	4.18	15 0.83	35 49.53
8	10	. .	. .	. .	. .	26.	. .	. .	15 9.26	20.01	0.99	.	4	49.478	9 28.77	8.54	2.91	15 30.26	27 30.22
9	8	. .	21.	. .	. .	11.5	. .	. .	17 54.76	20.00	0.86	V.	3	39.132	20 26.79	8.28	4.55	18 15.62	38 29.62
10	10	. .	. .	35.	. .	. .	. .	. .	22 51.91	19.98	0.68	.	2	22.930	37 17.81	7.80	7.13	23 12.57	55 22.74
11	9	. .	. .	. .	. .	51.	. .	. .	22 34.08	19.98	0.70	.	3	25.072	35 8.97	7.83	6.78	22 54.76	23 53 13.58
12	8	. .	36.	43	. .	. .	. .	. .	25 9.98	19.97	0.49	III.	2	8.288	52 36.28	7.50	9.48	25 30.42	24 10 43.26
13	.	. .	. .	. .	16.	. .	. .	. .	26 15.88	19.96	0.92	.	4	39.	20	7.48	. .	26 36.76	23 37
14	7	. .	53.5	10.5	. .	. .	. .	. .	30 27.37	19.94	0.86	III.	3	32.130	27 46.56	7.08	5.66	30 48.17	45 49.30
15	7	. .	. .	28.	. .	2.	. .	. .	30 45.03	19.94	0.87	III.	3	32.910	28 0.22	7.06	5.54	31 5.84	46 2.82
16	9	. .	. .	. .	. .	. .	34.	. .	19 31 0.42	+19.93	+0.93	.	3	37.490	−22 9.58	− 7.03	− 4.81	19 31 21.26	−23 40 11.42

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 24,		. .	. .	. .	. .	. .	359 59 62.66	30.0089
29,		. .	. .	. .	. .	. .	61.99	30.0118
30,		. .	. .	. .	. .	. .	60.73	30.0139

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 193	Aug. 24, 22 20	69 32 {34.9 / 34.5	33.9 / 34.3	36.9 / 37.1	34.4 / 34.9	27.6 / 28.5	29.6 / 30.4	33.04	30.222	67.8	61.8	67.8	67.	
	22 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	60.6			
	23 0	. .	. .	. .	. .	. .	. .	. .	30.226	67.2	59.5			
	23 20	{34.4 / 34.6	34.4 / 34.2	37.2 / 37.4	34.2 / 34.4	28.2 / 28.8	28.9 / 29.6	33.02	30.226	67.	59.4	66.8	64.8	70.2
Zone 194	Aug 29,* 23 0	60 47 {34.2 / 34.7	29.9 / 30.3	34.2 / 33.9	29.8 / 30.8	26.3 / 26.6	29.6 / 30.1	30.87	29.964	73.2	67.5	73.5	73.4	74.2
	23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.8			
	0 35	. .	. .	. .	. .	. .	. .	. .	29.960	72.8	67.5			
Zone 195	Aug. 30, 19 0	72 39 60.	56.2	59.9	54.0	48.0	55.5	55.60	29.914	79.	71.8			

REMARKS.

(194) 1. Perhaps micrometer 2^r in error. (See Tables $\Delta\alpha$ and $\Delta\delta$.)

(195) 12. Minutes of transit assumed as 24 instead of 25. Time of transit over T. III assumed as 53^s instead of 43^s.

(195) 15. Micrometer reading assumed as $31^r.910$, instead of $32^r.910$

*Hour assumed as 20^h instead of 23^h, and degrees of circle reading as 70° instead of 60°.

ZONE 195. AUGUST 30. S. $D_0 = -23° 17' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
17	9	. .	. .	. .	. .	. .	52.5	. .	19 32 18.88	+19.93	+0.71	.	2	19.722	−40 39.35	− 6.90	− 7.64	19 32 39.52	−23 58 43.89
18	10	. .	. .	. .	. .	. .	34.	. .	34 0.38	19.92	0.73	.	2	20.565	39 46.60	6.75	7.50	34 21.03	57 50.85
19	10	. .	. .	. .	19.5	. .	53.6	. .	35 19.70	19.92	1.01	.	3	40.415	19 6.64	6.62	4.36	35 40.63	23 37 7.62
20	9	. .	. .	28.5	. .	. .	. .	. .	37 45.47	19.90	0.64	.	2	12.963	47 42.90	6.41	8.71	38 6.01	24 5 48.02
21	9	. .	1.	18.	. .	. .	. .	. .	40 34.95	19.89	0.66	III.	2	13.368	47 17.75	6.14	8.65	40 55.50	24 5 22.54
22	9	. .	12.	. .	. .	3.	. .	. .	41 46.00	19.88	0.95	.	3	33.639	26 11.96	6.04	5.42	42 6.83	23 44 13.42
23	8	. .	57.5	. .	31.	. .	. .	. .	43 31.10	19.87	0.97	IV.	3	35.000	14 18.88	5.87	3.63	43 51.94	32 18.38
24	8	. .	. .	. .	. .	. .	55.	. .	47 21.38	19.86	1.21	.	3	49.492	9 36.27	5.52	2.91	47 42.45	27 34.70
25	7	. .	. .	. .	3.	. .	. .	. .	49 2.87	19.85	1.00	VII.	2	34.008	25 43.00	5.36	5.36	49 23.72	43 43.72
26	7	. .	. .	. .	. .	59.	15.5	. .	49 42.05	19.85	1.00	.	2	33.460	26 17.70	5.30	5.45	50 2.90	44 18.45
27	9	. .	. .	29.	. .	2.	. .	. .	54 45.56	19.83	1.11	III.	3	39.078	20 30.55	4.84	4.58	55 6.50	23 38 29.97
28	7	. .	45.	. .	19.	. .	. .	. .	19 59 18.92	19.81	0.87	IV.	2	17.516	42 57.74	4.43	7.99	19 59 39.60	24 1 0.16
29	8	. .	50.	. .	24.5	. .	. .	. .	20 3 24.12	19.79	0.99	IV.	3	25.255	34 57.87	4.08	6.76	20 3 44.90	23 52 58.71
30	10	. .	21.	. .	. .	. .	. .	. .	6 54.86	19.77	1.03	.	3	26.815	33 19.93	3.78	6.51	7 15.66	51 20.22
31	8	. .	. .	. .	. .	11.5	28.	. .	6 54.45	19.77	0.95	V.	3	20.562	39 51.92	3.78	7.51	7 15.17	57 53.21
32	9	. .	41.5	59.	. .	32.5	. .	. .	12 15.61	19.75	1.00	III.	3	21.552	38 50.21	3.31	7.35	12 36.36	56 50.87
33	9	. .	32.	49.	. .	. .	. .	. .	15 5.90	19.73	1.02	.	3	21.155	39 15.11	3.07	7.42	15 26.65	57 15.60
34	10	. .	. .	. .	. .	13.5	. .	. .	15 56.69	19.73	1.24	.	4	37.758	21 44.23	3.00	4.78	16 17.66	39 42.01
35	9	. .	23.	40.	. .	. .	. .	. .	18 56.90	19.72	1.39	.	4	46.773	12 17.73	2.74	3.34	19 18.01	30 13.81
36	10	. .	11.	. .	. .	. .	. .	. .	20 20 44.83	+19.71	+1.25	.	3	35.680	−24 3.80	− 2.57	− 5.10	20 21 5.79	−23 42 1.47

ZONE 196. AUGUST 30. S. $D_0 = -19° 32' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	4.	. .	37.	. .	. .	20 43 20.48	+19.51	. .	III.	2	20.899	−39 25.20	−11.75	−11.31	20 43	−20 12 8.26
2	8	. .	. .	. .	38.	54.	. .	. .	49 37.80	19.48	. .	IV.	4	50.990	7 53.61	11.35	7.02	. . .	19 40 31.98
3	8	. .	19.5	36.	. .	9.	. .	. .	53 52.54	19.47	. .	III.	4	41.850	17 27.04	11.07	8.31	. . .	19 50 6.42
4	10	. .	. .	41.	. .	. .	. .	. .	57 57.52	19.45	. .	.	2	15.130	45 27.14	10.82	12.12	. . .	20 18 10.08
5	11	. .	. .	. .	. .	. .	. .	. .	20 58	19.45	. .	.	3	27.765	. .	. .	10.30		
6	9	. .	39.5	. .	22.	. .	55.	. .	21 8 22.22	19.41	. .	IV.	3	25.152	35 4.27	10.12	10.70	. . .	7 45.09
7	10	. .	2.	. .	34.5	. .	57.	. .	12 34.55	19.40	. .	IV.	3	23.270	37 2.38	9.82	10.95	. . .	9 43.15
8	10	. .	16.	. .	. .	. .	. .	. .	14 49.03	19.39	. .	.	2	13.345	47 18.88	9.67	12.39	. . .	20 19 59.94
9	9	. .	43.5	. .	16.5	. .	. .	. .	18 16.42	19.38	. .	IV.	4	49.362	9 36.00	9.42	7.20	. . .	19 42 12.62
10	8	. .	. .	. .	. .	43.	59.	. .	18 26.45	19.38	. .	V.	3	34.858	24 54.88	9.41	9.28	. . .	19 57 33.57
11	10	. .	. .	2.	. .	. .	51.	. .	20 18.38	19.37	. .	.	2	21.399	38 54.09	9.28	11.23	. . .	20 11 34.60
12	8	. .	5.5	22.	. .	55.	. .	. .	22 38.52	19.36	. .	IV.	3	38.600	21 0.43	9.11	8.74	. . .	19 53 38.28
13	.	. .	. .	. .	44.5	. .	. .	. .	25 44.38	19.35	. .	.	3	40.570	18 56.79	8.88	8.49	. . .	51 34.16
14	9	. .	. .	. .	. .	50.5	7.	. .	26 34.20	19.35	. .	.	3	37.679	21 57.98	8.81	8.88	. . .	19 54 35.67
15	5	. .	. .	3.5	20.	. .	. .	. .	28 19.92	19.34	. .	.	3	24.762	35 28.73	8.68	10.75	. . .	20 8 8.16
16	9	. .	. .	. .	. .	9.	26.	. .	28 52.96	19.34	. .	.	3	37.995	21 38.08	8.64	8.87	. . .	19 54 15.59
17	8	. .	. .	. .	. .	21.5	38.	. .	30 5.08	19.34	. .	.	2	15.338	45 14.54	8.56	12.11	. . .	20 17 55.21
18	6	. .	56.5	. .	29.	45.8	. .	. .	34 29.23	19.32	. .	.	2	15.043	45 32.29	8.20	12.16	. . .	18 12.65
19	9	. .	. .	. .	18.	35.	. .	. .	35 18.19	19.32	. .	.	3	21.450	38 56.54	8.14	11.23	. . .	20 11 35.91
20	10	. .	. .	24.5	. .	. .	. .	. .	38 41.05	19.31	. .	.	4	46.995	12 4.16	7.87	7.55	. . .	19 44 39.58
21	8	. .	. .	. .	. .	. .	31.	. .	38 58.24	19.31	. .	.	2	16.993	43 30.56	7.85	11.86	. . .	20 16 10.27
22	8	. .	26.5	43.	. .	. .	. .	. .	44 59.50	19.29	. .	.	2	19.502	40 52.76	7.33	11.51	. . .	20 13 31.60
23	8	. .	. .	. .	22.	. .	54.	. .	44 21.58	19.29	. .	.	3	40.958	18 32.37	7.38	8.43	. . .	19 51 8.18
24	9	. .	22.5	. .	55.5	. .	. .	. .	46 55.43	19.28	. .	.	3	26.232	33 56.71	7.16	10.54	. . .	20 6 34.41
25	10	. .	52.8	. .	25.5	42.	. .	. .	21 48 25.59	+19.28	. .	.	4	38.062	−21 24.58	− 7.03	− 8.87	. . .	−19 54 0.48

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(195) 23. Micrometer reading assumed as $45^r.000$, not $35^r.000$.

(196) 6. Time of transit over T. II assumed as $49^s.5$ instead of $39^s.5$.

(196) 7. Time of transit over T. VI assumed as 7^s instead of 57^s.

INSTRUMENT READINGS.

	Date.	Circle. A	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 195	Aug. 30, 19 20		. .	. .	. .	. .	. .	. .	29.904	77.	71.2			
	20 0		. .	. .	. .	. .	. .	. .	29.900	76.4	70.4			
	20 20	72 39 61.	56.4	60.3	54.0	48.3	54.9	55.82						
Zone 196	Aug. 30, 20 40	68 54 60.	55.2	60.4	54.8	48.3	53.8	55.82	29.892	75.2	69.8			
	21 0	. .	. .	. .	. .	. .	. .	. .	29.892	75.2	69.5			
	22 0	58.9	55.2	60.4	54.3	48.3	53.2	55.05	. .	. .	69.4			

ZONE 196. AUGUST 30. S. $D_0 = -19° 32' 20''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
26	9	. .	. .	. .	. .	. .	1.	. .	21 50 28.32	+19.27	. .	.	3	30.419	−29 33.33	− 6.85	− 9.94	. . .	−20 2 10.12
27	8	. .	42.	. .	15.	. .	. .	. .	56 14.92	19.26	. .	.	4	43.790	15 24.95	6.25	8.03	. . .	19 47 59.23
28	8	. .	15.8	. .	48.5	. .	. .	. .	21 58 48.63	19.25	. .	.	2	15.320	45 15.04	6.01	12.11	. . .	20 17 53.16
29	.	. .	. .	. .	. .	1.	. .	. .	22 0 44.68	+19.24	. .	.	4	48.173	−10 50.65	− 5.82	− 7.38	. . .	−19 43 23.85

ZONE 197. AUGUST 30. S. $D_0 = -19° 32' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	50.5	. .	23.	40.	. .	. .	22 43 23.29	+19.13	+1.72	IV.	2	17.302	−43 11.24	− 3.98	−11.84	22 43 44.14	−20 15 47.06
2	.	. .	. .	. .	11.5	30.	46.5	. .	44 13.60	19.13	1.82	.	4	41.934	17 22.02	3.95	8.26	44 34.55	19 49 54.23
3	6	. .	. .	26.	. .	58.5	. .	. .	45 42.28	19.13	1.76	III.	3	34.042	25 46.57	3.89	9.40	46 3.17	19 58 19.86
4	8	. .	15.	. .	48.	. .	. .	. .	48 48.00	19.12	1.64	IV.	2	12.129	48 35.57	3.77	12.60	49 8.76	20 21 11.94
5	9	. .	. .	. .	41.5	. .	14.	. .	49 41.32	19.12	1.76	IV.	5	45.346	13 49.29	3.73	7.78	50 2.20	19 46 20.80
6	8	. .	2.	. .	34.5	. .	. .	. .	52 34.69	19.12	1.63	IV.	3	23.800	36 28.89	3.62	10.91	52 55.44	20 9 3.42
7	.	. .	2.	. .	. .	. .	. .	. .	34.96										
8	9	. .	. .	41.	. .	9.	. .	. .	53 57.61	19.11	1.72	III.	5	46.690	12 24.68	3.58	7.57	54 18.44	19 44 55.83
9	10	. .	. .	. .	. .	. .	37.	. .	55 4.29	19.11	1.61	.	2	25.590	34 31.40	3.53	10.64	55 25.01	20 7 5.57
10	9	. .	. .	2.5	. .	35.	. .	. .	58 18.72	19.11	1.54	III.	2	17.052	43 26.61	3.41	11.88	22 58 39.37	16 1.90
11	10	. .	. .	. .	. .	0.5	. .	. .	22 59 44.08	19.10	1.57	.	3	31.500	28 26.00	3.36	9.78	23 0 4.75	20 0 59.14
12	10	. .	. .	59.5	. .	31.	. .	. .	23 6 15.38	19.09	1.58	III.	5	50.088	8 51.42	3.14	7.07	6 36.05	19 41 21.63
13	8	. .	10.	26.5	43.	59.5	. .	. .	8 43.03	19.09	1.55	IV.	5	49.989	8 57.65	3.05	7.08	9 3.67	41 27.78
14	6	. .	41.5	. .	14.2	. .	. .	. .	10 14.28	19.08	1.54	V.	5	51.708	7 9.67	3.00	6.83	10 34.90	39 39.50
15	8	. .	8.	24.	40.5	. .	. .	. .	12 40.60	19.08	1.46	IV.	4	43.208	16 2.24	2.93	8.06	13 1.14	48 33.23
16	8	. .	58.5	. .	30.5	. .	. .	. .	15 30.92	19.07	1.40	IV.	3	36.332	23 22.88	2.84	9.07	15 51.39	19 55 54.79
17	9	. .	22.7	. .	55.5	. .	. .	. .	17 55.55	19.07	1.30	IV.	2	20.981	39 20.31	2.75	11.32	18 15.92	20 11 54.38
18	10	. .	16.	. .	. .	6.5	. .	. .	22 49.47	19.06	1.22	V.	2	14.158	46 28.40	2.63	12.33	23 9.75	20 19 3.36
19	10	. .	. .	. .	11.5	. .	44.3	. .	24 11.48	19.06	1.31	IV.	4	39.265	20 9.71	2.59	8.63	24 31.85	19 52 40.93
20	9	. .	. .	. .	. .	36.	. .	. .	25 19.59	19.06	1.27	.	3	33.952	25 51.79	2.56	9.41	25 39.92	58 23.76
21	10	. .	. .	. .	44.	. .	. .	. .	27 43.88	19.06	1.29	.	4	45.126	14 1.79	2.50	7.78	28 4.23	46 32.07
22	10	. .	48.	. .	. .	. .	. .	. .	31 20.96	19.05	1.22	.	3	37.805	21 50.38	2.41	8.85	31 41.23	54 21.64
23	8	. .	53.	. .	26.	42.5	. .	. .	32 25.99	19.05	1.23	IV.	4	42.689	16 34.70	2.39	8.14	32 46.27	19 49 5.23
24	10	. .	. .	45.	. .	17.	. .	. .	39 1.02	19.04	1.10	IV.	3	31.253	28 41.57	2.24	9.81	39 21.16	20 1 13.62
25	9	. .	. .	8.	24.	40.5	57.	. .	23 40 24.22	+19.04	+1.16	.	5	48.499	−10 31.26	− 2.22	− 7.28	23 40 44.42	−19 43 0.76

ZONE 198. AUGUST 31. C. $D_0 = -23° 55' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.10	. .	. .	. .	42.	59.2	. .	. .	19 31 42.16	+22.72	. .	V.	5	54.775	− 3 57.02	− 9.11	− 6.02	. . .	−23 59 32.15
2	9.10	. .	. .	. .	. .	35.3	52.	. .	32 18.36	22.72	. .	V.	5	55.487	3 12.51	9.05	5.90	. . .	23 58 47.46
3	9	. .	. .	. .	. .	. .	45.7	. .	33 11.86	22.71	. .	VI.	2	12.844	47 50.62	8.96	12.78	. . .	24 43 32.38
4	9.10	. .	. .	. .	34.2	. .	. .	. .	19 40 34.09	22.68	. .	IV.	5	49.199	9 47.37	8.18	6.91	. . .	5 22.46
5	9.10	. .	20.	. .	53.8	10.5	. .	. .	20 6 53.76	22.57	. .	IV.	3	37.845	21 47.68	5.57	8.74	. . .	17 21.99
6	9	. .	4.	20.8	37.5	55.	11.3	. .	20 9 37.76	+22.55	. .	IV.	3	33.915	−25 54.30	− 5.31	− 9.35	. . .	−24 21 28.96

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Aug. 31,		. .	. .	. .	. .	. .	359 59 61.86	30.0094

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 197	Aug. 30, 22 40	68 54 60.0	56.0	61.3	56.2	49.4	54.8	56.28	29.882	75.0	68.9			
	23 0	. .	. .	. .	. .	. .	. .	. .	29.880	73.8	67.3			
	23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.5			
	23 50	60.	56.	61.3	56.0	49.2	54.8	56.22	29.882	74.3	68.1	73.5	74.6	72.5
Zone 198	Aug. 31, 19 30	73 17 {32.7 / 34.7	27. / 27.2	31.7 / 32.1	29.1 / 29.9	23.7 / 25.1	27.9 / 29.2	29.19	29.828	78.2	75.4	78.	77.	75.8
	19 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.3			
	20 0	. .	. .	. .	. .	. .	. .	. .	29.822	78.	74.5			

REMARKS.

(197) 8. Time of transit over T. V assumed as 14^s instead of 9^s.

ZONE 199. AUGUST 31. C. $D_0 = -20° 10' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	39.2	56.	12.	28.8	45.2	. .	22 26 12.27	+19.23	+1.53	IV.	3	32.128	−27 46.56	− 6.05	− 3.68	22 26 33.03	−20 37 56.29
2	10	. .	. .	1.5	. .	. .	. .	. .	31 18.07	19.22	1.62	III.	4	40.862	18 29.05	5.79	2.40	31 38.91	28 37.24
3	9	. .	. .	. .	. .	. .	0.?	. .	31 27.15	19.22	1.42	VII.	3	23.187	37 6.43	5.78	4.99	31 47.79	47 17.20
4	9	. .	. .	. .	. .	43.	59.4	. .	38 26.54	19.20	1.48	V.	3	28.678	31 22.70	5.43	4.18	38 47.22	41 32.31
5	7	. .	. .	. .	. .	. .	. .	. .	39	19.20	1.65	VII.	5	45.616	13 31.79	5.39	1.71	. . .	23 38.89
6	9	. .	. .	. .	. .	. .	. .	. .	40	19.20	1.58	VII.	4	40.340	19 2.37	5.35	2.48	. . .	20 29 10.20
7	8	. .	. .	. .	31.	47.5	4.3	. .	41 31.03	19.19	1.22	V.	2	6.556	54 25.12	5.28	7.47	41 51.44	21 4 37.87
8	9	. .	. .	. .	23.3	. .	. .	. .	43 23.20	19.19	1.71	IV.	5	53.176	5 37.61	5.19	0.59	43 44.10	20 15 43.39
9	8	. .	33.8	50.4	7.	23.3	39.9	. .	47 6.90	19.18	1.28	IV.	2	14.564	46 2.89	5.01	6.27	47 27.36	56 14.17
10	9	. .	14.2	. .	47.2	. .	20.1	. .	22 48 47.20	19.18	1.65	IV.	5	47.965	11 4.65	4.93	1.36	22 49 8.03	21 10.94
11	8	. .	21.3	37.3	54.	. .	. .	. .	23 24 54.09	19.10	1.19	III.	2	15.824	44 43.49	3.50	6.11	23 25 14.38	54 53.10
12	8	. .	4.3	20.7	37.1	. .	. .	. .	33 37.20	19.09	1.36	III.	3	34.556	25 14.39	3.25	3.32	33 57.65	20 35 20.96
13	8.9	. .	. .	. .	. .	53.5	10.	. .	33 36.93	19.09	1.10	VI.	2	10.818	49 57.87	3.25	6.86	33 57.12	21 0. 7.98
14	8.9	. .	55.2	12.	8.1	25.	41.4	. .	42 8.36	19.08	1.04	IV.	2	7.121	53 49.51	3.05	6.42	42 28.48	21 3 58.98
15	9	. .	21.2	37.3	54.	. .	27.	. .	46 54.06	19.07	1.14	IV.	2	17.876	42 34.99	2.95	5.80	47 14.27	20 52 43.74
16	9	. .	14.8	. .	48.	4.5	. .	. .	50 47.94	19.06	1.37	IV.	4	40.223	19 9.59	2.88	2.49	51 7.37	29 14.96
17	7	. .	. .	. .	. .	36.	53.5	. .	51 20.00	19.06	1.14	V.	2	19.054	41 21.30	2.87	5.65	51 39.20	51 29.82
18	7	. .	22.1	38.2	55.	11.4	27.9	. .	23 54 54.94	19.05	1.12	IV.	2	17.547	42 55.82	2.82	5.85	23 55 14.11	53 4.49
19	9.10	. .	51.8	8.5	. .	. .	. .	. .	0 8 25.04	19.04	1.48	III.	5	55.134	3 34.61	2.66	0.26	0 8 45.56	13 37.53
20	8	. .	. .	. .	. .	1.5	18.2	. .	8 45.02	19.04	0.97	V.	2	8.372	52 31.33	2.65	7.26	9 5.03	2 41.24
21	9	. .	. .	40.	56.7	. .	. .	. .	12 56.55	19.04	1.14	III.	3	24.664	35 34.94	2.63	4.80	13 16.73	45 42.37
22	5	. .	17.3	34.	50.	7.	23.5	. .	13 50.38	19.04	1.06	IV.	2	17.221	43 16.38	2.63	5.92	14 10.48	53 24.93
23	8.9	. .	9.3	26.1	42.5	0.	16.	. .	17 42.81	19.04	1.13	IV.	3	24.544	35 42.40	2.61	4.82	18 2.98	20 45 49.83
24	7	. .	10.8	27.	43.7	0.5	16.6	. .	19 43.74	19.04	0.98	IV.	2	12.912	47 46.29	2.60	6.56	20 3.76	57 55.45
25	9	. .	. .	. .	26.8	. .	. .	. .	25 26.69	19.03	1.37	IV.	5	49.492	9 28.98	2.61	1.09	25 47.09	19 32.68
26	8.9	. .	. .	15.3	32.	48.2	. .	. .	29 31.86	19.03	1.32	IV.	4	45.722	13 24.31	2.62	1.65	29 52.21	20 23 28.58
27	9	. .	48.	4.3	. .	37.7	. .	. .	31 21.03	19.03	0.97	IV.	2	15.	. . .	2.62	. .	31 41.03	
28	7	. .	19.2	35.3	52.	8.8	25.4	. .	34 52.16	19.03	0.91	IV.	2	9.965	50 51.14	2.65	7.00	35 12.10	21 1 0.79
29	9	. .	. .	. .	45.8	. .	19.	. .	44 45.92	19.03	1.09	VI.	3	27.612	32 29.33	2.75	4.35	45 6.04	20 42 36.43
30	9	. .	. .	28.3	45.	. .	17.7	. .	48 44.89	19.03	1.32	IV.	5	53.355	5 26.50	2.80	0.52	49 5.24	15 29.82
31	7.8	. .	. .	. .	59.2	. .	32.1	. .	0 50 59.16	+19.03	+1.21	VI.	4	42.753	−16 30.80	− 2.84	− 2.09	0 51 19.40	−20 26 35.73

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(199) 14. Time of transits over T.'s II and III assumed as 20ˢ earlier than recorded.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 199	Aug. 31, 22 20	69 32 {34.7 / 35.2	29.4 / 29.9	35.5 / 35.5	30.1 / 31.1	25.9 / 27.9	30.1 / 31.1	31.37	29.806	77.	72.7	76.5	76.	76.
	22 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.2			
	23 0	. .	. .	. .	. .	. .	. .	. .	29.806	76.3	72.1			
	23 25	. .	. .	. .	. .	. .	. .	. .	29.800	76.2	73.2			
	23 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.5			
	0 0	{33.8 / 34.7	29.4 / 29.8	34.7 / 35.1	30.2 / 31.5	26.3 / 26.8	29.9 / 30.9	31.09	29.790	76.	71.9	75.5	75.5	
	0 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.6			

ZONE 200. SEPTEMBER 1. S. $D_0 = -18° 55' 0''$.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	29.	. .	. .	. .	19 13 28.87	+19.14	+0.73	.	3	36.832	−22 51.25	−16.67	− 2.05	19 13 48.74	−19 18 9.97
2	8	. .	50.5	7.	. .	. .	. .	. .	15 23.39	19.14	0.79	III.	4	41.768	17 32.25	16.47	1.37	15 43.32	12 50.09
3	10	. .	. .	19.	. .	51.5	. .	. .	16 35.25	19.13	0.66	III.	3	27.640	32 28.26	16.35	3.33	16 55.04	27 47.94
4	10	. .	9.	. .	. .	. .	. .	. .	18 41.83	19.12	0.87	.	5	50.264	8 40.39	16.13	0.18	19 1.82	3 56.70
5	8	. .	. .	. .	56.5	. .	29.	. .	18 56.40	19.12	0.53	IV.	2	12.338	48 22.53	16.11	5.49	19 16.05	43 44.13
6	9	. .	30.	. .	. .	. .	35.	. .	21 2.63	19.11	0.56	.	2	14.482	46 7.59	15.90	5.18	21 22.30	41 28.67
7	7	. .	3.	19.5	36.	. .	. .	. .	22 35.93	19.10	0.56	IV.	2	14.128	46 30.16	15.74	5.23	22 55.59	41 51.13
8	10	. .	33.5	. .	. .	. .	. .	. .	24 6.37	19.09	0.63	.	2	20.358	39 59.07	15.59	4.35	24 26.09	35 19.01
9	10	. .	. .	24.	. .	. .	. .	. .	24 40.47	19.09	0.85	.	4	43.825	15 23.07	15.53	1.08	25 0.41	10 39.68
10	9	. .	. .	35.5	. .	. .	. .	. .	25 52.00	19.08	0.89	.	5	48.949	10 2.81	15.41	0.36	26 11.97	5 18.58
11	7	. .	48.	. .	21.5	. .	. .	. .	27 21.10	19.08	0.85	IV.	4	43.728	15 29.47	15.26	1.09	27 41.03	10 45.82
12	10	. .	. .	. .	. .	. .	1.	. .	27 44.73	19.08	0.89	.	5	47.640	11 24.92	15.25	0.54	28 4.70	6 40.71
13	9	. .	. .	. .	. .	. .	29.	. .	28 56.41	19.07	0.67	.	2	22.970	37 15.68	15.10	3.98	29 16.15	32 34.76
14	7	. .	. .	25.	41.	. .	. .	. .	30 41.16	19.06	0.66	IV.	2	21.540	38 45.37	14.92	4.19	31 0.88	34 4.48
15	10	. .	. .	51.5	. .	. .	. .	. .	34 7.88	19.04	0.74	.	3	27.720	32 23.17	14.58	3.32	34 27.66	27 41.07
16	10	. .	. .	59.5	. .	32.	. .	. .	36 15.83	19.03	0.87	V.	5	42.062	17 15.19	14.36	1.33	36 35.73	12 30.88
17	9	. .	43.	. .	. .	. .	. .	. .	38 15.83	19.02	0.93	.	4	47.990	11 1.39	14.16	0.49	38 35.78	6 16.04
18	9	. .	. .	. .	. .	58.5	14.5	. .	39 41.97	19.02	0.70	V.	2	21.052	39 15.99	14.02	4.26	40 1.69	34 34.27
19	11	. .	. .	48.5	. .	. .	. .	. .	41 4.93	19.01	0.87	.	3	39.335	20 14.55	13.88	1.70	41 24.81	15 30.13
20	8	. .	. .	15.5	. .	. .	. .	. .	42 31.92	19.00	0.70	.	2	20.318	40 1.90	13.75	4.36	42 51.62	35 20.01
21	7.6	. .	. .	53.	. .	25.3	. .	. .	43 9.16	19.00	. .	V.	.	F.Wire.	29 59.36	13.69	1.61	43 (26)	25 14.66
22	8	. .	55.	. .	. .	. .	. .	0.	45 27.63	18.99	0.85	.	3	35.756	23 59.02	13.46	2.20	45 47.47	19 14.68
23	7	. .	. .	. .	. .	36.	52.5	. .	46 19.67	18.99	0.67	.	2	14.960	45 37.99	13.37	5.10	46 39.33	40 56.46
24	8	. .	26.2	. .	59.	15.5	. .	. .	52 59.00	18.95	0.79	IV.	3	24.958	35 16.30	12.72	3.70	53 18.74	30 32.72
25	8	. .	29.	. .	1.	. .	34.	. .	56 1.37	18.94	0.96	IV.	4	42.995	16 15.49	12.43	1.19	56 21.27	11 29.11
26	9	. .	. .	. .	. .	18.5	. .	. .	57 2.23	18.94	1.00	V.	5	46.650	12 27.25	12.33	0.70	57 22.17	7 40.28
27	7	. .	40.5	57.	13.	. .	. .	. .	19 59 13.22	18.92	0.95	IV.	4	40.573	18 47.57	12.12	1.53	19 59 33.09	14 1.22
28	9	. .	. .	35.	. .	. .	. .	. .	20 3 51.41	18.91	0.81	.	3	23.458	36 50.71	11.68	3.93	20 4 11.13	32 6.32
29	8	. .	. .	. .	. .	. .	20.	. .	3 47.40	18.91	1.00	.	6	44.708	14 28.97	11.69	0.94	4 7.31	9 41.60
30	8	. .	. .	. .	. .	59.	15.5	. .	5 42.68	18.90	0.76	V.	2	16.312	44 13.45	11.51	4.94	6 2.34	39 29.90
31	10	. .	47.8	. .	. .	37.	. .	. .	8 20.58	18.88	0.73	V.	2	11.683	49 3.54	11.26	5.61	8 40.19	44 20.41
32	5.6	. .	51.5	8.	25.	. .	. .	. .	10 24.57	18.87	0.82	IV.	2	20.630	39 42.40	11.06	4.33	10 44.26	34 57.79
33	10	. .	. .	. .	. .	. .	59.	. .	10 26.39	18.87	0.82	.	2	19.720	40 39.53	11.06	4.46	10 46.08	35 55.05
34	10	. .	. .	. .	. .	8.	. .	. .	11 51.54	18.87	0.85	.	2	21.420	38 53.09	10.93	4.21	12 11.26	34 8.23
35	10	. .	. .	. .	. .	. .	5.	. .	12 32.40	18.86	0.86	.	2	22.680	37 33.87	10.87	4.04	12 52.12	32 48.78
36	10	. .	. .	. .	. .	. .	57.	. .	13 24.39	18.86	1.07	.	4	44.726	14 26.96	10.79	0.94	13 44.32	9 38.69
37	10	. .	34.	50.5	. .	. .	. .	. .	16 6.90	18.85	1.07	III.	4	43.485	15 44.67	10.54	1.11	16 26.82	10 56.32
38	8	. .	51.	8.	24.	. .	. .	. .	17 24.08	18.84	0.85	IV.	2	17.480	43 0.08	10.42	4.77	17 43.77	38 15.27
39	9	. .	. .	. .	. .	8.5	24.	. .	17 51.80	18.84	1.00	V.	3	34.945	24 49.45	10.38	2.31	18 11.64	20 2.14
40	10	. .	14.	. .	. .	. .	. .	. .	20 46.87	18.83	0.88	.	2	20.593	39 44.27	10.12	4.33	21 6.58	34 58.72
41	6	. .	. .	. .	. .	58.	. .	. .	20 41.75	18.83	1.15	.	5	49.612	9 21.31	10.13	0.25	21 1.73	4 31.69
42	7	. .	. .	. .	. .	. .	28.	. .	20 55.37	18.83	1.15	.	5	49.450	9 31.42	10.11	0.27	21 15.35	4 41.80
43	9	. .	. .	. .	. .	. .	. .	37.	21 4.38	18.82	0.87	.	2	18.230	42 13.05	10.02	4.67	22 24.07	37 27.74
44	10	. .	. .	. .	. .	30.	. .	. .	25 13.40	18.81	0.81	.	2	8.322	52 34.44	9.72	6.10	25 33.02	47 50.26
45	9	. .	13.	. .	46.5	. .	. .	. .	26 46.14	18.80	0.92	.	3	19.788	40 40.79	9.59	4.45	27 5.86	35 54.83
46	10	. .	. .	37.	. .	. .	. .	. .	28 53.42	18.79	1.08	.	4	36.978	22 32.87	9.39	2.03	29 13.29	17 44.29
47	9	. .	. .	. .	16.8	. .	. .	. .	29 16.67	18.79	1.09	.	4	37.005	23 34.11	9.36	2.03	29 36.55	18 45.56
48	9	. .	. .	. .	. .	. .	5.	. .	29 32.39	18.79	1.16	.	5	44.575	14 37.39	9.34	0.96	29 52.34	9 47.69
49	9	4.	21.8	38.	54.8	. .	. .	. .	20 31 54.65	+18.78	+1.09	IV.	3	36.740	−22 57.08	− 9.14	− 2.07	20 32 14.52	−19 18 8.29

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 1,		. .	. .	. .	. .	. .	359 59 60.81	30.0101

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 199	Aug. 31, 0 40	69 32 {34.3 / 35.	29.1 / 30.	35.2 / 35.5	30.8 / 31.5	25.7 / 27.1	29.8 / 30.2	31.18	29.790	75.5	72.2	75.2	74.7	76.
	0 50	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.2			
Zone 200	Sept. 1, 19 0	68 17 {31. / 32.3	24.9 / 25.3	31.8 / 33.	24.8 / 26.	20.8 / 22.	26. / 27.2	27.09						
	19 13	. .	. .	. .	. .	. .	. .	. .	29.950	78.5	71.7			
	19 40	. .	. .	. .	. .	. .	. .	. .	29.956	77.8	71.1			
	26 0	. .	. .	. .	. .	. .	. .	. .	29.964	77.2	70.8			
	20 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.3			

REMARKS.

(200) 12. Transit over T. V assumed as recorded over T. VI.

(200) 22. Transit over T. VI assumed to have been recorded as over T. VII.

(200) 43. Transit over T. VI assumed as recorded over T. VII.

(200) 47. Micrometer reading assumed as $36^r.005$ instead of $37^r.005$.

(200) 49. Time of transit over T. I assumed as 6^s instead of 4^s.

ZONE 200. SEPTEMBER 1. S. $D_0 = -18° 55' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1870.0.
									h. m. s.	s.	s.			r	′ ″	″	″	h. m. s.	° ′ ″
50	10	. .	49.	. .	22.	. .	. .	. .	20 33 21.86	+18.77	+1.15	IV.	4	41.650	−12 26.27	− 9.02	− 0.63	20 33 41.78	−19 7 35.92
51	10	. .	. .	. .	. .	. .	13.5	. .	34 40.89	18.77	1.18	.	4	44.580	14 36.25	8.91	0.96	35 0.84	9 46.12
52	10	. .	2.	18.	34.5	. .	. .	. .	37 34.53	18.75	1.10	IV.	3	33.910	25 54.61	8.65	2.45	37 54.38	21 5.71
53	9	. .	. .	14.	. .	46.5	. .	. .	38 30.35	18.75	1.20	.	4	44.402	14 47.11	8.58	0.98	38 50.30	9 56.67
54	10	. .	. .	. .	. .	. .	53.	. .	39 20.33	18.74	0.89	.	2	7.610	53 18.98	8.52	6.20	39 39.96	48 33.70
55	10	. .	43.5	. .	. .	. .	. .	. .	43 16.38	18.73	1.00	.	2	17.709	42 45.09	8.17	4.74	43 36.11	37 58.00
56	8	. .	. .	. .	28.	. .	0.	. .	43 27.65	18.73	1.17	IV.	3	36.720	22 58.34	8.14	2.07	43 47.55	18 8.55
57	8	. .	. .	. .	39.5	. .	. .	. .	44 39.44	18.72	0.98	.	2	15.190	45 23.62	8.05	5.09	44 59.14	40 36.76
58	8	. .	. .	. .	. .	30.	. .	. .	45 13.54	18.72	1.03	.	2	21.592	38 42.18	8.00	4.19	45 33.29	33 54.37
59	7	. .	. .	. .	. .	11.	27.5	. .	45 54.80	18.72	1.15	.	3	33.450	26 23.50	7.94	2.52	46 14.67	21 33.96
60	9	. .	. .	. .	. .	. .	25.5	. .	46 52.89	18.71	1.26	.	4	45.348	13 48.10	7.86	0.85	47 12.86	8 56.81
61	8.9	. .	39.5	. .	. .	. .	. .	. .	50 12.35	18.70	1.10	III.	3	25.998	34 11.19	7.58	3.57	50 32.15	29 22.34
62	6.7	. .	. .	28.5	. .	1.	17.	. .	50 44.61	18.70	1.04	.	2	18.810	41 36.23	7.54	4.59	51 4.45	36 48.36
63	10	. .	. .	. .	35.5	. .	8.5	. .	52 35.65	18.69	1.11	IV.	3	25.309	34 54.48	7.39	3.67	52 55.45	30 5.54
64	9	. .	. .	8.	24.	40.	. .	. .	55 24.03	18.68	1.33	IV.	4	47.319	11 44.26	7.16	0.57	55 44.04	6 51.99
65	9	. .	45.5	. .	. .	. .	. .	. .	58 18.33	18.67	1.25	.	3	36.849	22 50.37	6.93	2.06	58 38.25	17 59.36
66	7	. .	. .	40.	56.	13.	. .	. .	20 58 56.29	18.66	1.05	IV.	2	14.712	45 53.59	6.88	5.18	20 59 16.00	41 5.65
67	9	. .	. .	. .	1.5	34.5	. .	. .	21 0 18.00	18.66	1.25	.	3	35.149	24 37.00	6.77	2.27	21 0 37.91	19 46.04
68	9	. .	53.	9.3	25.5	. .	. .	. .	9 25.63	18.62	1.32	IV.	3	35.102	23 37.20	6.06	2.28	9 45.57	18 45.54
69	9.10	. .	59.5	15.	. .	48.5	. .	. .	11 31.94	18.61	1.20	III.	2	21.543	38 45.01	5.90	4.22	11 51.75	33 55.13
70	9	. .	. .	42.5	. .	15.	. .	. .	12 58.76	18.61	1.31	III.	3	32.902	26 57.91	5.79	2.59	13 18.68	22 6.29
71	10	. .	39.5	. .	12.	. .	. .	. .	16 12.12	18.59	1.22	IV.	2	19.843	40 31.63	5.56	4.47	16 31.93	35 41.66
72	9	. .	. .	. .	58.5	14.5	31.	. .	16 58.33	18.59	1.41	IV.	3	40.842	18 39.59	5.50	1.47	17 18.33	13 46.56
73	8	. .	. .	. .	. .	. .	50.5	. .	18 17.85	18.58	1.18	.	2	13.620	47 2.14	5.40	5.36	18 37.61	42 12.90
74	7	. .	42.	. .	16.	. .	48.	. .	21 15.41	18.57	1.14	IV.	2	8.042	52 51.77	5.18	6.17	21 35 12	48 3.12
75	10	. .	33.	. .	6.	. .	. .	. .	24 5.86	18.56	1.46	IV.	4	40.112	19 16.50	4.98	1.57	24 25.88	14 23.05
76	9	. .	. .	. .	30.5	. .	3.	. .	24 30.39	18.56	1.48	IV.	4	41.758	18 35.84	4.95	1.47	24 50.43	13 42.26
77	8	. .	17.	33.5	49.5	6.5	. .	. .	26 49.80	18.55	1.38	IV.	3	28.989	31 3.43	4.79	3.14	27 9.73	26 11.36
78	7	. .	0.	16.	32.5	. .	. .	. .	28 16.13	18.55	1.40	IV.	3	30.450	29 31.95	4.66	2.94	28 36.08	24 39.55
79	8	. .	. .	. .	. .	. .	11.5	. .	28 38.88	18.55	1.56	.	5	47.742	11 18.48	4.66	0.46	28 58.99	6 23.60
80	9	. .	. .	. .	. .	16.	32.5	. .	29 59.80	18.54	1.44	.	3	33.712	26 6.85	4.56	2.48	30 19.78	21 13.89
81	8	. .	20.5	37.	53.5	. .	. .	. .	31 53.39	18.54	1.33	IV.	2	21.120	39 11.65	4.44	4.28	32 13.26	34 20.37
82	4	. .	24.5	41.	57.5	. .	. .	. .	33 57.06	18.53	1.36	IV.	2	22.569	37 40.83	4.29	4.07	34 16.95	32 49.19
83	10	. .	40.	. .	. .	29.	. .	. .	35 12.76	18.52	1.52	V.	3	38.383	21 13.92	4.21	1.79	35 32.80	16 19.92
84	10	. .	40.5	. .	. .	. .	. .	. .	38 13.33	18.51	1.64	.	4	48.845	10 7.64	4.01	0.30	38 33.48	5 11.95
85	10	. .	. .	. .	1.5	. .	34.	. .	39 1.40	18.51	1.42	IV.	2	24.260	35 54.82	3.95	3.84	39 21.33	31 2.61
86	8	. .	. .	. .	. .	. .	. .	. .	40	. .	. .	.	4	49.150	9 58.50	3.88	0.26	. . .	5 2.64
87	6	. .	29.5	. .	2.	. .	. .	. .	43 2.10	18.50	1.54	IV.	3	35.660	24 4.93	3.68	2.20	43 22.14	19 10.81
88	10	. .	59.	. .	32.	. .	. .	. .	48 31.84	18.48	1.54	IV.	3	29.658	30 21.52	3.33	3.06	48 51.86	25 27.91
89	9	. .	. .	. .	. .	57.	13.	. .	48 40.45	18.48	1.43	V.	2	19.000	41 24.69	3.32	4.58	49 0.36	36 32.59
90	10	. .	. .	. .	. .	6.	22.5	. .	49 49.80	18.47	1.57	V.	3	33.345	21 16.36	3.25	1.95	50 9.84	16 21.56
91	8	. .	41.	57.5	. .	. .	. .	. .	57 13.86	18.45	1.60	III.	3	31.295	28 39.06	2.79	2.82	57 33.91	23 44.67
92	10	. .	. .	. .	. .	36.	52.5	. .	21 57 19.68	18.45	1.48	V.	1	16.119	44 25.42	2.78	4.99	21 57 39.61	39 33.19
93	5	. .	53.	9.5	25.5	. .	. .	. .	22 0 25.72	18.44	1.71	IV.	4	39.362	20 3.69	2.59	1.67	22 0 45.87	15 7.95
94	9	. .	. .	. .	. .	49.	5.	. .	22 0 32.56	+18.44	+1.72	V.	4	41.400	−17 55.91	− 2.57	− 1.37	22 0 52.72	−19 12 59.85

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 200	Sept. 1, 20 20	. .	. .	. .	. .	. .	. .	. .	29.970	76.2	68.9			
	21 0	. .	. .	. .	. .	. .	. .	. .	29.972	76.	68.3[a]	. .	. .	. .
	21 20	. .	. .	. .	. .	. .	. .	. .	. . .	. .	67.6			
	22 0	68 17 {30.2 31.2	26.4 25.6	32. 33.4	26.8 27.0	20.8 21.8	25.2 26.8}	27.27	. . .	. .	69.			

REMARKS.

(200) 50. Micrometer reading assumed as $46^r.650$, not $41^r.650$.

(200) 58. Declination differs 25″ from Arg. Z. 243, 111; perhaps micrometer reading should be $21^r.992$, not $21^r.592$.

(200) 67. Transit over T. III assumed to be recorded as over T. IV.

(200) 68. Micrometer reading assumed as $36^r.102$ instead of $35^r.102$.

(200) 76. Micrometer reading assumed as $40^r.758$ instead of $41^r.758$.

(200) 78. Transits over T.'s III, IV, and V assumed as recorded over T.'s II, III, and IV.

(200) 90. Micrometer reading assumed as $38^r.345$, not $33^r.345$.

[a]Assumed as 68.3.

ZONE 201. SEPTEMBER 1. S. $D_0 = -20° 10' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	39.5	. .	12.5	. .	. .	. .	23 12 12.52	+18.26	+0.60	IV.	2	19.690	−40 41.29	− 2.48	− 5.03	23 12 31.38	−20 50 48.80
2	8	. .	43.5	. .	16.	32.	. .	. .	15 16.01	18.26	0.72	IV.	3	39.342	20 13.98	2.39	2.09	15 34.99	30 18.46
3	5	. .	. .	. .	. .	2.	18.5	. .	14 45.47	18.26	0.57	.	2	15.600	44 57.98	2.41	5.64	15 4.30	55 6.03
4	10	. .	10.5	. .	43.	. .	. .	. .	19 43.23	18.25	0.71	IV.	3	37.452	22 12.60	2.25	2.38	20 2.19	32 17.23
5	10	. .	. .	37.8	. .	11.	. .	. .	21 54.34	18.24	0.54	.	2	10.999	49 46.28	2.19	6.33	22 13.12	59 54.80
6	10	. .	. .	. .	. .	7.	23.	. .	22 50.36	18.24	0.78	V.	5	49.936	9 0.85	2.17	0.52	23 9.38	19 3.54
7	9	. .	. .	39.	. .	. .	. .	. .	24 55.58	18.24	0.57	.	2	15.795	44 45.31	2.12	5.61	25 14.39	20 54 53.04
8	10	. .	. .	. .	. .	45.	1.	. .	26 28.18	18.23	0.54	V.	2	10.879	49 53.89	2.07	6.35	26 46.95	21 0 2.31
9	10	. .	. .	24.5	. .	57.	. .	. .	29 40.82	18.23	0.73	V.	5	42.435	16 51.96	2.00	1.64	29 59.78	20 26 55.60
10	8	. .	5.5	. .	. .	. .	. .	. .	33 38.59	18.22	0.68	IV.	3	34.502	25 17.65	1.91	2.82	33 57.49	20 35 22.38
11	9	. .	. .	. .	38.	. .	11.	. .	33 38.02	18.22	0.53	.	2	10.756	50 1.54	1.91	6.37	33 56.77	21 0 9.82
12	10	. .	. .	22.	. .	55.	. .	. .	36 38.49	18.22	0.62	III.	3	25.469	34 44.56	1.84	4.16	36 57.33	20 44 50.56
13	10	. .	17.5	. .	. .	7.5	. .	. .	38 50.81	18.21	0.67	.	3	34.210	25 36.16	1.79	2.86	39 9.69	35 40.81
14	10	. .	. .	. .	56.	. .	. .	. .	40 55.87	18.21	0.68	IV.	3	35.390	24 21.99	1.76	2.68	41 14.76	34 26.43
15	8	. .	. .	39.	55.	12.	. .	. .	46 55.29	18.20	0.57	IV.	2	17.842	42 37.13	1.66	5.31	47 14.06	20 52 44.10
16	8	. .	16.5	33.	49.	55.	. .	. .	50 49.26	18.19	0.52	IV.	4	10.142	50 36.53	1.60	6.46	51 7.97	21 0 44.59
17	7	. .	. .	. .	. .	38.5	54.8	. .	51 21.90	18.19	0.58	V.	2	19.000	41 24.69	1.60	5.13	51 40.67	20 51 31.42
18	5	. .	22.5	. .	57.	13.	. .	. .	54 56.31	18.19	0.56	IV.	2	17.480	43 0.07	1.56	5.36	55 15.06	53 6.99
19	10	. .	. .	. .	36.	. .	. .	. .	23 56 35.89	18.19	0.77	.	5	52.480	6 21.38	1.53	0.15	23 56 54.85	16 23.06
20	10	. .	40.	. .	12.5	. .	. .	. .	0 2 12.76	18.18	0.58	IV.	2	21.268	39 2.51	1.49	4.81	0 2 31.52	49 8.81
21	11	. .	. .	. .	51.5	. .	. .	. .	3 51.37	18.18	0.68	.	3	37.325	22 20.57	1.48	2.38	4 10.23	20 32 24.43
22	6	. .	. .	. .	47.	. .	19.	. .	8 46.51	18.17	0.51	.	2	8.269	52 37.66	1.45	6.79	9 5.19	21 2 45.90
23	11	. .	18.	. .	52.	. .	. .	. .	11 51.48	18.17	0.70	IV.	4	41.310	18 1.43	1.44	1.78	12 10.35	20 28 4.65
24	8	. .	. .	. .	58.	. .	. .	. .	12 57.88	18.17	0.60	.	3	24.610	35 38.18	1.44	4.29	13 16.65	45 43.91
25	5	. .	. .	. .	22.	8.5	25.	. .	14 51.97	18.17	0.55	IV.	2	17	43	1.44	. .	14 10.69	53
26	9	. .	. .	47.	. .	. .	. .	. .	17 3.53	18.16	0.59	.	3	23.825	36 27.44	1.44	4.43	17 22.28	46 33.31
27	7	. .	11.	. .	44.	. .	17.	. .	17 44.05	18.16	0.59	IV.	3	24.390	35 52.12	1.44	4.34	18 2.80	45 57.90
28	5.6	. .	28.5	45.	2.	. .	. .	. .	20 44.95	18.16	0.52	IV.	2	12.843	47 50.62	1.44	6.09	20 3.63	57 58.15
29	10	. .	58.	. .	30.5	. .	. .	. .	22 30.73	18.16	0.63	IV.	3	29.294	30 44.48	1.45	3.60	22 49.52	40 49.53
30	11	. .	. .	35.	. .	. .	1.	. .	24 51.51	18.16	0.64	.	3	31.600	28 19.87	1.46	3.25	25 10.31	38 24.58
31	10	. .	. .	. .	. .	. .	1.	. .	25 28.11	18.16	0.75	.	5	49.468	9 30.29	1.47	0.57	25 47.02	19 32.33
32	10	. .	51.	. .	. .	. .	. .	. .	29 24.09	18.15	0.67	.	3	37.158	22 31.17	1.49	2.41	29 42.91	32 35.07
33	8	. .	. .	. .	. .	50.	6.5	. .	29 33.61	18.15	0.72	V.	4	45.703	13 25.63	1.49	1.14	29 52.48	23 28.26
34	9	. .	. .	6.	22.5	39.	. .	. .	31 22.45	18.15	0.53	IV.	2	15.832	44 43.18	1.51	5.63	31 41.13	54 50.32
35	10	. .	. .	35.	. .	24.5	. .	. .	34 51.61	18.15	0.69	V.	4	42.079	17 13.17	1.55	1.67	35 10.45	27 16.39
36	10	. .	2.	. .	34.5	. .	. .	. .	38 34.80	18.15	0.53	IV.	2	15.645	44 55.04	1.58	5.66	38 53.48	55 2.28
37	9	. .	. .	. .	33.5	. .	. .	. .	39 33.40	18.15	0.58	.	.	23.350	36 51.90	1.59	4.50	39 52.13	46 57.99
38	8	. .	14.5	. .	47.	. .	. .	. .	44 47.24	18.15	0.60	IV.	3	27.549	32 33.90	1.68	− 3.84	45 5.99	42 39.42
39	8	. .	13.5	. .	46.3	. .	. .	. .	48 46.39	18.15	0.76	IV.	5	53.340	5 28.16	1.75	+ 0.01	49 5.30	15 29.90
40	6	. .	27.8	. .	0.5	17.	. .	. .	51 0.62	18.14	0.69	IV.	4	43.702	15 31.10	1.81	− 1.43	51 19.45	25 34.34
41	7	. .	25.5	. .	59.	15.	. .	. .	52 58.65	18.14	0.53	IV.	2	16.623	43 53.70	1.85	5.51	53 17.32	54 1.06
42	8	. .	51.	7.6	. .	40.	. .	. .	54 23.94	18.14	0.67	III.	4	40.860	18 29.20	1.90	1.85	54 42.75	28 32.95
43	8	. .	59.8	. .	33.	49.	. .	. .	57 32.75	18.14	0.61	IV.	3	30.450	29 31.95	1.98	3.42	57 51.50	39 37.35
44	8	. .	. .	19.5	. .	53.	. .	. .	0 58 36.22	+18.14	+0.54	.	2	18.690	−41 43.82	− 2.01	− 5.20	0 58 54.90	−20 51 51.03

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 201	Sept. 1, [a]23 10	69 32 29.4 30.8 29. 29.4	26.5 26.8 25.2 25.	30.8 32. 31. 31.5	26.8 27.2 26. 26.2	21.2 22.2 20. 21.2	25.8 26.5 23.5 24.4	27.17 26.03	29.980	74.2	66.4			
	23 56	. .	. .	. .	. .	. .	. .	. .	29.978	73.8	66.7			
	0 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.7			
	0 40	. .	. .	. .	. .	. .	. .	. .	29.984	72.8	64.9			
	1 0	. .	. .	. .	. .	. .	. .	. .	29.986	72.9	63.9			

REMARKS.

(201) 25. Time of transit over T. IV assumed as 52^s instead of 22^s, and minutes as 13, not 14.

(201) 28. Transits over T.'s III, IV, and V assumed as recorded over T.'s II, III, and IV.

(201) 34. Declination differs 1′ from Arg. Z.

(201) 35. Transit over T. VI assumed to have been recorded as over T. V.

[a]The second set of double readings given for $23^h\ 10^m$ is assumed to belong to $1^h\ 0^m$, making the mean for the former hour 27.16 and for the latter 26.03.

ZONE 202. SEPTEMBER 2. C. $D_0 = -23° 55' 10''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	26.2	. .	0.1	. .	. .	19 31 43.32	+18.40	+0.92	IV.	5	54.814	− 3 54.64	−18.57	− 6.01	19 32 2.64	−23 59 29.22
2	9	. .	. .	. .	. .	30.3	. .	. .	33 13.15	18.39	0.32	V.	2	12.886	47 48.04	18.42	12.76	33 31.86	24 43 29.22
3	10	. .	. .	29.5	46.3	. .	20.	. .	37 46.33	18.36	0.94	IV.	5	48.800	10 12.22	17.95	6.94	38 5.63	5 47.11
4	9	. .	. .	. .	36.	. .	. .	. .	40 35.89	18.35	0.91	IV.	5	49.221	9 45.99	17.66	6.91	40 55.15	5 20.56
5	9	. .	. .	25.?	42.3	59.5	. .	. .	42 42.22	18.34	1.31	IV.	2	7.648	53 16.48	17.45	13.63	43 1.87	48 57.56
6	8	8.3	25.	42.	59.	15.8	32.7	. .	44 58.94	18.33	1.00	IV.	3	36.735	22 57.39	17.22	8.92	45 18.27	18 33.53
7	9	. .	. .	. .	50.7	7.4	24.5	. .	45 50.61	18.32	0.99	V.	3	37.527	22 7.83	17.13	8.76	46 9.92	17 43.72
8	9	. .	. .	6.7	41.	57.8	. .	. .	47 40.80	18.31	1.23	IV.	2	12.627	48 4.30	16.94	12.81	48 0.34	43 44.05
9	9	. .	. .	44.2	0.7	. .	. .	. .	51 0.88	18.30	1.00	III.	3	33.837	25 59.33	16.61	9.39	51 20.18	21 35.33
10	9	. .	. .	. .	8.4	25.5	42.4	. .	55 8.50	18.27	0.99	V.	3	31.563	28 21.81	16.21	9.75	55 27.76	23 57.77
11	8.9	. .	. .	6.	22.8	39.7	56.6	. .	58 22.83	18.26	0.92	IV.	3	36.688	23 0.36	15.90	8.92	58 42.01	18 35.18
12	9	. .	. .	. .	. .	36.9	53.5	. .	19 59 19.91	18.25	0.75	V.	5	53.316	5 28.82	15.80	6.25	19 59 38.91	1 0.87
13	9	. .	. .	. .	. .	. .	44.2	. .	20 2 10.39	18.24	1.11	VI.	2	16.223	44 18.97	15.53	12.25	20 2 29.74	39 56.75
14	9	. .	. .	38.7	45.2	12.3	. .	. .	6 55.40	18.21	0.86	IV.	3	37.867	21 46.30	15.07	8.72	7 14.47	17 20.09
15	8.9	. .	5.6	22.8	39.5	. .	13.2	. .	9 39.55	18.20	0.88	IV.	3	33.938	25 52.85	14.81	9.37	9 58.63	21 27.03
16	10	. .	. .	21.8	38.	. .	12.2	. .	14 38.38	18.17	1.01	IV.	2	17.637	42 50.11	14.34	12.01	14 57.56	38 26.46
17	10	. .	. .	. .	. .	. .	2.	. .	15 28.16	18.17	1.07	VI.	2	12.141	48 34.89	14.26	12.91	15 47.40	44 12.06
18	9	. .	27.8	44.3	1.3	18.7	35.8	. .	18 1.60	18.16	1.14	IV.	2	6.176	54 48.81	14.02	13.90	18 20.90	50 26.73
19	8.9	. .	. .	. .	30.8	. .	4.9	. .	19 30.92	18.15	0.89	VI.	3	27.273	32 50.65	13.88	10.43	19 49.96	28 24.96
20	8	. .	. .	. .	. .	32.?	. .	. .	19 14.90	18.15	0.99	V.	2	17.058	43 26.48	13.90	12.10	19 34.04	39 2.48
21	10	. .	. .	. .	. .	32.	. .	. .	23 15.02	18.13	0.87	V.	3	27.520	32 35.47	13.54	10.40	23 34.02	28 9.41
22	9	. .	44.1	1.	18.	34.9	. .	. .	26 18.06	18.11	0.60	IV.	5	51.532	7 20.90	13.26	6.48	26 36.77	2 50.64
23	10	. .	. .	. .	. .	. .	57.?	. .	26 23.28	18.11	0.81	VI.	3	30.976	28 58.13	13.25	9.84	26 42.20	24 31.22
24	8	. .	18.2	35.5	52.8	9.9	26.4	. .	28 52.58	18.10	0.98	IV.	2	11.529	49 13.20	13.02	13.02	29 11.66	44 49.24
25	8	6.3	22.8	40.	56.	13.	29.8	. .	30 56.46	18.09	0.74	IV.	3	36.153	23 34.05	12.83	9.00	31 15.29	19 5.88
26	8.9	. .	. .	. .	. .	. .	43.2	. .	31 9.40	18.09	0.92	VI.	2	18.116	42 20.19	12.82	11.92	31 28.41	24 37 54.93
27	9	. .	57.2	. .	31.	47.5	. .	. .	34 30.93	18.07	0.54	IV.	5	54.936	3 46.98	12.52	5.96	34 49.54	23 59 15.46
28	8	. .	. .	51.3	8.3	25.3	42.2	. .	37 8.34	18.06	0.66	IV.	3	39.128	20 27.32	12.29	8.52	37 27.06	24 15 58.13
29	9.10	. .	. .	. .	. .	. .	38.	. .	37 4.26	18.06	0.70	VI.	3	34.948	24 48.91	12.30	9.19	37 23.02	20 20.40
30	9	. .	. .	. .	. .	58.9	15.7	. .	38 42.00	18.05	0.52	V.	5	53.054	5 45.53	12.15	6.22	39 0.57	1 13.90
31	9	. .	12.5	29.5	. .	. .	. .	. .	43 46.60	18.03	0.90	III.	2	9.911	50 54.38	11.72	13.31	44 5.53	46 29.41
32	8	. .	. .	. .	. .	10.5	27.1	. .	43 53.47	18.03	0.65	V.	3	34.789	24 59 20	11.71	9.24	44 12.15	20 30.15
33	8	. .	. .	. .	. .	10.3	27.3	. .	44 53.24	18.02	0.96	V.	2	5.998	54 59.97	11.64	13.93	45 12.22	50 35.54
34	8.9	. .	. .	54.3	11.3	28.5	45.3	. .	48 11.39	18.01	0.70	IV.	3	30.442	29 32.45	11.34	9.94	48 30.10	25 3.73
35	10	. .	. .	35.8	. .	. .	26.2	. .	50 52.64	18.00	0.55	IV.	4	42.328	16 57.54	11.11	8.00	51 11.19	12 26.65
36	8.9	. .	55.	11.5	. .	46.	. .	. .	20 59 28.84	17.95	0.83	IV.	2	8.122	52 46.75	10.40	13.57	20 59 47.62	48 20.72
37	8	. .	. .	. .	. .	27.3	44.	. .	21 0 10.33	17.95	0.50	V.	4	40.986	18 21.79	10.35	8.20	21 0 28.78	13 50.34
38	9	. .	. .	43.5	0.1	. .	34.1	. .	3 0.29	17.94	0.77	IV.	2	12.357	48 21.35	10.13	12.90	3 19.00	43 54.38
39	9.10	. .	. .	28.2	. .	2.3	. .	. .	9 45.26	17.91	0.56	IV.	3	29.461	30 34.00	9.61	10.07	10 3.73	26 3.68
40	9.10	. .	. .	. .	. .	32.2	. .	6.3	10 32.32	17.90	0.53	V.	3	31.512	28 25.01	9.56	9.76	10 50.75	23 54.33
41	8	27.	43.4	0.9	17.5	34.7	51.3	. .	15 17.60	17.88	0.43	IV.	3	38.637	20 58.11	9.19	8.59	15 35.91	16 25.89
42	8	. .	17.3	34.2	51.	8.1	25.	. .	16 51.14	17.87	0.54	IV.	3	27.682	32 25.44	9.08	10.38	17 9.55	27 54.90
43	8.9	. .	. .	11.3	28.1	45.	2.4	. .	18 28.26	17.87	0.40	IV.	4	39.072	20 21.71	8.96	8.52	18 46.53	15 49.19
44	7.8	31.	47.2	. .	21.3	38.3	55.2	. .	26 21.35	17.83	0.27	IV.	5	47.385	11 41.52	8.40	7.16	26 39.45	7 7.08
45	9	. .	14.6	31.9	48.8	5.5	22.	. .	28 48.60	17.82	0.41	IV.	3	33.395	26 27.19	8.22	9.46	29 6.83	21 54.87
46	9.10	. .	14.3	32.	49.	. .	. .	. .	31 48.76	17.81	0.52	III.	2	20.799	39 31.48	8.03	11.52	32 7.09	35 1.03
47	7.8	. .	54.2	. .	28.2	45.4	2.5	. .	34 28.33	17.80	0.65	IV.	2	7.048	53 54.09	7.85	13.79	34 46.78	49 25.73
48	9.10	. .	46.	. .	19.9	. .	. .	. .	39 19.98	17.77	0.64	II.	2	11.375	49 22.42	7.54	13.07	39 38.39	24 44 53.03
49	7.8	. .	58.8	16.7	32.7	49.	6.2	. .	21 42 32.77	+17.76	+0.10	IV.	5	56.095	− 2 34.33	− 7.34	− 5.75	21 42 50.63	−23 57 57.42

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 2,		. .	. .	. .	. .	. .	359 59 62.47	30.0105

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 202	Sept. 2, 19 34	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.8	75.4	74.3	76.
	19 40	73 17 {33.7 35.1	28.3 27.5	33.9 34.4	29.8 30.4	23.9 24.8	26.2 27.7	29.64	30.080	75.8	69.2			
	20 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	68.8			
	20 20	. .	. .	. .	. .	. .	. .	. .	30.076	75.	68.3			
	20 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.8			
	20 50	{33.4 34.9	28.3 27.9	32.8 33.1	30. 30.7	23.2 24.	25.6 26.8	29.22	. .	. .	. .	74.	72.2	
	21 0	. .	. .	. .	. .	. .	. .	. .	30.076	74.	67.4			

REMARKS.

(202) 8. Transit over T. II assumed to have been recorded as over T. III.

(202) 14. Time of transit over T. IV assumed as 55ˢ.2 instead of 45ˢ.2.

(202) 40. Transits over T.'s IV and VI assumed as recorded over T.'s V and VII.

ZONE 202. SEPTEMBER 2. C. $D_\circ$ = 23° 55′ 10″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	23.5	40.8	57.	14.	. .	21 46 40.44	+17.74	+0.12	IV.	5	54.365	− 4 23.02	− 7.09	− 6.04	21 46 58.30	−23 59 46.15
51	9	. .	. .	8.2	. .	42.7	59.7	. .	50 25.59	17.73	0.41	III.	2	19.603	40 46.62	6.87	11.73	50 43.73	24 36 15.22
52	8.9	. .	57.1	. .	30.9	. .	4.5	. .	50 30.89	17.73	0.38	IV.	2	22.901	37 19.82	6.86	11.16	50 49.00	32 47.84
53	9	. .	. .	. .	. .	. .	30.	. .	51 56.21	17.72	0.00	VI.	5	53.502	5 16.96	6.79	6.17	52 13.93	0 39.92
54	8.9	. .	. .	. .	27.7	44.5	1.5	. .	53 27.64	17.71	0.22	V.	3	35.011	24 45.33	6.71	9.17	53 45.57	20 11.21
55	9.10	. .	. .	18.3	. .	. .	. .	. .	56 35.36	17.70	0.12	III.	4	44.944	14 12.85	6.54	7.57	56 53.18	9 36.96
56	9.10	. .	. .	. .	. .	13.	. .	. .	56 56.11	17.70	0.16	V.	3	39.592	19 57.90	6.52	8.44	57 13.97	15 22.86
57	8.9	. .	. .	15.	31.8	48.9	. .	. .	21 59 31.85	17.69	0.26	IV.	3	27.748	32 21.29	6.38	10.37	21 59 49.87	27 48.04
58	8	. .	. .	29.2	45.8	3.	19.5	. .	22 0 45.92	17.68	0.59	IV.	3	31.807	28 6.57	6.33	9.69	22 1 3.19	23 32.59
59	9.10	. .	. .	. .	. .	. .	22.5	. .	1 48.76	17.68	0.53	VI.	4	37.728	21 46.12	6.28	8.74	2 6.97	17 11.14
60	8	. .	. .	48.	4.9	21.9	. .	. .	22 6 4.88	+17.66	+0.75	IV.	2	11.442	−49 18.72	− 6.07	−13.09	22 6 23.29	−24 44 47.88

ZONE 203. SEPTEMBER 7. C. $D_\circ$ = −21° 25′ 0″.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	19.3	. .	21 3 46.15	+15.75	+0.32	VI.	5	47.062	−12 1.21	−15.21	− 7.40	21 4 2.22	−21 37 23.82
2	9	. .	. .	7.	23.3	40.3	. .	. .	6 23.49	15.74	0.30	IV.	3	30.626	29 20.79	14.96	9.91	6 39.53	21 54 44.66
3	9	. .	. .	. .	. .	18.2	34.9	. .	7 1.62	15.74	0.29	V.	3	22.257	38 5.61	14.90	11.20	7 17.65	22 3 31.71
4	9	. .	33.3	. .	. .	. .	. .	. .	9 6.67	15.72	0.30	II.	3	32.518	27 22.32	14.68	9.62	9 22.69	21 52 46.62
5	9	. .	35.5	51.8	8.2	41.	. .	. .	9 8.32	15.72	0.30	IV.	3	32.656	27 13.42	14.67	9.60	9 24.34	52 37.69
6	6	. .	49.3	6.	21.3	38.	. .	. .	15 22.06	15.70	0.32	IV.	5	54.892	3 49.74	14.04	6.21	15 38.08	29 9.99
7	8	. .	1.7	18.3	34.3	. .	. .	. .	17 34.76	15.68	0.31	III.	4	45.869	13 14.77	13.83	7.58	17 50.75	38 36.18
8	7	. .	. .	11.5	28.	44.6	1.3	. .	18 28.06	15.68	0.29	IV.	3	34.687	25 5.92	13.73	9.30	18 44.03	50 28.95
9	9.10	. .	8.1	24.8	. .	57.8	14.3	. .	23 41.36	15.66	0.31	IV.	4	47.753	11 16.90	13.24	7.30	23 57.33	36 37.44
10	9.10	. .	. .	. .	. .	56.3	. .	. .	24 39.66	15.65	0.29	V.	3	29.241	30 47.49	12.92	10.10	24 55.60	21 56 10.51
11	9	. .	25.5	42.1	59.3	15.4	. .	. .	27 58.90	15.64	0.28	IV.	2	15.832	44 43.18	12.81	12.19	28 14.82	22 10 8.18
12	10	. .	. .	. .	39.2	56.	. .	. .	41 39.20	15.58	0.29	V.	3	27.040	33 5.46	11.53	10.47	41 55.07	21 58 27.46
13	8	. .	26.3	. .	0.	16.3	33.2	. .	47 59.83	15.55	0.28	IV.	3	34.406	25 23.73	10.94	9.33	48 15.66	50 43.00
14	7	. .	32.2	49.1	5.2	22.1	38.6	. .	50 5.47	15.54	0.28	IV.	3	31.525	28 24.45	10.68	9.77	50 21.29	53 44.80
15	8	. .	29.3	46.3	3.2	. .	. .	. .	59 2.96	15.50	0.30	III.	5	54.772	3 57.22	9.98	6.23	59 18.76	21 29 13.43
16	8.9	. .	. .	. .	. .	. .	47.7	. .	21 59 14.46	15.50	0.26	VI.	2	6.988	53 57.91	9.96	13.55	21 59 30.22	22 19 21.42
17	9	. .	11.3	28.5	. .	. .	17.2	. .	22 1 44.65	15.49	0.29	IV.	4	41.131	18 12.54	9.76	8.30	22 2 0.43	21 43 30.60
18	7.8	. .	. .	. .	. .	. .	59.8	. .	2 26.70	15.49	0.28	VI.	3	27.477	32 37.85	9.68	10.39	2 42.47	57 57.92
19	9	. .	. .	56.3	13.	. .	. .	. .	4 12.96	15.48	0.30	III.	5	46.840	12 15.20	9.57	7.44	4 28.74	21 37 32.21
20	9	. .	. .	. .	. .	52.1	. .	. .	4 35.32	15.48	0.27	V.	2	17.174	43 19.27	9.53	11.98	4 51.07	22 8 40.78
21	8	. .	. .	. .	16.	. .	. .	. .	5 15.93	15.47	0.27	IV.	2	17.801	42 39.71	9.49	11.94	5 31.67	22 8 1.14
22	7.8	. .	. .	. .	44.2	1.2	17.2	. .	5 44.25	15.47	0.28	V.	3	35.975	23 44.83	9.44	9.08	6 0.00	21 49 3.35
23	9.10	. .	. .	. .	. .	. .	. .	. .	5	. .	0.29	VII.	4	43.466	15 46.13	9.43	7.83	(6)	21 41 3.39
24	9.10	. .	. .	. .	. .	. .	20.3	. .	6 47.18	15.47	0.27	VI.	3	24.402	35 50.75	9.37	10.86	7 22.92	22 1 10.98
25	9	. .	20.3	37.8	. .	. .	. .	. .	9 54.09	15.46	0.29	III.	4	39.725	19 40.47	9.18	8.51	10 9.84	21 44 58.16
26	8	. .	. .	. .	. .	19.2	35.5	. .	10 2.51	15.46	0.30	V.	5	54.803	3 55.26	9.10	6.22	10 18.27	29 10.58
27	6	. .	. .	. .	12.3	. .	46.	. .	26 12.50	15.39	0.29	VI.	5	55.485	3 12.45	8.02	6.12	26 28.18	28 26.59
28	8.9	. .	. .	. .	28.	. .	0.3	. .	27 27.52	15.39	0.28	VI.	3	42.208	17 13.42	7.95	8.14	27 43.19	42 29.51
29	8.9	. .	. .	. .	20.4	. .	54.	. .	28 20.58	15.38	0.27	VI.	3	33.192	26 39.22	7.89	9.50	28 36.23	51 56.61
30	9	. .	40.2	57.3	13.3	30.3	. .	. .	34 13.62	15.36	0.28	IV.	4	40.927	18 25.34	7.62	8.35	34 29.26	43 41.31
31	9	. .	. .	. .	. .	. .	59.	. .	34 25.90	15.36	0.27	VI.	3	27.678	32 25.12	7.61	10.43	34 41.53	57 43.16
32	8	. .	54.5	. .	27.3	44.	0.7	. .	38 27.52	15.35	0.29	IV.	5	49.407	9 34.31	7.29	6.96	38 43.16	34 48.36
33	9	. .	. .	. .	. .	20.3	37.	. .	39 3.80	15.35	0.27	V.	3	34.648	25 8.18	7.28	9.26	39 19.42	50 24.72
34	9.10	. .	. .	51.	. .	. .	40.3	. .	22 44 7.42	+15.33	+0.27	IV.	3	26.715	−33 26.09	− 7.10	−10.50	22 44 23.02	−21 58 43.69

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Sept. 7,		. .	. .	. .	. .	. .	359 59 63.37	30.0134

REMARKS.

(203) 5. Transit over T. VI assumed to have been recorded as over T. V.

(203) 24. Transit over T. VI assumed as 40ˢ.3, not 20ˢ.3, and minutes as 7, not 6.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 202	Sept. 2, 21 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.4			
	21 40	. .	. .	. .	. .	. .	. .	. .	30.082	73.	66.9			
	22 0	73 17 {33.2 33.9	28.5 27.9	33.2 34.	30.1 30.4	22.9 23.2	25.3 26.1	29.06	30.080	73.	66.0	73.3	71.	75.8
Zone 203	Sept. 7, 21 5	. .	. .	. .	. .	. .	. .	. .	30.180	67.1	56.5			
	21 20	70 47 {35.6 36.	34.2 31.2	37.4 37.4	35.1 35.7	27.1 27.3	30.5 31.1	33.50	30.179	66.8	56.1	66.3	64.3	72.
	21 40	. .	. .	. .	. .	. .	. .	. .	30.176	66.	55.9			
	22 0	. .	. .	. .	. .	. .	. .	. .	30.172	65.5	55.7			

ZONE 203. SEPTEMBER 7. C. $D_0 = -21° 25' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	9.10	. .	. .	54.3	. .	27.4	. .	. .	22 49 11.00	+15.31	+0.28	IV.	5	55.741	− 2 56.44	− 6.87	− 6.02	22 49 26.59	−21 28 9.33
36	10	. .	. .	. .	. .	52.3	. .	. .	50 35.74	15.31	0.27	V.	4	43.051	16 12.11	6.82	7.98	50 51.32	41 26.91
37	7	. .	54.2	11.	. .	44.	0.5	. .	22 54 27.52	15.29	0.27	IV.	4	44.175	15 1.48	6.70	7.83	22 54 43.08	40 16.01
38	4	21.3	37.8	54.2	10.8	27.4	44.5	. .	23 1 11.00	15.27	0.26	IV.	3	26.342	33 49.68	6.41	10.74	23 1 26.53	59 6.73
39	9.10	. .	. .	. .	36.3	. .	9.6	. .	2 36.33	15.27	0.27	VI.	3	35.202	24 33.09	6.38	9.20	2 51.87	21 49 48.67
40	9	. .	. .	6.	23.	. .	56.3	. .	8 22.91	15.25	0.26	IV.	2	25.325	34 48.02	6.17	10.70	8 38.42	22 0 4.89
41	8.9	. .	. .	20.3	. .	53.5	. .	. .	23 8 36.90	+15.25	+0.25	IV.	2	24.312	−35 51.57	− 6.16	−10.85	23 8 52.40	−22 1 8.58

ZONE 204. SEPTEMBER 18. C. $D_0 = -18° 17' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	11.5	28.	44.	0.2	16.5	. .	19 18 44.09	+10.81	+1.68	.	4	38.491	−20 58.30	−20.36	− 8.87	19 19 56.58	−18 38 47.53
2	8	. .	36.5	. .	9.2	25.3	41.5	. .	19 9.09	10.81	1.67	.	4	37.868	21 37.20	20.31	8.96	19 21.57	39 26.47
3	9	. .	40.3	56.8	13.2	. .	. .	. .	21 13.10	10.80	1.77	.	4	44.108	15 5.44	20.12	8.12	21 25.67	32 53.68
4	8	. .	. .	29.	45.3	1.7	. .	. .	21 45.34	10.80	1.70	.	4	39.376	20 2.81	20.08	8.75	21 57.84	37 51.64
5	9	. .	. .	. .	. .	. .	. .	. .	21	. .	1.79	.	5	45.019	14 18.	20.06	7.99		
6	9	. .	. .	. .	38.3	54.5	10.7	. .	24 38.18	10.78	1.39	.	3	22.358	37 59.59	19.81	11.01	24 50.35	18 55 50.41
7	9	. .	. .	43.5	0.	16.5	. .	. .	26 59.95	10.77	1.22	.	2	13.228	47 26.66	19.70	12.24	26 11.94	5 18.60
8	7	. .	. .	. .	29.2	45.8	. .	. .	27 29.21	10.76	1.12	.	2	7.966	52 56.47	19.55	12.95	27 41.09	10 48.97
9	9	. .	. .	. .	. .	9.2	25.5	. .	27 52.84	10.76	1.19	.	2	11.877	48 51.32	19.51	12.43	28 4.79	19 6 43.26
10	7.8	. .	. .	. .	. .	. .	. .	. .	28	. .	1.74	VII.	5	43.485	15 45.61	19.49	8.20	. . .	18 33 33.30
11	9	. .	. .	. .	. .	23.7	39.5	. .	36 7.24	10.72	1.77	.	5	46.588	12 31.14	18.75	7.77	36 19.73	18 30 17.66
12	8	. .	. .	7.3	24.2	40.	. .	. .	38 23.79	10.70	1.16	.	2	12.264	48 27.18	18.54	12.37	38 35.65	19 6 18.09
13	8.9	. .	. .	. .	. .	16.2	32.1	. .	38 59.78	10.70	1.50	.	3	31.618	28 18.30	18.48	9.78	39 11.98	18 46 6.56
14	9	. .	. .	25.	. .	57.3	13.5	. .	43 41.14	10.67	1.53	.	3	34.188	25 37.25	18.05	9.40	43 53.34	43 24.70
15	9	. .	. .	40.2	. .	12.3	. .	. .	47 56.34	10.65	1.68	.	4	43.848	20 35.32	17.67	8.82	48 8.67	38 21.81
16	9	. .	. .	. .	6.5	. .	29.2	. .	48 6.56	10.65	1.48	.	3	32.316	27 34.88	17.65	9.68	48 18.69	45 22.21
17	9	. .	. .	. .	. .	58.2	14.3	. .	49 41.88	10.64	1.45	.	3	30.881	29 4.41	17.50	9.88	49 53.97	46 51.79
18	9	. .	18.	34.2	50.8	. .	23.2	. .	51 50.66	10.62	1.52	.	3	35.813	23 55.20	17.31	9.21	52 2.80	41 41.72
19	9	. .	25.2	42.	. .	. .	. .	. .	54 58.15	10.61	1.63	.	4	42.948	16 18.55	17.01	8.25	55 10.39	34 3.81
20	8.9	. .	. .	. .	22.	. .	54.3	. .	54 21.86	10.61	1.55	.	3	37.987	21 38.83	17.07	8.91	54 34.02	18 39 24.81
21	9	. .	. .	53.5	. .	26.2	. .	. .	56 9.80	10.60	1.00	.	2	7.266	53 40.35	16.91	13.06	56 21.40	19 11 30.32
22	9.10	. .	. .	. .	. .	. .	41.8?	. .	57 9.26	10.60	1.05	.	2	10.371	49 54.62	16.83	12.64	57 20.91	7 44.09
23	9	. .	. .	. .	. .	. .	. .	. .	19 57	. .	1.07	VI.	2	10.916	49 51.58	. .	12.56	19 57	19 7
24	10	. .	. .	. .	54.5?	. .	. .	. .	19 59 54.39	10.58	1.74	IV.	5	48.806	10 11.84	16.56	7.46	20 0 6.71	18 27 55.86
25	9	. .	. .	. .	. .	. .	24.	. .	20 0 51.57	10.57	1.41	VI.	3	30.874	29 4.54	16.47	9.88	1 3.55	46 50.89
26	9	. .	. .	. .	. .	. .	3.2	. .	3 30.77	10.56	1.40	VI.	3	30.778	29 10.56	16.23	9.89	3 42.73	46 56.68
27	9	. .	. .	. .	51.3	8.2	. .	. .	4 51.52	10.55	1.33	V.	3	26.706	33 26.40	16.10	10.44	5 3.40	51 12.94
28	8.9	. .	. .	. .	38.3	. .	11.2	. .	5 38.44	10.55	1.64	VI.	4	44.271	14 55.70	16.04	8.05	5 50.63	32 39.79
29	8	. .	38.1	54.5	11.	27.2	43.5	. .	8 10.88	10.53	1.28	IV.	3	24.665	35 34.75	15.80	10.71	8 22.69	53 21.26
30	8.9	. .	. .	55.3	. .	28.1	44.2	. .	9 11.73	10.53	1.45	IV.	3	34.127	25 41.13	15.70	9.43	9 23.71	43 26.26
31	9.10	. .	. .	. .	. .	. .	28.8	. .	9 56.37	10.52	1.39	VI.	3	30.575	29 23.49	15.64	9.92	10 8.28	47 9.05
32	8.9	. .	32.5	48.3	. .	21.3	37.2	. .	12 4.92	10.51	1.56	IV.	4	39.709	19 41.72	15.44	8.66	12 16.99	37 25.82
33	8	. .	40.	. .	12.5	29.2	45.4	. .	12 12.73	10.51	1.38	IV.	3	30.182	29 48.71	15.43	9.97	12 24.62	47 34.11
34	8.9	. .	47.	3.5	20.	36.2	52.3	. .	14 19.83	10.50	1.35	IV.	3	28.808	31 14.73	15.23	10.15	14 31.68	49 0.11
35	9.10	. .	. .	. .	. .	2.3	18.5	. .	14 46.04	10.50	1.48	V.	3	35.937	23 47.22	15.19	9.19	14 58.02	41 31.60
36	9	. .	33.2	49.5	6.	. .	38.3	. .	17 5.88	10.48	1.19	IV.	2	20.013	40 21.03	14.98	11.35	17 17.55	58 7.36
37	9	. .	. .	. .	36.	52.2	8.2	. .	17 35.83	10.48	1.32	V.	3	26.768	33 22.50	14.94	10.44	17 47.63	51 7.88
38	6.7	. .	. .	. .	. .	48.2	4.3	. .	20 18 31.89	+10.48	+1.46	V.	4	35.385	−24 13.39	−14.85	− 9.27	20 18 43.83	−18 41 57.51

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
September 18,	. .	. .	. .	. .	. .	359 59 62.48	30.0150

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 203	Sept. 7,	22 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	55 6			
		22 20	70 47 {33.1 / 33.3}	33.1 / 32.6	36.2 / 36.1	33.5 / 34.	25.1 / 25.3	28. / 28.2	} 31.54	. .	. .	55.6	65.	62.2	
		22 40	. .	. .	. .	. .	. .	. .	. .	30.170	64.	55.6			
		23 0	{32.9 / 32.9}	33.2 / 32.9	36.0 / 36.0	34.1 / 34.5	25.4 / 25.3	27.6 / 27.8	} 31.55	30.168	63.5	55.6	64.5	61.5	71.2
Zone 204	Sept. 18,	19 20	67 39 64.1	60.3	64.2	62.4	48.6	59.2	59.80	. .	. .	61.6	65.	64.3	63.5
		19 30	. .	. .	. .	. .	. .	. .	. .	30.128	65.				
		19 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	59.9			

REMARKS.

(204) 7. Minutes assumed as 25, not 26.

(204) 14. Micrometer reading assumed as $34^r.188$, not $34^r.688$.

(204) 15. Micrometer reading assumed as $38^r.848$, not $43^r.848$.

(204) 16. Time of transit over T. VI assumed as $39^s.2$ instead of $29^s.2$.

(204) 19. Declination differs 1′ from Arg. Z. 252, 81.

(204) 22. Minutes assumed as 57, not 56, and micrometer reading as $10^r.871$, not $10^r.371$.

(204) 26. Declination differs 1′ from Arg. Z. 252, 96.

[(204) 5. Precedes 4.2^s or 3^s.]

ZONE 204. SEPTEMBER 18. C. $D_0 = -18° 17' 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
39	8	. .	. .	. .	14.2	. .	46.6	. .	20 20 14.08	+10.47	+1.85	VI.	5	56.602	− 4 7.78	−14.69	− 6.42	20 20 26.40	−18 21 48.89
40	9	. .	. .	. .	. .	21.2	47.	. .	21 4.61	10.46	1.07	V.	2	13.704	46 56.81	14.62	12.20	21 16.14	19 4 43.63
41	9	. .	. .	. .	. .	23.7	48.5	. .	21 6.60	10.46	1.07	VI.	2	13.892	46 45.39	14.61	12.18	21 18.13	19 4 32.18
42	9	. .	. .	. .	. .	55.	11.2	. .	22 38.74	10.45	1.56	V.	3	41.041	17 24.24	14.47	8.36	22 50.75	18 35 7.07
43	6	29.5	45.3	2.5	18.5	35.1	51.1	. .	31 18.48	10.41	1.48	IV.	3	37.570	22 5.12	13.77	8.96	31 30.37	39 47.85
44	10	. .	. .	. .	. .	0.5	. .	. .	32 44.29	10.40	1.63	V.	4	46.364	12 44.33	13.56	7.78	32 56.32	30 25.67
45	10	. .	. .	. .	. .	31.	. .	. .	33 14.83	10.39	1.73	V.	4	51.899	6 56.60	13.51	7.03	33 26.95	24 37.14
46	8	. .	. .	. .	. .	. .	28.	. .	33 55.53	10.39	1.49	VI.	3	38.745	20 50.70	13.45	8.80	34 7.41	38 32.95
47	9	. .	9.1	25.2	. .	58.2	14.2	. .	39 41.75	10.36.	1.37	IV.	3	32.702	27 10.47	12.93	9.62	39 53.48	44 53.02
48	9	. .	10.2	26.9	. .	59.3	15.3	. .	39 43.00	19.36	1.37	IV.	3	32.586	27 17.81	12.93	9.64	39 54.73	45 0.38
49	9	. .	. .	. .	. .	52.3	. .	. .	40 36.01	10.35	1.37	V.	3	32.436	27 27.10	12.85	9.66	40 47.73	45 9.61
50	7	. .	. .	. .	. .	. .	. .	. .	40	. .	1.53	VI.	4	41.858	17 27.14	12.85	8.39	. . .	35 8.38
51	7	. .	. .	51.2	. .	23.3	39.3	. .	46 7.17	10.32	1.62	IV.	5	47.462	11 36.41	12.37	7.62	46 19.11	18 29 16.40
52	9	. .	. .	. .	. .	18.	34.2	. .	47 1.58	10.32	0.94	V.	2	9.648	51 11.20	12.29	12.79	47 12.84	19 8 56.28
53	8	. .	49.2	5.3	22.	. .	. .	. .	55 21.80	10.27	1.39	III.	3	35.378	24 22.83	11.59	9.27	55 33.46	18 42 3.69
54	9	. .	. .	. .	. .	49.	4.8	. .	55 32.38	10.27	0.95	V.	2	11.618	49 7.69	11.57	12.50	55 43.60	19 6 51.76
55	8.9	. .	23.3	. .	56.	12.7	. .	. .	20 58 56.12	10.25	1.50	IV.	4	42.341	16 56.73	11.30	8.33	20 59 7.87	18 34 36.36
56	9.10	. .	10.6	27.	. .	59.8	15.7	. .	21 1 43.32	10.24	1.01	III.	2	14.460	46 9.28	11.07	12.12	21 1 54.57	19 3 52.47
57	9	. .	. .	. .	53.3	. .	26.2	. .	1 53.46	10.24	1.13	VI.	3	21.857	38 30.21	11.06	11.10	2 4.83	18 56 12.37
58	9	. .	21.4	. .	53.8	9.8	. .	. .	5 53.79	10.22	1.56	IV.	5	45.477	13 41.02	10.74	7.88	6 5.57	31 19.64
59	6	32.	. .	4.5	20.	37.1	53.1	. .	9 20.58	10.20	1.46	IV.	4	40.436	18 56.23	10.47	8.58	9 32.24	36 35.28
60	9.10	. .	. .	25.3	41.3	. .	. .	. .	17 41.38	10.16	1.27	III.	3	30.037	29 57.87	9.84	10.00	17 52.81	18 47 37.71
61	9	. .	. .	33.	49.7	. .	22.3	. .	27 49.60	10.10	1.00	IV.	2	14.716	45 53.23	9.14	12.08	28 0.70	19 3 34.45
62	8	15.7	. .	47.5	3.9	20.	. .	. .	29 47.70	10.10	0.95	IV.	2	12.035	48 41.41	9.05	12.46	28 58.75	19 6 22.92
63	9	. .	. .	. .	20.2	. .	. .	. .	37 20.07	10.06	1.39	IV.	4	37.079	22 26.78	8.51	9.03	37 31.52	18 40 4.32
64	8.9	. .	. .	. .	. .	13.8	. .	. .	37 57.55	10.05	1.45	V.	4	40.522	18 50.96	8.47	8.57	38 9.05	36 28.00
65	8	. .	. .	. .	14.3	30.8	47.3	. .	39 14.48	10.05	1.14	V.	3	23.638	36 38.93	8.39	10.86	39 25.67	18 54 18.18
66	8.9	. .	. .	. .	49.5	6.2	22.1	. .	40 49.58	10.04	0.96	V.	2	13.455	47 12.61	8.28	12.26	41 0.58	19 4 53.15
67	6	. .	. .	2.2	18.2	34.8	51.2	. .	48 18.48	10.00	1.44	IV.	4	40.567	18 47.94	7.83	8.57	48 29.92	18 36 24.34
68	9	. .	28.2	44.3	0.7	17.1	. .	. .	51 0.74	9.99	1.34	IV.	3	34.784	24 59.77	7.67	9.33	51 12.07	42 36.77
69	7	56.	12.2	28.2	44.8	. .	16.8	. .	53 44.63	9.98	1.43	IV.	3	39.882	19 39.84	7.53	8.64	53 56.04	37 16.01
70	9	. .	12.8	29.	45.2	. .	. .	. .	55 45.33	9.97	1.51	III.	4	44.552	14 37.64	7.42	8.01	55 56.81	32 13.07
71	9	. .	. .	11.3	. .	. .	. .	. .	59 27.66	9.95	1.38	III.	3	37.619	22 2.19	7.22	8.96	21 59 38.99	39 38.37
72	8.9	. .	. .	33.3	49.2	5.5	21.7	. .	21 59 49.31	9.95	1.48	IV.	4	43.096	16 9.20	7.20	8.21	22 0 0.74	33 44.61
73	9	. .	. .	54.	10.2	26.8	43.	. .	22 9 10.35	+ 9.90	+1.12	IV.	3	23.368	−36 56.23	− 6.71	−10.91	22 9 21.37	−18 54 33.85

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 204	Sept. 18,	20 0		. .	. .	. .	. .	. .	. .	30.130	64.7	58.7			
		20 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	57.9			
		20 40	63.7	60.3	65.2	63.1	49.3	59.	60.10	30.146	64.2	57.5	63.8	63.3	
		21 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	56.5			
		21 20	. .	. .	. .	. .	. .	. .	. .	30.152	63.5	55.3			
		21 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	54.5			
		22 0	63.7	60.7	65.1	63.5	49.3	58.4	60.12	30.146	63.	53.7	62.	60.3	63.5
		22 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	53.2			

REMARKS.

(204) 39. Micrometer reading assumed as 54ʳ.602, not 56ʳ.602.

(204) 40. Time of transit over T. VI assumed as 37ˢ instead of 47ˢ.

(204) 41. Time of transit over T. VI assumed as 38ˢ.5 instead of 48ˢ.5.

(204) 42. Micrometer reading assumed as 42ʳ.041, not 41ʳ.041.

(204) 43. Minutes of transit assumed as 31 instead of 30.

(204) 49. Declination differs 1′ from Arg. Arg. Z. 244, 95.

(204) 62. Transits over T.'s IV, V, and VI assumed to have been recorded as over T.'s III, IV, and V, and minutes as 28, not 29.

ZONE 205. OCTOBER 7. C. $D_0 = -16^\circ\ 24'\ 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	58.2	. .	. .	. .	. .	22 35 14.43	+ 4.77	+1.64	III.	4	43.288	−15 56.97	− 4.76	− 2.28	22 35 20.84	−16 40 54.01
2	9	. .	. .	. .	. .	. .	55.2	. .	35 23.71	4.77	1.34	VI.	3	29.718	30 17.31	4.75	4.04	35 29.82	16 55 16.10
3	9.10	. .	20.5	36.2	. .	. .	. .	. .	38 52.67	4.75	1.00	III.	2	13.719	46 55.70	4.55	6.15	38 58.42	17 11 56.40
4	8.9	. .	38.	. .	9.8	26.	42.	. .	39 9.94	4.75	1.34	IV.	3	29.058	30 59.16	4.53	4.13	39 16.03	16 55 57.82
5	9	. .	. .	. .	59.2	15.8	. .	. .	41 59.34	4.73	1.13	V.	3	19.151	41 20.49	4.38	5.42	42 5.20	17 6 20.29
6	10	. .	. .	17.3	33.	. .	. .	. .	45 33.18	4.71	1.23	III.	3	23.105	37 12.67	4.19	4.91	45 39.12	2 11.77
7	7	. .	10.2	26.3	42.2	58.5	15.	. .	46 42.47	4.70	1.19	IV.	3	21.427	38 57.98	4.13	5.13	46 48.36	17 3 57.24
8	6	. .	. .	. .	. .	. .	. .	. .	47	. .	1.75	VII.	5	46.992	12 5.61	4.10	1.79	47	16 37 1.50
9	10	. .	34.2	50.3	3.	. .	. .	. .	50 6.42	4.68	1.65	III.	4	41.878	17 25.22	3.96	2.46	50 12.75	16 42 21.64
10	9	. .	10.4	26.3	42.8	58.8	. .	. .	22 51 42.64	4.67	1.02	IV.	2	13.041	47 38.33	3.88	6.24	22 51 48.33	17 12 38.45
11	9.10	. .	30.2	46.5	2.8	18.9	. .	. .	23 2 2.66	4.61	1.31	IV.	3	25.178	35 2.64	3.41	4.64	23 2 8.58	0 0.69
12	9	. .	. .	. .	. .	. .	56.2	. .	3 24.06	4.61	1.24	IV.	3	21.704	38 40.43	3.35	5.11	3 29.91	17 3 38.89
13	9	. .	. .	. .	. .	. .	17.	. .	3 44.89	4.60	1.35	VI.	3	26.456	33 42.15	3.34	4.48	3 50.84	16 58 39.97
14	9	. .	20.8	36.5	53.	9.2	. .	. .	6 52.94	4.59	1.26	IV.	3	22.083	38 16.72	3.21	5.06	6 58.79	17 3 14.99
15	8.9	. .	56.7	13.1	29.	45.2	1.2	. .	9 29.06	4.57	1.36	IV.	3	25.737	34 27.45	3.09	4.57	9 34.99	16 59 25.11
16	8.9	. .	9.3	25.7	41.3	. .	13.7	. .	11 41.59	4.56	1.85	IV.	5	47.855	11 11.55	3.01	1.66	11 48.00	16 36 6.22
17	10	. .	22.	38.3	54.2	. .	. .	. .	13 54.34	4.55	1.18	III.	2	17.678	42 47.20	2.93	5.65	14 0.07	17 7 45.78
18	10	. .	. .	. .	38.2	. .	. .	. .	18 38.11	4.52	1.23	IV.	2	19.207	41 11.70	2.75	5.44	18 43.86	17 6 9.89
19	8.9	. .	25.3	41.8	57.5	. .	29.8	. .	22 57.68	4.50	1.62	IV.	3	36.198	23 31.23	2.60	3.19	23 3.80	16 48 27.02
20	9	. .	. .	41.3	57.2	13.8	29.3	. .	25 57.30	4.48	1.20	IV.	2	16.944	43 33.51	2.50	5.74	26 2.98	17 8 31.75
21	9	. .	30.5	46.	2.8	19.	35.2	. .	28 2.72	4.47	1.24	IV.	2	18.307	42 8.22	2.43	5.56	28 8.43	17 7 6.20
22	9	. .	10.3	28.	43.8	. .	. .	. .	39 43.50	4.41	1.65	III.	3	35.618	24 7.63	2.11	3.26	39 49.56	16 49 3.00
23	9	. .	. .	. .	16.3	. .	48.3	. .	41 16.18	4.41	1.31	VI.	2	19.637	40 44.98	2.07	5.39	41 21.90	17 5 42.44
24	7	. .	. .	. .	. .	. .	. .	. .	42	. .	1.81	VII.	4	42.566	16 42.92	2.	2.35	42	16 41 37.
25	8.9	. .	19.2	35.5	52.	. .	24.	. .	44 51.73	4.39	1.17	IV.	2	13.152	47 31.69	1.98	6.25	44 57.29	17 12 29.92
26	8	. .	. .	15.5	31.5	47.9	3.3	. .	50 31.53	4.36	1.85	IV.	5	43.216	16 2.93	1.86	2.26	50 37.74	16 40 57.05
27	9.10	. .	. .	4.4	20.3	37.	. .	. .	23 59 20.58	+ 4.32	+1.81	IV.	5	43.098	−16 10.42	− 1.71	− 2.28	23 59 26.77	−16 41 4.41

ZONE 206. OCTOBER 10. S. $D_0 = -17^\circ\ 39'\ 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	5.	. .	37.	. .	. .	. .	22 49 37.24	+ 3.93	+0.41	.	5	44.785	−14 23.95	− 2.80	− 8.01	22 49 41.58	−17 54 14.76
2	8	. .	. .	. .	. .	. .	38.	. .	50 5.58	3.93	−0.04	.	2	11.002	50 49.13	2.78	12.71	50 9.47	18 30 44.62
3	7	. .	. .	. .	. .	. .	41.	. .	51 8.65	3.92	+0.37	.	5	41.433	17 54.85	2.74	8.45	51 12.94	17 57 46.04
4	9	. .	22.	. .	54.	. .	. .	. .	54 54.22	3.90	0.26	.	3	32.182	27 43.23	2.58	9.70	54 58.38	18 7 35.51
5	6.5	. .	. .	45.	12.	27.8	44.	. .	22 57 11.63	3.88	0.43	.	4	45.792	13 19.53	2.49	7.87	22 57 15.94	17 53 9.89
6	8	. .	43.5	. .	16.	32.	. .	. .	23 0 15.94	3.87	0.46	.	5	46.972	12 6.98	2.37	7.68	23 0 20.27	17 51 57.03
7	.	. .	. .	. .	. .	9.	29.	. .	0										
8	8	. .	. .	. .	. .	22.	. .	. .	2 5.70	3.86	0.18	.	3	24.562	35 41.09	2.31	10.73	2 9.74	18 15 34.13
9	9	. .	. .	. .	. .	. .	12.	. .	2 39.62	3.85	0.08	.	3	17.970	42 34.18	2.29	11.63	2 43.55	22 28.10
10	8	. .	. .	. .	. .	40.	. .	. .	4 23.76	3.84	0.25	.	3	29.758	30 14.99	2.23	10.02	4 27.85	10 7.24
11	9	. .	. .	. .	30.5	. .	. .	. .	5 30.36	3.84	0.24	.	3	28.878	31 10.33	2.19	10.14	5 34.44	11 2.66
12	8	. .	19.5	. .	52.	. .	. .	. .	8 51.98	3.82	0.30	.	3	33.658	26 10.55	2.08	9.49	8 56.10	6 2.12
13	9	. .	27.	. .	. .	. .	. .	. .	12 59.65	3.80	0.08	.	2	16.020	44 30.82	1.95	11.91	13 3.53	24 24.68
14	9	. .	. .	9.	25.	41.	. .	. .	13 24.95	3.79	0.14	.	2	20.000	40 21.59	1.94	11.37	13 28.88	18 20 14.90
15	10	. .	. .	. .	. .	8.	24.	. .	14 51.73	3.78	0.39	.	4	39.292	20 8.27	1.90	8.71	14 55.90	17 59 58.88
16	9	. .	. .	12.	28.	43.5	. .	. .	16 27.79	3.77	0.29	.	3	31.283	28 39.69	1.85	9.82	16 31.85	18 8 31.26
17	9	. .	24.	. .	56.	. .	. .	. .	21 56.23	3.75	0.33	.	3	34.050	25 45.88	1.70	9.44	22 0.31	5 37.02
18	10	. .	. .	. .	. .	. .	37.	. .	23 24 4.66	+ 3.73	+0.40	.	4	38.694	−20 45.74	− 1.65	− 8.79	23 24 8.79	−18 0 36.18

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 7,		. .	. .	. .	. .	. .	359 59 63.45	30.0067
10,		. .	. .	. .	. .	. .	61.99	30.0051

REMARKS.

(205) 9. Time of transit over T. IV assumed as 6s.3 instead of 0s.3.

(206) 2. Declination differs 1′ from Arg. Z. 253, 32.

(206) 5. Time of transit over T. III assumed as 55s instead of 45s.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex	U.	L.	I.
	1847.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 205	Oct. 7,	22 30	65 47 {35.2 / 35.9	33.1 / 33.5	40.7 / 40.6	30.8 / 31.9	30.9 / 31.3	25.7 / 26.3	32.99	30.234	63.2	56.1	63.	61.8	64.2
		22 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	56.0			
		23 0	. .	. .	. .	. .	. .	. .	. .	30.228	. .	55.9			
		23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	55.6			
		23 40	. .	. .	. .	. .	. .	. .	. .	30.212	62.5	55.4			
Zone 206	Oct. 10,	22 40	67 2 {26. / 26.	22.9 / 22.8	31.2 / 31.7	20.2 / 20.8	21.3 / 22.3	17. / 18.2	23.36						
		23 0	. .	. .	. .	. .	. .	. .	. .	30.124	63.2	57.	62.2	61.3	62.5

ZONE 206. OCTOBER 10. S. $D_0 = -17° 39' 40''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.	i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.	r.	′ ″	″	″	h. m. s.	° ′ ″
19	8	. .	. .	. .	. .	. .	15.	. .	23 24 42.60	+ 3.73	+0.08	. 2 14.153	−46 28.91	− 1.63	−12.16	23 24 46.41	−18 26 22.70
20	10	. .	. .	. .	32.	. .	. .	. .	26 31.88	3.72	0.46	. 4 42.634	16 38.21	1.59	8.27	26 36.06	17 56 28.07
21	8	. .	. .	. .	. .	. .	14.	. .	26 41.61	3.72	0.55	. 5 49.180	9 48.50	1.59	7.42	26 45.88	17 49 37.51
22	9	. .	36.8	. .	9.	. .	. .	. .	29 9.20	3.71	0.13	. 2 16.942	43 33.00	1.52	11.78	29 13.04	18 23 26.30
23	9	. .	. .	. .	. .	. .	54.	. .	29 21.63	3.70	0.51	. 4 45.767	13 21.79	1.52	7.86	29 25.84	17 53 11.17
24	10	. .	19.5	. .	. .	8.	. .	. .	31 51.97	3.69	0.53	. 4 46.612	12 27.82	1.46	7.74	31 56.19	17 52 17.02
25	10	. .	. .	57.	. .	29.5	. .	. .	33 13.23	3.68	0.17	. 2 18.789	41 37.49	1.44	11.52	33 17.08	18 21 30.45
26	8.9	. .	42.	58.5	. .	31.	. .	. .	38 14.75	3.66	0.36	. 4 41.090	18 14.42	1.34	8.48	38 18.77	17 58 4.24
27	10	. .	. .	. .	17.5	. .	50.	. .	39 17.51	3.65	0.49	. 4 43.132	16 6.94	1.32	8.19	39 21.65	17 55 56.45
28	9	. .	50.3	. .	23.	. .	. .	. .	42 22.88	3.63	0.29	. 3 27.419	32 42.12	1.27	10.34	42 26.80	18 12 33.73
29	9	. .	51.	. .	23.	. .	. .	. .	44 23.24	3.61	0.29	. 3 25.795	34 23.74	1.24	10.57	44 27.14	14 15.55
30	9	. .	15.5	. .	48.	4.5	. .	. .	48 48.08	3.60	0.39	. 3 33.590	26 14.81	1.18	9.50	48 52.07	18 6 5.49
31	10	. .	. .	. .	9.	. .	41.	. .	49 8.76	3.60	0.58	. 5 47.820	11 13.74	1.17	7.57	49 12.94	17 51 2.48
32	9	. .	. .	. .	29.5	. .	1.8	. .	51 29.40	3.59	0.64	. 5 51.975	6 52.91	1.14	7.00	51 33.63	17 46 41.05
33	3.4	. .	26.8	43.	59.	. .	. .	. .	55 59.16	3.57	0.36	. 3 29.646	30 22.28	1.09	10.03	56 3.09	18 10 13.40
34	9	. .	. .	. .	30.	46.6	. .	. .	56 30.09	3.56	0.28	. 3 24.546	35 42.28	1.09	10.74	56 33.93	15 34.11
35	6	. .	2.	18.	34.5	50.5	. .	. .	23 59 34.37	3.55	0.32	. 3 26.642	33 30.74	1.06	10.45	23 59 38.24	13 22.25
36	6	. .	17.2	33.5	50.	6.	. .	. .	0 0 49.80	3.54	0.19	. 2 15.760	44 47.13	1.05	11.94	0 0 53.53	24 40.12
37	10	. .	. .	. .	. .	4.	. .	. .	1 47.77	3.54	0.40	. 3 31.891	28 1.17	1.04	9.74	1 51.71	7 51.95
38	10	. .	. .	. .	. .	. .	47.	. .	3 14.67	3.53	0.44	. 3 34.660	25 7.24	1.03	9.35	3 18.64	4 57.62
39	9	. .	. .	. .	. .	20.	. .	. .	4 3.61	3.53	0.21	. 2 16.845	43 39.84	1.03	11.82	4 7.35	23 32.69
40	8	. .	59.	. .	31.	. .	. .	. .	5 31.24	3.52	0.50	. 3 38.250	21 22.45	1.02	8.89	5 35.26	1 12.36
41	10	. .	. .	. .	. .	2.	. .	. .	5 45.80	3.52	0.50	. 3 39.275	20 17.99	1.02	8.75	5 49.82	18 0 7.76
42	10	. .	. .	. .	2.	. .	. .	. .	7 1.88	3.51	0.51	. 3 40.090	19 26.92	1.01	8.61	7 5.90	17 59 16.54
43	10	. .	. .	. .	12.	. .	. .	. .	10 11.93	3.50	0.21	. 2 16.385	44 8.74	0.99	11.88	10 15.64	18 24 1.61
44	7	. .	16.	. .	48.5	. .	. .	. .	11 48.56	3.49	0.13	. 2 9.880	50 55.78	0.99	12.79	11 52.18	30 49.56
45	6	. .	. .	. .	. .	39.	. .	. .	12 22.54	3.49	0.13	. 2 8.740	52 8.13	0.99	12.91	12 26.16	18 32 2.03
46	10	. .	19.	. .	. .	. .	. .	. .	14 51.59	3.48	0.56	. 5 42.232	17 4.54	0.98	8.31	14 55.63	17 56 53.83
47	7	. .	11.5	28.	34.	0.5	16.5	. .	17 44.12	3.46	0.34	. 3 24.700	35 32.49	0.98	10.72	17 47.92	18 15 24.19
48	10	. .	. .	. .	8.	. .	41.5	. .	20	3.45	0.69	. 5 51.532	7 20.90	0.97	7.04	20	17 47 8.91
49	10	. .	. .	. .	. .	. .	42.	. .	22 9.66	3.44	0.51	. 3 37.340	22 19.19	0.97	8.98	22 13.61	18 2 9.14
50	10	. .	. .	39.	. .	11.5	. .	. .	26 55.22	3.42	0.26	. 2 20.702	39 37.56	0.99	11.28	26 58.90	19 29.83
51	9	. .	. .	25.	. .	57.5	. .	. .	28 41.22	3.41	0.22	. 2 14.302	46 19.12	0.99	12.17	28 44.85	26 12.28
52	9	. .	. .	21.	. .	. .	9.	. .	32 36.96	3.40	0.24	. 2 15.390	45 10.89	1.01	12.02	32 40.60	25 3.92
53	9	. .	51.	. .	. .	. .	. .	. .	37 23.59	3.38	0.53	. 3 36.165	23 33.36	1.05	9.14	37 27.50	3 23.55
54	10	. .	. .	. .	. .	. .	48.	. .	37 15.65	3.38	0.36	. 2 23.578	36 37.79	1.05	10.88	37 19.39	16 29.72
55	10	. .	. .	. .	. .	. .	21.	. .	38 48.66	3.37	0.52	. 3 37.664	21 58.74	1.06	8.93	38 52.55	1 48.73
56	8	. .	39.	55.	11.5	27.5	. .	. .	41 11.38	3.36	0.30	. 2 18.372	42 4.14	1.08	11.60	41 15.04	21 56.82
57	8	. .	5.	. .	37.3	53.8	. .	. .	45 37.43	3.35	0.24	. 2 12.499	48 12.44	1.14	12.42	45 41.02	28 6.00
58	8	. .	. .	19.	. .	. .	. .	. .	47 35.28	3.34	0.39	. 3 24.685	35 33.50	1.16	10.73	47 39.01	18 15 25.39
59	7	. .	. .	. .	. .	58.2	14.2	. .	47 41.94	3.34	0.76	. 5 52.012	6 50.64	1.16	6.97	47 46.04	17 46 38.77
60	8	. .	48.5	. .	20.5	. .	. .	. .	51 20.76	3.33	0.38	. 2 22.365	37 53.06	1.21	11.05	51 24.47	18 17 45.32
61	8	. .	30.	47.	2.	. .	. .	. .	53 2.61	3.32	0.69	. 4 45.752	13 21.73	1.24	7.84	53 6.62	17 53 10.81
62	10	. .	. .	20.	. .	. .	. .	. .	56 36.31	3.31	0.61	. 3 38.922	20 40.15	1.30	8.75	56 40.23	18 0 30.20
63	9	. .	. .	. .	. .	38.	54.	. .	0 57 21.66	3.30	0.41	. 2 23.306	36 54.85	1.32	10.92	0 57 25.37	16 47.09
64	10	. .	58.	. .	30.	. .	. .	. .	1 0 30.30	3.29	0.29	. . 2 13.585	47 3.65	1.38	12.29	1 0 33.88	18 26 57.32
65	9	. .	. .	. .	. .	28.	44.	. .	1 11.74	3.29	0.72	. 5 46.992	12 5.80	1.39	7.54	1 15.75	17 51 54.73
66	9	. .	. .	. .	. .	. .	54.	. .	2 21.64	3.29	0.37	. 2 19.676	40 42.48	1.42	11.44	2 25.30	18 20 35.34
67	9	. .	. .	. .	. .	36.	52.	. .	1 4 19.64	+ 3.28	+0.38	. 2 20.073	−40 17.52	− 1.46	−11.39	1 4 23.30	−18 20 10.37

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 206	Oct. 10, 23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	56.8	61.3	54.8	58.
	23 30	67 2 {25.2 / 25.8}	24. / 24.2	31.5 / 32.2	20.8 / 22.0	21.3 / 21.8	17.5 / 17.8	23.67						
	23 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	56.2			
	24 0	. .	. .	. .	. .	. .	. .	. .	30.130	62.	55.2			
	24 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	55.2			
	24 40	. .	. .	. .	. .	. .	. .	. .	30.134	61.8	55.			
	1 40	. .	. .	. .	. .	. .	. .	. .	30.152	61.2	54.2			

REMARKS.

(206) 23. Right ascension differs 1^m from Arg. Z. 267, 25.

(206) 38. Right ascension differs 1^m from Arg. Z. 268, 71.

(206) 47. Time of transit over T. IV assumed as 44^s instead of 34^s.

(206) 48. Transits discordant by 3^s.

ZONE 206. OCTOBER 10. S. $D_0 = -17° 39' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
68	7	. .	48.5	. .	21.	. .	. .	. .	1 7 20.98	+ 3.27	+0.61	.	3	37.386	−22 16.74	− 1.53	− 8.97	1 7 24.86	−18 2 7.24
69	8	. .	. .	6.5	23.5	39.	. .	. .	8 22.96	3.27	0.51	.	3	29.179	30 51.64	1.56	10.10	8 26.74	10 43.30
70	8	. .	. .	49.	. .	21.5	. .	. .	10 5.22	3.26	0.39	.	2	20.435	39 54.43	1.60	11.33	10 8.87	18 19 47.36
71	9	. .	53.	9.	. .	41.	. .	. .	12 25.28	3.25	0.78	.	4	49.179	9 46.74	1.67	7.43	12 29.31	17 49 35.84
72	8	. .	9.	25.	41.	. .	. .	. .	18 41.24	3.23	0.59	.	3	34.189	25 37.35	1.85	9.43	18.45.06	18 5 28.63
73	7	. .	. .	27.8	43.5	. .	. .	. .	20 43.73	3.23	0.63	.	3	37.058	22 37.26	1.91	9.02	20 47.59	2 28.19
74	9	. .	30.5	. .	2.	. .	. .	. .	22 2.48	3.22	0.60	.	3	35.722	24 0.97	1.96	9.19	22 6.30	3 52.12
75	9	. .	. .	50.	. .	. .	. .	. .	23 6.30	3.22	0.42	.	2	19.535	40 50.88	2.00	11.46	23 9.94	20 44.34
76	8	. .	. .	. .	. .	57.	. .	. .	23 56.94	3.22	0.33	.	2	12.805	47 53.32	2.02	12.40	24 0.49	27 47.74
77	8	. .	. .	. .	. .	52.5	. .	. .	24 36.07	3.21	0.32	.	2	12.035	48 41.60	2.05	12.51	24 39.60	28 36.16
78	8	. .	. .	. .	34.	. .	. .	. .	25 33.93	3.21	0.38	.	2	17.318	43 10.24	2.08	11.77	25 37.52	23 4.09
79	9	. .	36.	. .	. .	. .	. .	. .	28 8.58	3.20	0.56	.	3	29.822	30 11.17	2.17	10.02	28 12.34	10 3.36
80	7	. .	. .	15.	31.	47.	. .	. .	28 30.96	3.20	0.46	.	3	22.685	37 38.90	2.19	11.02	28 34.62	17 32.11
81	9	. .	. .	. .	. .	50.5	. .	. .	29 34.29	3.20	0.64	.	4	36.538	23 1.04	2.22	9.09	29 38.13	2 52.35
82	.	. .	. .	. .	8.5	. .	. .	. .	31 8.37	3.20	0.66	.	4	36.810	22 43.59	2.28	9.05	31 12.23	2 34.92
83	7	. .	. .	. .	. .	19.5	. .	. .	32 3.25?	3.19	. .	.	.	.413	. . .	2.32	. .	32 (7)	
84	7	. .	. .	. .	. .	. .	0.5	. .	32 28.15	3.19	0.46	.	3	21.620	38 45.38	2.34	11.17	32 31.80	18 18 38.89
85	9	. .	. .	. .	. .	57.5	. .	. .	34 41.33	3.19	0.75	.	4	43.010	16 14.74	2.44	8.19	34 45.27	17 56 5.37
86	10	. .	. .	. .	55.	. .	. .	. .	38 54.87	3.18	0.54	.	3	27.502	32 36.85	2.61	10.34	38 58.59	18 12 29.80
87	7	. .	. .	. .	59.5	. .	32.	. .	39 59.52	3.17	0.54	.	3	26.012	34 10.21	2.66	10.55	40 3.23	14 3.42
88	9	. .	14.5	. .	. .	3.5	. .	. .	42 47.15	3.17	0.53	.	3	25.458	34 44.94	2.78	10.63	42 50.85	14 38.35
89	9	. .	21.2	37.	53.5	. .	. .	. .	45 53.47	3.16	0.63	.	3	32.092	27 48.87	2.94	9.72	45 57.26	18 7 41.53
90	9	. .	. .	. .	. .	6.	. .	. .	46 49.88	3.16	0.87	.	6	51.758	7 6.59	2.98	6.99	46 53 91	17 46 56.56
91	9	. .	. .	22.8	. .	. .	. .	. .	48 39.14	3.15	0.77	.	4	42.483	16 47.44	3.06	8.27	48 43.06	17 56 38.77
92	8	. .	. .	46.2	. .	. .	. .	. .	50 2.52	3.15	0.43	.	2	15.775	44 46.51	3.14	11.98	50 6.10	18 24 41.63
93	9	. .	. .	. .	24.	. .	56.5	. .	50 24.02	3.15	0.37	.	2	13.215	47 27.74	3.16	12.34	50 27.54	27 23.24
94	10	. .	35.	. .	. .	. .	. .	. .	56 7.66	3.14	0.37	.	2	11.303	49 26.81	3.47	12.61	56 11.17	29 22.89
95	7	. .	9.5	26.	42.	. .	. .	. .	56 42.08	3.14	0.57	IV.	3	25.948	34 14.14	3.51	10.56	56 45.79	14 8.21
96	8	. .	. .	. .	33.5	. .	6.0	. .	57 33.52	3.14	0.75	IV.	4	38.830	20 36.82	3.55	8.77	57 37.41	0 29.14
97	9	. .	. .	. .	. .	. .	13.5	. .	1 58 41.16	3.13	0.72	.	4	37.525	21 59.24	3.61	8.95	1 58 45.01	1 52.80
98	10	. .	46.	. .	. .	. .	. .	. .	2 1 18.59	3.13	0.60	.	3	28.243	31 50.42	3.77	10.25	2 1 22.32	11 44.44
99	8	. .	. .	. .	33.5	. .	6.3	. .	1 33.68	3.13	0.67	IV.	3	33.429	26 25.16	3.78	9.52	1 37.48	18 6 18.46
100	9	. .	. .	. .	. .	20.2	. .	. .	3 4.04	3.12	0.82	.	4	44.546	14 38.46	3.87	7.97	3 7.98	17 54 30.30
101	7	. .	. .	23.	. .	. .	. .	. .	4 22.96	3.12	0.42	.	2	13.498	47 9.48	3.97	12.33	4 26.50	18 27 5.78
102	7	. .	. .	. .	. .	10.5	26.5	. .	4 54.10	3.12	0.43	V.	2	14.412	46 12.67	3.98	12.20	4 57.65	26 8.85
103	10	. .	. .	5.	. .	. .	. .	. .	7 21.34	3.12	0.40	.	2	11.212	49 32.83	4.14	12.65	7 24.86	18 29 29.62
104	10	. .	31.5	. .	4.	. .	. .	. .	14 3.99	3.11	0.93	IV.	5	51.603	7 16.38	4.56	6.98	14 8.03	17 47 7.92
105	6	. .	. .	41.5	57.5	14.	. .	. .	14 57.62	3.10	0.53	V.	2	19.512	40 52.76	4.62	11.48	15 1.25	18 20 48.86
106	10	. .	30.	. .	. .	. .	. .	. .	17 2.59	3.10	0.85	.	4	44.386	14 47.68	4.76	7.99	17 6.54	17 54 40.43
107	9	. .	. .	. .	. .	34.	50.	. .	17 17.72	3.10	0.70	V.	3	31.850	28 3.74	4.78	9.75	17 21.52	18 7 58.27
108	10	. .	11.8	. .	44.	. .	. .	. .	19 44.14	3.10	0.92	IV.	5	48.641	10 22.28	4.92	7.40	19 48.16	17 50 14.60
109	8	. .	37.	54.	. .	. .	42.5	. .	22 10.03	3.09	0.85	.	4	43.385	15 50.89	5.08	8.13	22 13.97	17 55 44.10
110	8	. .	49.5	. .	22.	. .	. .	. .	26 21.99	3.09	0.61	IV.	3	24.920	35 18.62	5.38	10.72	26 25.69	18 15 14.72
111	7	. .	25.5	. .	58.	. .	. .	. .	27 57.98	3.09	0.85	.	4	42.240	17 2.32	5.49	8.29	28 1.92	17 56 56.10
112	8	. .	27.5	. .	0.	. .	. .	. .	29 59.99	3.08	0.96	IV.	5	50.688	8 13.75	5.64	7.10	30 4.03	17 48 6.49
113	9	. .	. .	. .	45.5	. .	. .	. .	29 45.37	3.08	0.77	.	3	36.496	23 12.51	5.62	9.09	29 49.22	18 3 7.22
114	8	. .	. .	. .	. .	. .	35.	. .	31 31.18	3.08	0.69	.	3	29.062	30 58.47	5.75	10.13	31 34.95	10 54.35
115	7	. .	. .	53.	. .	25.8	. .	. .	34 9.36	3.08	0.49	.	2	12.773	47 54.75	5.94	12.44	34 12.93	27 53.13
116	9	. .	. .	. .	. .	54.	. .	. .	2 36 37.77	+ 3.08	+0.74	.	3	32.567	−27 18.87	− 6.12	− 9.65	2 36 41.59	−18 7 14.64

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
		° ′ ″							in.	°	°	°	°	°
Zone 206	1848. h. m. Oct. 10, 2 0	. .	. .	. .	. .	. .	. .	. .	. . .	. .	52.9			
	2 20	. .	. .	. .	. .	. .	. .	. .	30.160	60.3	52.3			
	2 40	. .	. .	. .	. .	. .	. .	. .	. . .	. .	51.2			
	3 0	. .	. .	. .	. .	. .	. .	. .	30.166	60.2	51.2			
	3 20	. .	. .	. .	. .	. .	. .	. .	. . .	. .	50.6			

REMARKS.

(206) 71. Right ascension differs 10ˢ and declination 20′ from Arg. Z. 331, 34.

(206) 76. Transit over T. IV assumed as recorded over T. V.

(206) 101. Transit over T. IV assumed as recorded over T. III.

(206) 112. Right ascension differs 1ᵐ from Arg. Z. 318, 35.

ZONE 206. OCTOBER 10. S. $D_{\circ} = -17° 39' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
117	8	. .	. .	. .	59.5	. .	32.	. .	2 37 59.52	+ 3.08	+0.67	IV.	3	27.195	−32 56.11	− 6.23	−10.39	2 38 3.27	−18 12 52.73
118	9	. .	51.	7.	. .	. .	. .	. .	40 23.42	3.07	0.71	.	2	28.982	30 57.78	6.41	10.14	40 27.20	18 10 54.33
119	9	. .	. .	. .	. .	57.	. .	. .	40 40.81	3.07	0.84	.	4	39.362	20 3.88	6.43	8.69	40 44.72	17 59 59.00
120	8	. .	7.5	24.	40.	. .	. .	. .	42 40.11	3.07	0.91	.	5	44.790	14 23.82	6.58	7.93	42 44.09	54 18.33
121	8	. .	15.	31.	. .	. .	. .	. .	44 47.48	3.07	0.95	.	5	46.762	12 19.85	6.74	7.67	44 51.50	17 52 14.26
122	10	. .	. .	. .	13.	. .	. .	. .	51 12.88	3.07	0.67	.	3	24.923	35 18.43	7.24	10.72	51 16.62	18 15 16.39
123	8	. .	. .	52.	. .	. .	. .	. .	54 8.33	3.07	0.53	.	2	12.889	47 47.48	7.47	12.42	54 11.93	27 47.37
124	8	. .	. .	58.	14.2	. .	. .	. .	55 14.18	3.06	0.83	.	3	35.648	24 5.68	7.56	9.21	55 18.07	4 2.45
125	8	. .	. .	45.	1.	. .	. .	. .	57 0.66	3.06	0.63	.	2	20.648	39 41.01	7.70	11.32	57 4.35	19 40.03
126	9	. .	. .	23.	. .	55.8	. .	. .	2 59 39.43	3.06	0.84	.	3	36.253	23 27.83	7.91	9.13	2 59 43.33	3 24.87
127	9	. .	. .	. .	. .	18.	. .	. .	3 3 1.64	3.06	0.61	.	2	17.790	42 40.57	8.19	11.74	3 3 5.31	22 40.50
128	10	. .	. .	. .	. .	30.	. .	. .	4 13.80	3.06	0.49	.	3	39.195	20 22.97	8.29	8.72	4 17.75	0 19.98
129	8	. .	39.8	. .	12.	. .	. .	. .	6 12.12	3.06	0.74	.	3	28.340	31 44.34	8.44	10.25	6 15.92	11 43.03
130	9	. .	. .	52.	. .	24.5	. .	. .	7 8.21	3.06	0.58	.	2	14.883	45 42.93	8.52	12.16	7 11.85	25 43.61
131	10	. .	7.5	. .	. .	. .	. .	. .	10 40.09	3.06	0.75	.	3	28.178	31 54.50	8.81	10.26	10 43.90	11 53.57
132	11	. .	. .	53.5	. .	. .	. .	. .	11 9.76	3.06	0.77	.	3	28.885	31 9.96	8.85	10.17	11 13.59	18 11 8.98
133	9	. .	. .	. .	26.	. .	. .	. .	12 25.88	3.06	0.93	.	4	40.948	18 23.91	8.96	8.46	12 29.87	17 58 21.33
134	9	. .	. .	32.5	. .	. .	. .	. .	13 48.79	3.06	0.87	.	3	35.779	23 57.39	9.07	9.18	13 52.72	18 3 55.64
135	7	. .	48.8	. .	22.	38.	. .	. .	16 21.69	3.06	0.93	.	4	40.649	18 42.86	9.28	8.50	16 25.68	17 58 40.64
136	9	. .	. .	24.	. .	56.	. .	. .	18 40.00	3.06	0.75	.	3	26.398	33 46.17	9.48	10.52	18 43.81	18 13 46.17
137	10	. .	. .	. .	43.	. .	. .	. .	19 42.89	3.06	1.06	.	5	49.828	9 7.68	9.57	7.21	19 47.01	17 49 4.46
138	10	. .	56.	. .	28.	. .	. .	. .	22 28.30	3.06	0.61	.	2	15.474	45 5.25	9.82	12.06	22 31.97	18 25 7.13
139	11	. .	. .	22.	. .	. .	. .	. .	3 23 38.31	+ 3.06	+0.64	.	2	17.245	−43 14.51	− 9.91	−11.82	3 23 42.01	−18 23 16.24

ZONE 207. OCTOBER 11. C. $D_{\circ} = -16° 24' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	. .	. .	. .	17.5	33.5	. .	20 32 1.40	+ 4.14	+0.49	V.	4	45.036	−14 7.64	−13.07	− 2.05	20 32 6.03	−16 39 12.76
2	9.10	. .	. .	27.	42.8	. .	15.3	. .	36 43.03	4.11	0.53	IV.	5	49.519	9 27.28	12.62	1.47	36 47.67	16 34 31.37
3	9	. .	. .	43.3	59.2	15.3	31.3	. .	37 59.19	4.10	0.27	IV.	2	11.400	49 21.35	12.49	6.44	38 3.56	17 14 30.28
4	9	. .	10.2	. .	. .	. .	. .	. .	39 42.58	4.09	0.38	II.	3	24.650	35 35.76	12.32	4.71	39 47.05	17 0 42.79
5	8.9	. .	. .	. .	. .	53.2	9.	. .	39 36.99	4.09	0.42	V.	3	31.437	28 29.84	12.33	3.82	39 41.50	16 53 35.99
6	8.9	. .	. .	. .	. .	. .	13.?	. .	39 40.87	4.09	0.35	VII.	3	21.494	38 53.03	12.32	5.12	39 45.31	17 4 0.47
7	9	. .	. .	. .	35.3	41.	. .	. .	42 35.00	4.07	0.42	V.	3	27.039	33 5.64	12.05	4.39	42 39.49	16 58 12.08
8	9	. .	47.5	. .	19.8	35.8	. .	. .	44 19.76	4.06	0.50	IV.	4	40.943	18 24.22	11.89	2.58	44 24.32	43 28.69
9	9.10	. .	8.	. .	. .	. .	. .	. .	46 40.37	4.05	0.52	II.	4	42.537	16 43.67	11.66	2.37	46 44.94	41 47.70
10	9.10	. .	. .	. .	55.	. .	. .	. .	46 54.89	4.04	0.57	IV.	5	47.269	11 48.53	11.64	1.76	46 59.50	16 36 51.93
11	9.10	. .	. .	. .	. .	. .	. .	. .	46	. .	0.37	VII.	2	18.361	42 5.14	11.64	5.53	. . .	17 7 12.31
12	9	. .	. .	26.	. .	. .	14.5	. .	48 42.29	4.03	0.53	III.	4	39.772	19 37.39	11.47	2.73	48 46.85	16 44 41.59
13	7	. .	. .	. .	11.5	27.2	43.2	. .	49 11.20	4.03	0.58	V.	5	47.795	11 15.31	11.42	1.69	49 15.81	36 18.42
14	9.10	. .	. .	. .	. .	. .	. .	. .	50	. .	0.43	VI½.	2	25.964	34 8.05	11.34	4.52	. . .	59 13.91
15	9.10	. .	. .	. .	58.2	. .	. .	. .	51 58.07	4.01	0.46	IV.	3	28.252	31 49.79	11.16	4.23	52 2.54	16 56 55.18
16	8	. .	. .	51.2	7.	23.3	39.1	. .	53 7.08	4.00	0.43	IV.	3	24.219	36 2.78	11.06	4.76	53 11.51	17 1 8.60
17	9.10	. .	. .	3.	19.	. .	. .	. .	54 19.01	3.99	0.46	III.	3	27.432	32 41.35	10.94	4.34	54 23.46	16 57 46.63
18	8.9	. .	. .	36.4	53.1	9.3	. .	. .	55 52.88	3.98	0.43	IV.	3	24.215	36 3.04	10.80	4.76	55 57.29	17 1 8.60
19	9	. .	. .	. .	36.3	53.	9.	. .	56 36.65	3.98	0.53	V.	4	36.131	23 26.52	10.74	3.20	56 41.16	16 48 30.46
20	9.10	. .	40.8	56.8	. .	. .	. .	. .	58 13.10	3.96	0.39	III.	2	17.251	43 14.13	10.59	5.67	58 17.45	17 8 20.39
21	8	. .	. .	. .	47.2	. .	19.5	. .	20 58 47.23	3.96	0.44	VI.	3	24.157	36 6.25	10.53	4.77	20 58 51.63	1 11.55
22	9	. .	. .	. .	. .	. .	32.	. .	21 0 59.86	+ 3.95	+0.41	VI.	3	20.671	−39 44.84	−10.33	− 5.23	21 1 4.22	−17 4 50.40

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 11,	. .	. .	. .	. .	. .	359 59 64.26	30.0139

REMARKS.

(207) 22. Right ascension differs 2^m from Arg. Z. 244, 115, and 256, 7.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 207	Oct. 11, 20 30	65 47 {32.7 33.8	31.2 30.6	36.7 36.8	29.9 30.4	28.1 28.5	23.8 23.9	} 30.53	30.232	60.	51.	60.	58.8	61.5
	20 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	51.			
	21 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	51.1			
	21 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	46.5			
	22 0	. .	. .	. .	. .	. .	. .	. .	30.228	56.	45.7			
	22 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	45.3			
	22 40	65 47 {32.2 32.9	31.6 31.2	37.4 37.3	30. 30.3	28.8 29.3	22.1 22.1	} 30.43	30.232	55.3	44.1	54.	51.3	61.

Zone 207. October 11. C. $D_0 = -16° 24' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
23	9	. .	11.2	27.2	. .	. .	. .	. .	21 0 43.48	+3.95	+0.54	III.	4	38.788	−20 39.15	−10.36	− 2.86	21 0 47.97	−16 45 42.37
24	7	. .	. .	. .	57.2	13.2	29.3	. .	0 57.05	3.95	0.36	V.	2	12.622	48 4.79	10.34	6.29	1 1.36	17 13 11.42
25	9	. .	. .	. .	10.8	. .	. .	. .	2 10.67	3.94	0.54	IV.	3	37.746	21 53.95	10.23	3.00	2 15.15	16 46 57.18
26	8	. .	. .	40.3	. .	13.	28.7	. .	2 56.68	3.94	0.60	IV.	5	46.162	12 57.94	10.16	1.89	3 1.22	37 59.99
27	9	. .	. .	. .	43.5	0.2	. .	. .	6 59.93	3.91	0.62	V.	5	47.985	11 3.46	9.83	1.66	7 4.46	36 4.95
28	8	. .	37.2	. .	. .	25.3	. .	. .	6 9.40	3.91	0.58	IV.	4	41.773	17 32.12	9.81	2.47	7 13.89	42 34.40
29	9	. .	54.5	11.2	27.	43.1	. .	. .	9 27.09	3.89	0.66	IV.	5	52.966	5 51.28	9.58	1.00	9 31.64	30 51.86
30	7	. .	17.3	33.9	49.8	. .	22.2	. .	10 49.88	3.88	0.49	IV.	3	26.398	23 18.78	9.47	3.20	10 54.25	16 48 21.45
31	9.10	. .	. .	. .	. .	2.	. .	. .	11 45.76	3.88	0.45	V.	2	19.412	40 59.08	9.40	5.39	11 50.09	17 6 3.87
32	9	. .	50.3?	. .	. .	. .	40.2	. .	13 24.16	3.87	0.64	II.	4	47.392	11 38.98	9.27	1.73	13 28.67	16 36 39.98
33	8	. .	. .	. .	. .	. .	57.3	. .	13 25.21	3.87	0.52	VI.	3	30.968	28 58.82	9.25	3.87	13 29.60	16 54 1.94
34	9	. .	. .	13.2	. .	. .	1.3	. .	15 29.27	3.85	0.46	IV.	2	20.773	39 33.37	9.07	5.21	15 33.58	17 4 37.65
35	9	. .	. .	. .	. .	13.2	29.2	. .	15 57.10	3.85	0.61	V.	4	42.190	17 6.33	9.03	2.41	16 1.56	16 42 7.77
36	10	. .	. .	. .	. .	. .	6.	. .	16 33.84	3.84	0.65	VI.	5	46.772	12 19.53	8.98	1.81	16 38.33	16 37 20.32
37	9.10	. .	. .	26.	42.1	. .	13.	. .	18 42.10	3.83	0.47	IV.	2	20.610	39 43.71	8.79	5.23	18 46.40	17 4 47.73
38	9	. .	. .	. .	. .	55.8	11.9	. .	19 39.74	3.82	0.55	V.	3	31.428	28 30.40	8.72	3.82	19 44.11	16 53 32.94
39	9.10	. .	. .	. .	. .	. .	46.	. .	20 13.89	3.82	0.60	VI.	3	36.721	22 57.90	8.66	3.13	20 18.31	47 59.69
40	8	. .	. .	38.7	54.3	. .	27.	. .	21 54.64	3.81	0.53	IV.	3	27.674	32 26.00	8.53	4.30	21 58.98	57 28.83
41	9	. .	. .	. .	51.2	. .	38.	. .	24 31.37	3.79	0.64	VI.	5	41.746	17 35.01	8.31	2.47	24 35.80	42 35.79
42	7.8	. .	. .	. .	. .	34.2	50.3	. .	25 18.14	3.79	0.58	V.	3	33.436	26 24.41	8.25	3.56	25 22.51	51 26.22
43	9	. .	. .	. .	. .	7.5	23.4	. .	26 51.33	3.78	0.57	V.	3	29.362	30 40.03	8.12	4.08	26 55.68	55 42.23
44	9	. .	35.2	52.	. .	24.5	. .	. .	29 8.02	3.76	0.56	IV.	3	26.777	33 22.14	7.93	4.42	29 12.34	58 24.49
45	8.9	. .	55.2	. .	27.5	43.2	59.	. .	29 27.22	3.76	0.58	IV.	3	29.678	30 20.27	7.91	4.04	29 31.56	16 55 22.22
46	5	. .	. .	. .	43.	. .	14.5	. .	31 42.64	3.75	0.41	VI.	2	5.859	55 10.07	7.73	7.19	31 46.80	17 20 14.99
47	9	. .	26.8	. .	. .	. .	. .	. .	35 59.17	3.71	0.67	II.	4	39.837	19 32.94	7.39	2.72	36 3.55	16 44 33.05
48	8	. .	27.	. .	59.5	15.3	31.2	. .	35 59.26	3.71	0.70	IV.	5	44.913	14 16.23	7.39	2.06	36 3.67	16 39 15.68
49	9	. .	. .	. .	. .	. .	. .	. .	36	. .	0.48	VII.	2	13.056	47 37.70	7.39	6.24	. . .	17 12 41.33
50	2	. .	. .	35.	41.2	57.	12.8	. .	38 40.96	3.69	0.64	IV.	3	36.419	23 17.42	7.18	3.17	38 45.29	16 48 17.77
51	9	. .	. .	. .	. .	. .	50.2	6.3	39 34.15	3.69	0.67	VI.	3	38.458	21 9.02	7.13	2.90	39 38.51	46 9.05
52	8.9	. .	33.3	49.6	. .	. .	22.	. .	42 5.76	3.67	0.63	IV.	3	31.702	28 13.21	6.91	3.78	42 10.06	53 13.90
53	9.10	. .	44.1	. .	16.6	. .	. .	. .	44 16.47	3.66	0.60	II.	3	27.568	32 32.77	6.75	4.32	44 20.73	57 33.84
54	9	. .	. .	. .	. .	37.2	53.2	. .	44 21.10	3.66	0.78	V.	5	53.439	5 21.22	6.75	0.95	44 25.54	30 18.92
55	10	. .	43.3	59.2	. .	. .	. .	. .	48 15.57	3.63	0.77	III.	4	50.044	8 52.69	6.45	1.39	48 19.97	33 50.53
56	9	. .	42.	58.3	. .	. .	. .	. .	50 4.40	3.62	0.64	III.	3	28.338	31 44.53	6.38	4.22	49 8.66	16 56 45.13
57	10	. .	. .	. .	. .	39.	. .	. .	51 22.80	3.61	0.60	V.	3	22.915	37 24.24	6.22	4.94	51 27.01	17 2 25.40
58	9.10	. .	39.2	. .	12.5	. .	. .	. .	54 11.96	3.59	0.66	IV.	3	30.606	29 22.05	6.03	3.92	54 16.21	16 54 22.00
59	9.10	. .	. .	. .	5.5	22.	. .	. .	54 5.62	3.59	0.67	V.	3	31.267	28 40.51	6.04	3.84	54 9.88	53 40.39
60	8	. .	. .	. .	57.2	13.2	29.3	. .	55 57.11	3.58	0.67	V.	3	31.777	28 8.32	5.90	3.77	56 1.36	53 7.99
61	9	. .	12.2	. .	43.4	. .	. .	. .	57 43.92	3.57	0.74	II.	4	40.948	18 23.49	5.77	2.57	57 48.23	43 21.83
62	9	. .	6.2	22.4	38.5	. .	. .	. .	21 59 38.52	3.56	0.75	III.	4	40.454	18 54.85	5.64	2.65	21 59 42.83	16 43 53.14
63	7	. .	. .	. .	11.3	28.2	44.2	. .	22 0 11.72	3.55	0.54	V.	2	9.476	51 22.17	5.60	6.73	22 0 15.81	17 16 24.50
64	9	. .	. .	52.	. .	. .	. .	. .	2 8.23	3.54	0.78	III.	4	43.867	15 20.37	5.47	2.19	2 12.55	16 40 18.03
65	9	. .	. .	. .	. .	. .	38.2	. .	2 6.01	3.54	0.85	VI.	5	52.865	5 56.95	5.47	1.01	2 10.40	30 53.43
66	10	. .	. .	50.2	. .	. .	. .	. .	5 6.42	3.52	0.79	III.	4	42.531	16 44.43	5.26	2.36	5 10.73	41 42.05
67	9	. .	. .	. .	56.2	. .	. .	. .	5 56.06	3.52	0.70	IV.	3	29.537	30 29.17	5.21	4.07	6 0.28	55 28.45
68	7	. .	. .	. .	25.7	. .	57.5	. .	6 25.46	3.52	0.85	VI.	5	51.125	7 46.39	5.18	1.23	6 29.83	16 32 42.80
69	9	. .	6.2	. .	37.3	. .	. .	. .	8 37.92	3.50	0.62	II.	2	17.721	41 44.22	5.03	5.62	8 42.04	17 6 44.87
70	9	. .	. .	. .	10.2	. .	42.	. .	9 9.98	3.50	0.77	VI.	3	37.579	22 4.12	4.99	3.01	9 14.25	16 47 2.12
71	8	. .	. .	. .	15.3	. .	47.	. .	22 9 15.02	+3.50	+0.78	VI.	3	40.946	−18 32.68	− 4.99	− 2.57	22 9 19.30	−16 43 30.24

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(207) 27. Transits over T.'s III and IV ass'd as recorded over T.'s IV and V.

(207) 28. Transit over T. II assumed to have been recorded as over T. III, and minutes as 7, not 6.

(207) 30. Micrometer reading assumed as $36^r.398$, not $26^r.398$.

(207) 32. Transit over T. V assumed as recorded over T. VI; T. II discordant and rejected.

(207) 34. Transit over T. VI assumed at $1^s.3$ instead of over T. V at 13^s.

(207) 41. Transits assumed at $31^s.2$ and $3^s.8$ instead of $51^s.2$ and 38^s, respectively.

(207) 50. Time of transit over T. III assumed as 25^s instead of 35^s.

(207) 51. Trans. ass'd as recorded over T.'s V and VI, as originally rec'ded, to agree with Arg. Z. 256, 54.

(207) 52. Transit over T. V ass'd to have been recorded as over T. VI.

(207) 56. Minutes assumed as 49, not 50; and transits over T.'s II and III as 32^s and $48^s.3$, not 42^s and $58^s.3$.

ZONE 207. OCTOBER 11. C. $D_{\circ} = -16° 24' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
72	9	. .	. .	4.7	20.8	36.3	. .	. .	22 14 20.64	+ 3.46	+0.85	IV.	4	47.737	−11 17.83	− 4.66	− 1.69	22 14 24.95	−16 36 14.18
73	9	. .	. .	7.3	23.2	39.3	. .	. .	15 23.28	3.46	0.81	IV.	3	41.131	18 21.59	4.59	2.54	15 27.55	43 18.72
74	9	. .	. .	. .	. .	. .	. .	. .	21	. .	. .	.	.	F.Wire.	29 59.13	4.21	2.68	. . .	54 56.02
75	9	. .	. .	. .	. .	. .	16.7	. .	20 44.60	3.42	0.74	VI.	3	28.202	31 52.55	4.26	4.24	20 48.76	16 56 51.05
76	7	. .	. .	. .	. .	33.	49.2	. .	22 16.91	3.41	0.67	V.	2	18.538	41 53.86	4.17	5.51	22 20.99	17 6 53.54
77	7.8	. .	26.8	42.6	58.9	15.3	31.3	. .	27 59.00	3.38	0.67	IV.	2	15.848	44 42.17	3.83	5.86	28 3.05	9 41.86
78	9	. .	. .	8.2	24.2	40.8	. .	. .	29 24.35	3.37	0.69	IV.	2	16.731	43 46.87	3.75	5.75	29 28.41	8 46.37
79	9	. .	. .	. .	. .	38.3	. .	. .	30 21.97	3.36	0.64	V.	2	10.7	50 10.	3.69	6.56	30 25.97	17 15 10.25
80	8.9	. .	. .	. .	. .	. .	34.2	. .	32 2.07	3.35	0.86	VI.	4	40.110	19 16.94	3.60	2.68	32 6.28	16 44 13.22
81	8.9	. .	44.3	0.9	. .	. .	. .	. .	35 16.90	3.33	0.89	III.	4	43.349	15 53.14	3.42	2.23	35 21.12	40 48.89
82	8.9	. .	54.	10.3	. .	41.3	57.6	. .	35 25.87	3.33	0.80	IV.	3	29.780	30 13.74	3.41	4.04	35 30.00	55 11.19
83	9	. .	. .	. .	14.2	30.1	45.9	. .	37 13.97	3.32	0.96	V.	5	53.317	5 28.88	3.32	0.95	37 18.25	16 30 23.15
84	8	. .	. .	38.9	54.8	. .	. .	. .	38 54.92	3.31	0.69	III.	2	13.734	46 54.56	3.22	6.16	38 58.92	17 11 53.94
85	7.8	. .	. .	. .	. .	28.2	44.4	. .	39 12.18	3.31	0.81	V.	3	29.077	30 57.78	3.21	4.13	39 16.30	16 55 55.12
86	9	. .	29.5	45.7	1.3	17.7	33.5	. .	22 42 1.56	+ 3.29	+0.75	IV.	2	19.095	−41 18.67	− 3.06	− 5.45	22 42 5.60	−17 6 17.18

ZONE 208. OCTOBER 14. S. $D_{\circ} = -25° 10' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	18.	35.	52.	. .	. .	. .	20 31 52.12	+ 1.95	+0.75	IV.	3	35.772	−23 57.77	−15.16	− 3.03	20 31 54.82	−25 34 35.96
2	10	. .	. .	. .	. .	48.	. .	. .	34 30.82	1.93	0.79	.	3	25.102	35 7.16	14.90	4.82	34 33.54	45 46.88
3	9	. .	29.5	. .	. .	. .	. .	. .	37 3.85	1.91	0.77	.	3	31.604	28 19.43	14.66	3.73	37 6.53	38 57.82
4	6	. .	. .	. .	9.5	. .	. .	. .	37 9.43	1.91	0.82	.	2	17.516	37 44.07	14.65	6.11	37 12.16	48 24.83
5	9	. .	. .	. .	. .	53.	10.	. .	37 35.93	1.91	0.72	V.	4	42.641	16 37.96	14.61	1.89	37 38.56	27 14.46
6	8	. .	2.	18.8	36.	. .	. .	. .	41 36.06	1.87	0.73	IV.	3	38.293	21 19.81	14.23	2.60	41 38.66	31 56.64
7	10	. .	. .	59.5	. .	. .	. .	. .	46 16.67	1.84	0.78	.	3	24.195	36 4.37	13.80	4.98	46 19.29	46 43.15
8	9	. .	. .	. .	15.	. .	. .	. .	47 14.88	1.83	0.78	.	3	25.121	35 6.16	13.71	4.82	47 17.49	45 44.69
9	9	. .	. .	15.	. .	. .	. .	. .	48 49.34	1.82	0.71	.	5	42.342	16 57.67	13.59	1.94	48 51.87	27 33.20
10	9	. .	36.	53.	. .	. .	44.8	. .	50 10.42	1.81	0.80	III.	2	19.425	46 11.48	13.44	6.64	50 13.03	56 51.56
11	9	. .	. .	22.8	. .	. .	. .	. .	53 40.01	1.78	0.70	.	4	42.200	17 5.20	13.14	1.96	53 42.49	27 40.30
12	7	. .	. .	9.	26.	. .	. .	. .	54 26.00	1.77	0.75	IV.	3	30.872	29 5.23	13.07	3.86	54 28.52	39 42.16
13	10	. .	7.	. .	42.	. .	. .	. .	56 41.61	1.76	0.68	.	5	48.860	10 8.79	12.86	0.84	56 44.05	20 42.49
14	6	. .	. .	1.	18.	35.	. .	. .	20 58 17.97	1.74	0.73	IV.	3	34.302	25 30.26	12.73	3.27	20 58 20.44	36 6.26
15	9	. .	47.	4.	21.	. .	. .	. .	21 0 21.15	1.73	0.68	IV.	4	46.442	12 39.30	12.55	1.24	21 0 23.56	23 13.09
16	8	. .	. .	0.	. .	. .	. .	. .	1 17.24	1.72	0.69	.	5	44.178	15 2.36	12.47	1.62	1 19.65	25 36.45
17	8	. .	. .	56.	13.	31.	. .	. .	2 13.36	1.71	0.70	IV.	5	43.712	15 31.67	12.39	1.72	2 15.77	26 5.78
18	8	. .	56.8	13.8	. .	. .	. .	. .	4 31.08	1.70	0.70	III.	4	42.342	16 56.35	12.20	1.92	4 33.48	27 30.47
19	9	. .	. .	. .	40.2	57.2	. .	. .	4 40.10	1.70	0.71	IV.	4	40.637	18 43.75	12.19	2.22	4 42.51	29 15.16
20	9	. .	. .	. .	. .	47.	4.	. .	5 29.78	1.69	0.80	.	2	16.602	43 55.21	12.12	6.28	5 32.27	54 33.61
21	10	. .	. .	28.	. .	. .	. .	. .	8 45.21	1.66	0.81	.	2	16.602	43 54.77	11.85	6.28	8 47.68	54 32.90
22	9	. .	13.	30.	47.	. .	. .	. .	9 47.12	1.65	0.75	IV.	3	31.423	28 30.91	11.76	3.76	9 49.52	39 6.43
23	10	. .	10.	27.2	. .	. .	. .	. .	12 44.39	1.63	0.68	III.	5	49.055	9 56.16	11.54	0.79	12 46.70	20 28.49
24	10	. .	3.	. .	38.	. .	. .	. .	14 37.64	1.62	0.78	IV.	3	23.000	37 19.18	11.39	5.19	14 40.04	47 55.76
25	6	. .	. .	53.	10.	26.7	. .	. .	15 9.85	1.61	0.80	IV.	3	20.602	39 49.60	11.34	5.60	15 12.26	50 26.54
26	8	. .	26.	. .	. .	. .	. .	. .	17 0.33	1.60	0.70	.	5	45.678	13 27.82	11.19	1.37	17 2.63	24 0.38
27	8	. .	. .	. .	. .	20.2	37.	. .	17 2.90	1.60	0.81	.	2	18.198	42 15.10	11.19	6.01	17 5.31	52 52.30
28	9	. .	49.8	. .	. .	. .	. .	. .	19 24.25	1.58	0.83	.	2	15.088	45 29.28	11.01	6.54	19 26.66	56 6.83
29	9	. .	. .	. .	. .	56.	. .	. .	19 38.83	1.58	0.79	.	3	26.082	34 5.67	11.00	4.67	19 41.20	44 41.34
30	10	. .	. .	. .	. .	6.	. .	. .	21 20 48.96	+ 1.57	+0.72	.	5	42.702	−16 35.07	−10.90	− 1.86	21 20 51.25	−25 27 7.83

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Oct. 14		. .	. .	. .	. .	. .	359 59 61.28	

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 208	Oct. 14, 20 20	74 32 {30.2 / 29.8}	29.8 / 30.	36.4 / 36.4	25. / 26.2	28. / 28.8	19. / 19.4	28.25	. .	. .	. .	60.5		
	20 40	. .	. .	. .	. .	. .	. .	. .	29.972	61.	53.2	. .	59.	60.
	21 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	52.6	. .	59.	55.
	22 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	51.			
	23 0	. .	. .	. .	. .	. .	. .	. .	29.966	57.8	49.2			
	23 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.9			
	23 40	. .	. .	. .	. .	. .	. .	. .	29.960	56.9	48.6			
	24 0	. .	. .	. .	. .	. .	. .	. .	29.956	56.4	48.2			

REMARKS.

(207) 75. Right ascension differs 12^s from Arg. Z. 256, 107; and Mer. Cir., 1848, October 14.

(208) 4. Micrometer reading assumed as $22^r.516$, not $17^r.516$.

(208) 9. Transit over T. II assumed as recorded over T. III.

(208) 10. Micrometer reading assumed as $14^r.425$, not $19^r.425$.

[(207) 74. Precedes 75. 6^s.]

ZONE 208. OCTOBER 14. S. $D_0 = -25° 10' 20''$—Continued.

No.	Mag.	Seconds of Transit: I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
31	9	. .	. .	. .	. .	0.2	17.	. .	21 21 42.91	+ 1.56	+0.81	.	3	20.262	−40 10.87	−10.84	− 5.65	21 21 45.28	−25 50 47.36
32	8	. .	. .	. .	. .	16.	. .	. .	23 58.69	1.54	0.84	.	2	13.748	46 54.11	10.67	6.77	24 1.07	57 31.55
33	10	. .	. .	. .	2.	19.	. .	. .	25 1.82	1.53	0.82	.	2	17.225	43 16.01	10.59	6.18	25 4.19	53 52.78
34	8	. .	1.	18.	. .	. .	9.8	. .	26 35.44	1.52	0.84	.	2	12.298	48 24.35	10.48	7.01	26 37.80	59 1.84
35	9	. .	24.	. .	58.8	. .	. .	. .	28 58.51	1.50	0.77	.	3	29.309	30 43.54	10.30	4.11	29 0.78	41 17.95
36	8	. .	40.8	58.	. .	. .	. .	. .	31 15.22	1.48	0.83	.	2	17.285	43 11.62	10.14	6.16	31 17.53	53 47.92
37	9	. .	. .	. .	32.2	49.	. .	. .	31 32.04	1.48	0.71	.	5	47.410	11 39.68	10.12	1.07	31 34.23	22 10.87
38	7	. .	33.	40.	. .	. .	. .	. .	32 57.32	1.47	0.82	.	3	19.033	41 27.95	10.01	5.87	32 59.61	52 3.83
39	9	. .	. .	. .	. .	. .	55.	. .	33 20.88	1.47	0.70	.	5	49.562	9 24.45	9.99	0.71	33 23.05	19 55.15
40	7	. .	20.2	37.5	. .	. .	. .	. .	35 54.60	1.45	0.76	.	3	34.799	24 58.83	9.81	3.19	35 56.81	35 31.83
41	8	. .	2.6	. .	36.5	. .	. .	. .	37 36.66	1.43	0.74	.	4	39.627	19 46.19	9.69	2.37	37 38.03	30 18.25
42	9	. .	. .	. .	22.	39.	. .	. .	38 21.85	1.43	0.80	.	3	25.170	35 3.14	9.64	4.81	38 24.08	45 37.59
43	9	. .	42.8	0.	16.8	. .	. .	. .	41 17.04	1.41	0.82	.	2	20.163	40 11.42	9.44	5.67	41 19.27	50 46.53
44	10	. .	. .	. .	0.5	. .	. .	. .	43 4.88	1.39	0.81	.	3	25.895	34 17.47	9.32	4.69	43 7.08	44 51.48
45	11	. .	. .	. .	. .	34.	. .	. .	45 16.77	1.37	0.83	.	3	21.002	39 24.27	9.18	5.68	45 18.97	49 59.13
46	11	. .	. .	45.	. .	. .	. .	. .	48 2.22	1.35	0.73	.	5	43.959	15 15.98	9.00	1.65	48 4.30	25 46.63
47	8	. .	24.	. .	58.5	. .	. .	. .	50 58.36	1.33	0.72	.	5	48.293	10 43.86	8.81	0.92	50 0.41	21 13.59
48	8	. .	. .	. .	. .	7.	. .	. .	51 49.89	1.32	0.78	.	3	31.688	28 13.91	8.76	3.72	51 51.99	38 46.39
49	8	. .	. .	. .	. .	57.	. .	. .	52 39.84	1.31	0.80	.	3	27.122	33 0.44	8.71	4.49	52 41.95	43 33.64
50	9	. .	. .	. .	. .	. .	43.	. .	53 8.91	1.31	0.77	.	4	35.122	24 29.89	8.68	3.14	53 10.99	35 1.71
51	8	. .	. .	3.	. .	. .	. .	. .	55 20.17	1.29	0.78	.	4	35.950	23 37.25	8.55	2.99	55 22.24	34 8.79
52	9	. .	. .	. .	. .	. .	53.	. .	55 18.91	1.29	0.77	.	4	37.608	21 53.80	8.55	2.71	55 20.97	32 25.06
53	9	. .	. .	. .	. .	. .	48.	. .	56 13.86	1.28	0.84	.	2	20.400	39 57.13	8.49	5.64	56 15.98	50 31.26
54	9	. .	44.	. .	18.	. .	. .	. .	21 59 18.10	1.26	0.76	.	4	44.140	15 2.93	8.30	1.62	21 59 20.12	25 32.85
55	10	. .	. .	7.	. .	. .	. .	. .	22 1 24.23	1.25	0.87	.	2	13.920	46 42.83	8.19	6.75	22 1 26.35	57 17.77
56	10	. .	. .	. .	. .	13.	. .	. .	2 55.88	1.23	0.80	.	3	30.588	29 23.05	8.10	3.91	2 57.91	39 55.06
57	6	. .	42.	59.	. .	. .	. .	. .	5 16.33	1.21	0.87	.	2	15.829	44 42.67	7.97	6.42	5 18.41	55 17.06
58	8	. .	. .	. .	. .	52.	9.	. .	5 34.94	1.21	0.74	.	4	47.628	11 24.91	7.95	1.03	5 36.89	21 53.89
59	9	. .	. .	. .	. .	9.	26.	. .	6 51.86	1.20	0.82	.	3	26.672	33 28.67	7.88	4.57	6 53.88	44 1.12
60	.	. .	. .	. .	. .	49.	56.	. .	8	. .	. .	.	.	.578	. . .	7	. .	8	
61	10	. .	42.	. .	16.5	. .	. .	. .	11 16.36	1.17	0.76	.	4	46.282	12 49.28	7.64	1.25	11 18.29	23 18.17
62	8.9	. .	. .	. .	22.8	. .	. .	. .	12 22.72	1.16	0.88	.	2	18.965	41 26.76	7.58	5.88	12 24.76	52 0.22
63	10	. .	. .	. .	. .	. .	23.8	. .	12 49.64	1.15	0.88	.	2	18.018	42 26.41	7.56	6.05	12 51.67	53 0.02
64	6	. .	32.	49.5	6.3	. .	. .	. .	15 6.40	1.14	0.80	.	3	39.960	20 37.76	7.44	2.31	15 8.34	31 7.51
65	10	. .	43.5	. .	17.5	. .	. .	. .	17 17.60	1.12	0.80	.	4	40.619	18 43.93	7.33	2.21	17 19.52	29 13.47
66	10	. .	22.	39.	. .	. .	. .	. .	20 56.30	1.09	0.77	.	5	49.705	9 15.04	7.14	0.67	20 58.16	19 42.85
67	10	. .	. .	36.	. .	10.5	. .	. .	21 53.33	1.08	0.81	.	4	41.602	17 42.67	7.10	2.04	21 55.22	28 11.81
68	10	. .	. .	. .	25.5	. .	. .	. .	23 25.37	1.07	0.82	.	4	41.604	17 42.86	7.02	2.04	23 27.26	28 11.92
69	9	. .	. .	. .	21.8	. .	56.	. .	24 21.79	1.06	0.79	.	5	46.452	12 39.80	6.98	1.22	24 23.64	23 8.00
70	10	. .	. .	38.2	. .	. .	. .	. .	27 55.41	1.03	0.92	.	2	17.445	43 1.97	6.81	6.15	27 57.36	53 34.93
71	9	. .	49.	. .	. .	. .	. .	. .	29 23.45	1.02	0.93	.	2	14.609	45 59.32	6.74	6.63	29 25.40	56 32.69
72	10	. .	. .	. .	42.	59.	. .	. .	29 41.84	1.02	0.92	.	2	18.820	36 22.09	6.73	5.05	29 43.78	25 46 53.87
73	7.6	. .	42.2	59.3	16.2	. .	51.	. .	37 16.54	0.96	0.97	.	2	9.909	50 53.90	6.40	7.44	37 18.47	26 1 27.74
74	7.8	. .	13.	31.3	47.	4.2	. .	. .	40 47.45	0.94	0.94	.	3	17.932	32 9.54	6.26	4.34	40 49.33	25 42 40.14
75	10	. .	51.5	. .	. .	. .	. .	. .	44 25.94	0.91	0.96	.	2	17.509	42 57.52	6.12	6.14	44 27.81	25 53 29.78
76	9	. .	. .	. .	40.	. .	. .	. .	44 39.96	0.91	0.99	.	2	11.140	49 37.92	6.11	7.22	44 41.86	26 0 11.25
77	8	. .	. .	. .	. .	. .	29.	. .	44 54.82	0.90	0.97	.	2	14.570	46 2.70	6.10	6.64	44 56.69	25 56 35.44
78	7	. .	. .	. .	. .	24.	41.	. .	46 6.84	0.90	0.94	.	3	24.058	36 12.64	6.05	5.03	46 8.68	46 43.72
79	10	. .	. .	. .	. .	12.5	. .	. .	22 49 55.29	+ 0.87	+0.95	.	3	22.772	−37 33.23	− 5.91	− 5.24	22 49 57.11	−25 48 4.38

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle: A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom.: At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 208	Oct. 14, 24 10	74 32 {29. / 28.8	31.8 / 31.8	37. / 36.5	27.2 / 28.0	28.2 / 28.9	18.6 / 19.0	28.73	. .	. .	. .	53.		

REMARKS.

(208) 38. Time of transit over T. II assumed as 23^s instead of 33^s.

(208) 64. Micrometer reading assumed as $38^r.960$ instead of $39^r.960$.

(208) 72. Micrometer reading assumed as $23^r.820$, not $18^r.820$.

(208) 74. Micrometer reading assumed as $27^r.932$, not $17^r.932$.

ZONE 208. OCTOBER 14. S. $D_0 = -25° 10' 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
80	7.6	. .	22.	39.	56.	. .	. .	. .	22 51 56.21	+ 0.85	+1.00	.	2	13.379	−47 16.93	− 5.84	− 6.84	22 51 58.06	−25 57 49.61
81	10	. .	. .	. .	. .	51.	8.	. .	52 33.84	0.85	0.95	V.	3	23.382	36 55.17	5.82	5.14	52 35.64	47 26.13
82	9	. .	. .	. .	. .	22.	39.	. .	54 4.77	0.84	0.99	V.	2	17.002	43 30.05	5.77	6.22	54 6.60	54 2.04
83	10	. .	. .	. .	48.	5.	. .	. .	22 55 47.84	0.83	0.98	V.	2	20.336	40 1.14	5.72	5.66	22 55 49.65	50 32.52
84	9	. .	. .	. .	50.	7.	23.8	. .	23 2 49.84	0.77	0.93	.	4	37.563	21 56.54	5.50	2.72	23 2 51.54	25 32 24.76
85	.	. .	17.5	. .	. .	. .	. .	. .	6 51.98	0.74	1.05	.	1	9.460	51 23.18	5.39	7.53	6 53.77	26 1 56.10
86	6.7	. .	. .	. .	16.5	33.5	50.5	. .	7 16.39	0.74	0.97	IV.	3	30.362	29 37.48	5.37	3.94	7 18.10	25 40 6.79
87	9	. .	. .	5.2	22.	39.5	. .	. .	10 22.19	0.71	1.02	IV.	3	21.632	38 45.01	5.28	5.44	10 23.92	49 15.73
88	10	. .	48.	5.	22.	. .	. .	. .	12 22.13	0.70	0.96	IV.	3	38.056	21 34.57	5.24	2.63	12 23.79	32 2.44
89	7	. .	. .	5.	22.	39.6	. .	. .	13 22.16	0.69	1.00	IV.	3	28.900	31 8.95	5.21	4.20	13 23.85	41 38.36
90	8	. .	40.	57.2	14.	31.5	. .	. .	15 14.27	0.68	0.96	IV.	4	43.548	15 41.07	5.17	1.71	15 15.91	26 7.95
91	8	. .	0.	17.	34.	51.	. .	. .	19 34.13	0.65	0.95	IV.	5	51.502	7 22.79	5.06	0.37	19 35.73	17 48.22
92	9	. .	. .	27.	44.	. .	. .	. .	23 44.06	0.62	0.98	IV.	4	46.630	12 27.38	4.99	1.19	23 45.66	22 53.56
93	10	. .	. .	. .	52.	. .	. .	. .	24 51.88	0.61	1.07	.	2	25.145	34 59.25	4.97	4.84	24 53.56	45 29.06
94	7	. .	30.	47.2	5.	23.	. .	. .	26 4.86	0.60	1.06	IV.	3	29.222	30 48.94	4.94	4.15	26 6.52	41 18.03
95	8	. .	24.	40.5	58.	. .	. .	. .	29 57.95	0.57	1.08	IV.	3	28.214	31 52.18	4.87	4.32	29 59.60	25 42 21.37
96	10	. .	. .	. .	. .	32.3	49.5	. .	30 15.10	0.57	1.17	V.	2	8.379	52 30.96	4.87	7.71	30 16.84	26 3 3.54
97	10	. .	45.	. .	. .	. .	. .	. .	35 19.33	0.54	1.01	.	4	52.242	6 34.38	4.80	0.25	35 20.88	25 16 59.43
98	8	. .	. .	. .	7.	24.2	41.3	. .	36 7.06	0.53	1.08	IV.	3	34.500	25 17.77	4.79	3.24	36 8.67	35 45.80
99	9	. .	2.	19.	36.	. .	. .	. .	39 36.16	0.51	1.02	IV.	5	51.620	8 18.06	4.74	0.35	39 37.69	18 43.15
100	6	. .	19.5	37.	54.	11.	28.	. .	44 53.93	0.47	1.16	IV.	3	21.680	38 41.93	4.71	5.43	44 55.56	49 12.07
101	5.6	. .	10.	27.2	44.	2.	. .	. .	48 44.37	0.44	1.12	IV.	3	35.830	23 54.13	4.68	3.01	48 45.93	34 21.82
102	6	. .	26.	43.	0.	. .	. .	. .	51 0.14	0.43	1.12	IV.	4	41.023	18 19.27	4.67	2.14	51 1.69	28 46.08
103	9	. .	. .	. .	. .	. .	21.	. .	52 46.91	0.42	1.13	.	4	37.499	22 0.80	4.67	2.73	52 48.46	32 28.20
104	7	. .	53.5	10.	27.	44.	. .	. .	56 27.22	0.39	1.13	IV.	4	44.203	14 59.79	4.66	1.60	56 28.74	25 26.05
105	8	. .	0.	17.	. .	. .	. .	. .	58 34.29	0.38	1.11	.	5	49.102	9 52.95	4.65	0.76	58 35.78	20 18.36
106	7	. .	. .	. .	58.5	15.8	32.	. .	23 58 58.35	+ 0.38	+1.14	IV.	4	42.532	−16 44.68	− 4.65	− 1.88	23 58 59.87	−25 27 11.21

ZONE 209. NOVEMBER 28. C. $D_0 = -27° 3' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	37.2	45.	12.5	. .	. .	. .	0 27 12.31	− 8.79	−0.47	III.	3	28.281	−31 48.04	− 1.16	−10.31	0 27 3.05	−27 34 59.51
2	10	. .	. .	. .	43.5	. .	. .	. .	27 43.35	8.80	0.46	IV.	3	28.954	31 5.62	1.15	10.18	27 34.09	34 16.95
3	9	. .	. .	. .	20.8	38.2	. .	. .	28 20.69	8.80	0.56	V.	3	22.538	37 48.04	1.14	11.35	28 11.33	41 0.53
4	9	. .	. .	. .	. .	. .	30.	. .	28 55.35	8.81	0.46	VI.	3	28.051	32 1.84	1.13	10.35	28 46.08	35 13.32
5	10	. .	. .	. .	57.3	. .	. .	. .	31 57.18	8.84	0.15	IV.	5	47.326	11 44.95	1.11	6.91	31 48.19	14 52.97
6	9	. .	. .	. .	. .	58.	15.1	. .	32 40.53	8.85	0.45	V.	3	32.617	27 15.68	1.11	9.53	32 31.23	30 26.32
7	10	. .	. .	. .	. .	12.8	. .	. .	33 55.32	8.86	0.53	V.	3	23.689	36 35.72	1.10	11.15	33 45.93	39 47.97
8	9	. .	. .	26.2	42.8	0.	. .	. .	35 42.98	8.88	0.33	IV.	3	35.758	23 58.71	1.09	8.98	35 33.77	27 8.78
9	8.9	. .	. .	52.	9.2	26.5	44.0	. .	37 9.27	8.89	0.23	IV.	4	41.790	17 31.05	1.08	7.90	37 0.15	20 40.03
10	9	. .	54.3	11.8	29.	46.6	4.1	. .	40 29.19	8.93	0.64	IV.	2	16.007	44 32.26	1.06	12.52	40 19.62	47 45.84
11	8.9	. .	. .	. .	. .	35.8	54.	. .	41 18.92	8.93	0.10	V.	5	50.652	8 16.08	1.06	6.34	41 9.89	11 23.48
12	9	. .	32.8	50.3	7.3	24.9	42.3	. .	45 7.59	8.97	0.11	IV.	5	49.237	9 44.99	1.06	6.57	44 58.51	12 52.62
13	9.10	. .	. .	12.2	29.2	46.5	. .	. .	46 29.34	8.98	0.16	IV.	5	46.128	13 0.08	1.07	7.13	46 20.20	16 8.28
14	9	. .	22.	39.5	56.3	. .	. .	. .	48 56.71	9.01	0.07	III.	5	52.274	6 34.19	1.07	6.01	48 47.63	9 41.27
15	9	. .	35.4	52.8	10.2	. .	. .	. .	51 10.32	9.03	0.73	III.	2	9.844	50 58.77	1.08	13.64	51 0.56	54 13.49
16	10	. .	. .	. .	32.2	49.5	. .	. .	51 32.09	9.03	0.32	V.	3	35.806	23 55.45	1.08	8.97	51 22.74	27 5.50
17	10	. .	. .	. .	19.	. .	. .	. .	54 18.90	9.06	0.57	IV.	2	20.419	39 55.80	1.10	11.73	54 9.27	43 8.63
18	10	. .	5.7	. .	39.3	. .	. .	. .	0 55 39.97	− 9.07	−0.65	II.	2	15.825	−44 42.92	− 1.11	−12.56	0 55 30.25	−27 47 56.59

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Nov. 28,		. .	. .	. .	. .	. .	359 59 57.23	30.0131

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 209	Nov. 28,	0 25	76 24 58.7	61.5	68.2	57.6	56.4	48.7	58.52	30.255	45.2	33.4	43.8	40.5	47.5
		0 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.7			
		1 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.9			
		1 25	. .	. .	. .	. .	. .	. .	. .	30.246	42.	. .	37.		
		1 35	58.7	61.3	68.5	57.4	55.2	48.6	58.28	. .	. .	. .	42.5		
		1 50	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.7			
		2 0	. .	. .	. .	. .	. .	. .	. .	30.252	41.	32.2			
		2 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.			
		2 30	58.1	62.1	68.2	58.4	55.1	48.0	58.32	30.242	40.5	30.1	41.5	37.2	. .

REMARKS.

(208) 94. Time of transit over T. IV assumed as 5^s instead of $0^s.5$.

(208) 99. Micrometer reading assumed as $50^r.620$ instead of $51^r.620$.

External thermometer assumed as 31°.9.

ZONE 209. NOVEMBER 28. C. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	9.10	. .	. .	. .	7.7	25.3	42.6	. .	0 56 7.71	− 9.07	−0.74	V.	2	9.175	−51 40.98	− 1.11	−13.76	0 55 57.90	−27 54 55.85
20	9	. .	. .	12.7	28.9	47.3	. .	. .	58 29.58	9.10	0.60	IV.	2	18.198	42 14.99	1.13	12.12	58 19.88	45 28.24
21	9	. .	. .	. .	. .	0.3?	. .	. .	58 42.92	9.10	0.33	V.	3	34.951	24 49.16	1.13	9.11	58 33.49	27 59.40
22	8.9	. .	. .	. .	. .	8.8	26.8	. .	0 58 51.78	9.10	0.39	V.	3	31.165	28 46.85	1.13	9.79	0 58 42.29	31 57.77
23	9	. .	. .	. .	44.	. .	19.2	. .	1 0 44.19	9.12	0.63	VI.	2	16.369	44 9.93	1.15	12.48	1 0 34.44	47 23.56
24	9	. .	2.	. .	36.8	54.	. .	. .	2 36.72	9.13	0.54	IV.	3	22.595	37 44.59	1.18	11.34	2 27.05	40 57.11
25	9	. .	. .	. .	9.8	27.	44.3	. .	5 9.69	9.16	0.01	V.	5	55.462	3 14.81	1.21	5.46	5 0.52	6 21.48
26	9.10	. .	. .	21.2	38.2	. .	. .	. .	10 38.42	9.21	0.64	III.	2	15.466	45 6.07	1.29	12.64	10 28.57	48 20.00
27	9	. .	. .	. .	. .	29.7	. .	. .	11 12.22	9.21	0.49	V.	3	24.426	35 49.68	1.30	11.02	11 2.52	39 2.00
28	7	. .	. .	. .	. .	. .	17.2	. .	11 42.54	9.22	0.17	VI.	5	44.291	14 55.33	1.31	7.44	11 33.15	18 4.08
29	9	. .	. .	17.4	. .	52.3	. .	. .	13 34.86	9.24	0.38	IV.	3	31.059	28 53.62	1.35	9.81	13 25.24	32 4.78
30	9	. .	. .	28.3	. .	3.2	. .	. .	14 45.78	9.25	0.32	IV.	3	35.741	23 59.78	1.37	8.97	14 36.21	27 10.12
31	10	. .	. .	. .	. .	. .	31.7	. .	14 57.06	9.25	0.35	VI.	3	33.415	26 25.42	1.38	9.39	14 47.46	29 36.19
32	9	. .	0.2	17.3	35.	52.3	. .	. .	18 34.96	9.28	0.11	IV.	5	47.779	11 16.80	1.46	6.81	18 25.57	14 25.07
33	7.8	. .	32.9	50.6	8.	25.3	42.4	. .	21 7.86	9.31	0.71	IV.	2	10.564	50 13.72	1.52	13.52	20 57.84	53 28.76
34	8.9	. .	33.3	51.	8.3	26.	43.5	. .	23 8.44	9.32	0.59	IV.	2	18.785	41 38.12	1.57	12.04	22 58.53	44 51.73
35	9.10	. .	. .	3.3	. .	. .	. .	. .	25 20.73	9.34	0.43	III.	3	28.372	31 42.38	1.64	10.31	25 10.96	34 54.33
36	9	. .	. .	. .	26.8	. .	1.5	. .	25 26.76	9.34	0.19	VI.	5	43.097	16 10.21	1.64	7.66	25 17.23	19 19.51
37	10	. .	. .	. .	. .	. .	2.6	. .	25 27.94	9.34	0.19	VI.	5	43.187	16 4.63	1.64	7.64	25 18.41	19 13.91
38	9	. .	. .	42.3	0.3	. .	. .	. .	35 0.03	9.43	0.02	III.	5	53.023	5 46.97	1.94	5.89	34 50.58	8 54.80
39	9.10	. .	. .	57.2	. .	. .	. .	. .	38 14.69	9.46	−0.21	III.	4	41.578	17 44.18	2.06	7.93	38 5.02	20 54.17
40	9	. .	. .	. .	. .	43.2	. .	. .	38 25.97	9.46	+0.04	V.	5	55.999	3 43.04	2.06	5.54	38 16.55	6 50.64
41	8.9	. .	. .	. .	. .	. .	19.8	. .	38 45.10	9.46	−0.01	VI.	5	53.921	5 53.33	2.07	5.91	38 35.63	9 1.31
42	9	. .	. .	. .	53.2	10.5	27.5	. .	40 53.01	9.48	0.34	V.	3	33.691	26 8.23	2.16	9.34	40 43.19	29 19.73
43	9.10	. .	. .	. .	. .	6.8	. .	. .	41 49.49	9.49	0.17	V.	4	44.146	15 3.49	2.19	7.47	41 39.83	18 13.15
44	9	. .	. .	. .	. .	. .	42.5	. .	43 7.78	9.50	0.58	VI.	2	18.408	42 2.20	2.25	12.11	42 57.70	45 16.56
45	9	. .	42.3	. .	16.5	34.3	. .	. .	45 16.82	9.52	0.67	IV.	2	12.597	48 6.24	2.34	13.15	45 6.63	51 21.73
46	10	. .	. .	. .	. .	8.2	. .	. .	45 50.89	9.53	0.17	V.	5	43.715	15 31.48	2.36	7.54	45 41.19	18 41.38
47	10	. .	. .	. .	. .	10.2	. .	. .	45 52.88	9.53	0.19	V.	5	42.265	17 2.63	2.36	7.81	45 43.16	20 12.80
48	9	. .	. .	. .	56.8	. .	31.3	. .	48 56.66	9.55	0.10	VI.	5	48.541	10 28.55	2.49	6.68	48 47.01	13 37.72
49	9	. .	56.	13.2	30.7	. .	. .	. .	50 30.72	9.56	0.22	III.	4	39.815	19 34.69	2.56	8.24	50 20.94	22 45.49
50	10	. .	. .	. .	. .	. .	57.?	. .	50 22.37	9.56	0.37	VI.	3	30.472	29 30.07	2.55	9.91	50 12.44	32 42.53
51	9	. .	. .	. .	. .	. .	47.	. .	52 12.26	9.58	0.60	VI.	2	16.544	43 58.91	2.60	12.45	51 2.08	47 13.96
52	9	. .	. .	. .	. .	. .	51.8	. .	52 17.17	9.58	. .	VI.	3	. .	. . .	2.64	. .	52	
53	9	. .	. .	. .	. .	. .	46.2	. .	53 11.53	9.59	0.08	VI.	5	48.875	10 7.39	2.69	6.62	53 1.86	13 16.70
54	7.8	. .	. .	. .	. .	. .	. .	. .	53	. .	. .	VII.	5	52.202	6 38.39	2.69	6.03	53	9 47.11
55	8	. .	20.3	37.9	55.2	12.5	29.5	. .	55 55.12	9.61	0.30	IV.	3	34.948	24 49.48	2.82	9.11	55 45.21	28 1.41
56	9.10	. .	. .	. .	. .	55.2	12.2	. .	56 37.68	9.61	0.36	V.	3	31.281	28 39.63	2.86	9.77	56 27.71	31 52.26
57	9.10	. .	. .	. .	. .	12.5	. .	. .	57 55.18	9.63	0.17	V.	4	42.921	16 20.26	2.92	7.69	57 45.38	19 30.87
58	9.10	. .	. .	44.2	. .	19.	. .	. .	1 59 1.60	9.64	0.37	IV.	3	30.538	29 26.37	2.98	9.91	1 58 51.59	32 39.26
59	10	. .	. .	. .	26.8	43.8	. .	. .	2 1 26.48	9.65	0.55	V.	2	19.154	41 15.15	3.11	11.99	2 1 16.20	44 30.25
60	10	. .	. .	. .	9.1	. .	. .	. .	3 9.02	9.67	0.62	IV.	2	15.017	45 34.36	3.20	12.73	2 58.73	48 50.29
61	9	. .	. .	6.5	23.9	41.7	58.5	. .	4 23.91	9.68	0.73	IV.	2	8.372	52 31.21	3.27	13.97	4 13.50	55 48.45
62	9	. .	. .	. .	40.7	. .	16.3	. .	5 41.11	9.69	0.19	VI.	4	41.789	17 31.37	3.34	7.88	5 31.23	20 42.59
63	8	. .	27.5	45.3	2.5	19.9	37.1	. .	9 2.53	9.72	−0.08	IV.	5	48.817	10 11.15	3.53	6.62	8 52.73	13 21.30
64	8.9	. .	. .	. .	13.2	30.5	48.	. .	12 13.22	9.74	+0.01	V.	5	53.869	4 53.97	3.72	5.72	12 3.49	8 3.41
65	9	. .	. .	. .	. .	8.3	25.2	. .	13 50.49	9.76	−0.76	V.	2	6.452	54 32.28	3.83	14.31	13 39.97	57 50.42
66	7	59.8	17.3	35.	51.9	9.3	26.3	. .	16 51.99	9.78	0.48	IV.	3	22.932	37 23.33	4.02	11.29	16 41.73	40 38.64
67	9	. .	37.2	55.1	12.2	29.8	47.2	. .	2 19 12.32	− 9.80	−0.62	IV.	2	14.495	−46 7.27	− 4.17	−12.83	2 19 1.90	−27 49 24.27

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1847.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 209	Nov. 28,	3 45	76 24 56.4	61.2	66.5	56.5	53.1	45.9	56.60	30.232	39.5	31.5	41.5	37.7	
		4 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.1			
		4 20	. .	. .	. .	. .	. .	. .	. .	30.224	39.	31.			
		4 45	55.3	60.6	66.	56.9	52.9	45.4	56.18	30.220	39.	30.9	40.5	37.2	46.5

REMARKS.

(209) 40. Micrometer reading assumed as $54^r.999$, not $55^r.999$.

(209) 41. Micrometer reading assumed as $52^r.921$, not $53^r.921$.

(209) 43. Declination differs from Arg. Z. 266, 29; 327, 32; 334, 4.

(209) 51. Minutes assumed as 51, not 52.

ZONE 209. NOVEMBER 28. C. $D_0 = -27° 3' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
68	9	. .	. .	23.2	40.2	58.3	. .	. .	2 20 40.54	− 9.81	−0.32	IV.	3	33.326	−26 31.52	− 4.26	− 9.41	2 20 30.41	−27 29 45.19
69	8.9	. .	. .	. .	. .	1.3	18.6	. .	21 43.98	9.81	+0.04	V.	5	55.482	3 12.89	4.34	5.42	21 34.21	6 22.65
70	9.10	. .	24.	41.7	59.2	16.4	. .	. .	23 58.80	9.83	−0.26	IV.	3	37.627	22 1.49	4.50	8.63	23 48.71	25 14.62
71	8	. .	. .	44.5	2.2	19.5	36.5	. .	26 1.96	9.85	0.47	IV.	3	23.504	36 47.64	4.63	11.19	25 51.64	40 3.46
72	9.10	. .	. .	. .	. .	. .	13.5	. .	26 38.69	9.85	0.72	VI.	2	8.528	52 21.55	4.67	13.94	26 28.12	55 40.16
73	9	. .	. .	. .	33.2	. .	. .	. .	28 33.06	9.87	0.26	IV.	4	37.461	22 2.94	4.80	8.66	28 22.93	25 16.40
74	9	. .	. .	. .	16.2	. .	. .	. .	29 16.07	9.87	0.19	IV.	4	41.327	18 0.30	4.85	7.97	29 6.01	21 13.12
75	9.10	. .	. .	. .	. .	49.2	. .	. .	2 29 31.87	9.88	−0.19	V.	4	41.175	18 9.97	4.87	7.99	2 29 21.80	21 22.83
76	9.10	. .	. .	36.4	53.2	11.2	. .	. .	3 50 53.66	10.37	+0.02	IV.	5	51.055	7 50.73	10.22	7.19	3 50 43.31	11 8.14
77	10	. .	. .	16.2	33.	50.2	. .	. .	52 33.11	10.37	−0.23	IV.	3	35.511	24 14.34	10.38	9.00	52 22.51	27 33.72
78	10	. .	. .	. .	. .	28.?	. .	. .	53 10.64	10.38	0.21	V.	3	37.459	22 11.97	10.45	8.65	53 0.05	25 31.07
79	10	. .	. .	. .	. .	19.2	. .	. .	54 1.69	10.38	0.45	V.	3	21.988	38 22.42	10.53	11.47	53 50.86	41 44.42
80	9	. .	. .	. .	. .	. .	58.	. .	54 23.35	10.38	0.14	VI.	4	41.645	17 40.67	10.57	7.90	54 12.83	20 59.14
81	9	. .	6.7	24.2	41.2	. .	. .	. .	56 41.45	10.39	0.19	III.	3	37.978	21 39.46	10.81	8.55	56 30.87	24 58.72
82	10	. .	. .	. .	. .	7.2	. .	. .	3 56 49.88	10.39	0.13	III.	4	41.953	17 20.52	10.82	7.84	3 56 39.36	20 39.18
83	9.10	. .	. .	44.3	0.3	19.	36.1	. .	4 1 1.24	10.41	0.32	V.	3	30.928	29 1.52	11.25	9.83	4 0 50.51	32 22.60
84	9.10	. .	. .	. .	. .	. .	. .	. .	1	. .	0.56	VII.	2	14.772	45 49.78	11.25	12.83	1	49 13.86
85	10	. .	32.3	. .	7.5	. .	. .	. .	5 7.29	10.43	−0.02	II.	4	47.536	11 29.76	11.68	6.82	4 56.84	14 48.26
86	10	. .	. .	. .	. .	. .	47.2	. .	5 12.51	10.43	+0.05	VI.	5	53.046	5 45.59	11.69	5.82	5 2.13	9 3.10
87	10	. .	. .	. .	. .	36.2	. .	. .	6 18.83	10.43	−0.22	V.	3	36.182	23 32.04	11.80	8.87	6 8.18	26 52.71
88	10	. .	. .	. .	. .	. .	10.?	. .	6 35.34	10.44	−0.11	VI.	4	43.432	15 48.44	11.83	7.57	6 24.79	19 7.84
89	9.10	. .	18.7	. .	53.2	. .	. .	. .	12 53.34	10.46	+0.10	II.	5	55.968	2 41.81	12.52	5.28	12 42.98	5 59.61
90	9.10	. .	. .	. .	. .	. .	55.	. .	13 20.33	10.46	−0.39	VI.	2	25.248	34 53.04	12.56	10.88	13 9.48	38 16.48
91	9	. .	7.9	25.2	43.2	0.2	. .	. .	20 42.83	10.49	0.36	IV.	3	27.141	32 59.44	13.39	10.54	20 31.98	36 23.37
92	9.10	. .	. .	. .	6.2	. .	40.7	. .	22 6.05	10.50	0.44	V.	3	22.371	37 58.59	13.55	11.41	21 55.11	41 23.55
93	9.10	. .	. .	. .	24.3	42.	59.2	. .	24.47	. .	. .	V.	4	42.435	16 51.13	13.	7.75	(24)	20 11.88
94	9.10	. .	9.2	27.2	. .	. .	. .	. .	27 44.49	10.51	0.60	III.	2	12.346	48 21.71	14.19	13.27	27 33.38	51 49.17
95	10	. .	. .	11.3	28.2	. .	. .	. .	28 28.45	10.51	0.50	III.	2	18.266	42 10.48	14.28	12.17	28 17.44	45 36.93
96	9.10	. .	. .	. .	36.2?	. .	. .	. .	29 36.11	10.52	0.53	IV.	2	16.378	44 19.18	14.41	12.51	29 25.06	47 46.10
97	10	. .	. .	. .	38.2	. .	. .	. .	30 38.11	10.53	0.49	IV.	2	18.274	42 10.29	14.53	12.17	30 27.09	45 36.99
98	9	. .	. .	. .	. .	. .	. .	. .	31	. .	0.12	VII.	4	41.432	17 53.91	14.61	7.93	31	21 16.45
99	8.9	. .	. .	. .	7.2	25.	42.3	. .	32 7.44	10.53	0.31	V.	3	29.612	30 24.22	14.70	10.09	31 56.60	33 49.01
100	9	. .	. .	. .	. .	. .	23.6	. .	32 48.93	10.53	0.03	VI.	4	47.606	11 26.37	14.78	6.80	32 38.37	14 47.95
101	9.10	. .	. .	. .	. .	13.8	. .	. .	33 56.33	10.54	0.38	V.	3	24.961	35 15.92	14.91	10.95	33 45.41	38 41.78
102	9.10	. .	. .	. .	. .	. .	22.8	. .	34 48.07	10.54	0.49	VI.	3	18.689	41 49.02	15.02	12.10	34 37.04	45 16.14
103	9	. .	25.3	43.2	0.3	. .	. .	. .	37 0.36	10.54	0.08	III.	4	44.084	15 6.82	15.28	7.45	36 49.74	18 29.55
104	8	. .	49.3	7.5	24.5	42.1	59.3	. .	38 24.56	10.55	0.58	IV.	2	12.651	48 2.78	15.40	13.22	38 13.43	51 31.40
105	9	. .	. .	47.2	4.2	. .	. .	. .	40 4.39	10.55	0.09	III.	4	43.186	16 3.25	15.64	7.61	39 53.75	19 26.50
106	10	. .	. .	. .	. .	. .	5.5?	. .	40 30.87	10.55	0.29	VI.	3	30.908	29 2.46	15.69	9.84	40 20.03	32 27.99
107	8.9	. .	. .	22.5	39.5	57.2	14.5	. .	44 39.76	10.56	0.13	IV.	4	41.048	18 17.70	16.19	8.00	44 29.07	21 41.89
108	9	. .	. .	. .	. .	31.3	48.2	. .	4 45 13.60	−10.56	−0.51	V.	2	17.292	−43 12.06	−16.25	−12.35	4 45 2.53	−27 46 40.66

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. Aug. 18,	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(209) 92. Transit over T. VI assumed to have been recorded as over T. V.

(209) 104. Times of transit over T.'s IV, V, and VI assumed as $24^s.5$, $42^s.1$, and $59^s.3$, respectively.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 210. NOVEMBER 28. C. $D_0 = -28°\ 18'\ 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	9.3	. .	44.7	2.1	. .	6 1 26.94	− 9.69	−0.91	IV.	2	12.982	−47 41.96	− 1.07	− 8.55	6 1 16.34	−29 6 31.58
2	9	. .	. .	. .	. .	. .	58.1	. .	2 23.01	9.69	0.12	VI.	5	53.015	5 47.48	1.21	0.21	2 13.20	28 24 28.90
3	9.10	. .	. .	57.	. .	. .	. .	. .	5 14.75	9.68	0.19	III.	5	50.795	8 6.78	1.62	0.67	5 4.88	26 49.07
4	9	. .	. .	. .	27.2	45.	. .	. .	5 27.28	9.68	0.33	V.	4	43.841	15 22.50	1.66	2.11	5 17.27	34 6.27
5	8.9	. .	. .	. .	. .	35.	52.5	. .	7 17.48	9.68	0.19	V.	5	51.871	6 59.42	1.93	0.45	7 7.61	28 25 41.80
6	8.9	. .	. .	. .	. .	. .	28.2	. .	15 53.03	9.67	1.03	VI.	2	14.369	46 15.36	3.18	− 8.26	15 42.33	29 5 6.80
7	9	. .	. .	15.2	. .	50.2	7.4	. .	21 32.67	9.67	0.37	IV.	5	49.861	3 51.91	4.03	+ 0.17	21 22.63	28 22 35.77
8	9	. .	48.2	6.3	23.5	41.2	. .	. .	24 23.65	9.66	0.51	IV.	4	44.522	14 39.77	4.46	− 1.96	24 13.48	28 33 26.19
9	9	. .	42.7	0.5	18.3	36.1	53.5	. .	26 18.25	9.66	1.27	IV.	2	7.619	53 18.29	4.75	9.69	26 7.32	29 12 12.73
10	9	. .	. .	. .	. .	6.5	. .	. .	27 48.68	9.65	1.17	V.	2	13.563	47 5.85	4.98	8.44	27 37.86	5 59.27
11	9	. .	. .	. .	. .	. .	33.2	. .	28 58.00	9.65	1.24	VI.	2	10.011	50 48.44	5.15	9.18	28 47.11	29 9 42.77
12	8	. .	53.2	11.1	28.5	46.1	. .	. .	30 28.54	9.65	0.75	IV.	3	35.636	24 6.43	5.38	3.83	30 18.14	28 42 55.64
13	8	. .	. .	4.	21.3	39.3	. .	. .	31 21.55	9.65	0.61	IV.	4	43.153	16 5.64	5.51	2.25	31 11.29	34 53.40
14	9	. .	. .	. .	34.3	. .	. .	. .	32 34.17	9.64	0.99	IV.	3	24.570	35 40.40	5.68	6.14	32 23.54	54 32.22
15	9	. .	. .	. .	. .	0.7	. .	. .	32 43.15	9.64	0.72	V.	5	38.499	20 58.99	5.70	3.23	32 32.79	39 47.92
16	10	. .	. .	. .	. .	. .	39.5?	. .	33 4.44	9.64	0.68	VI.	5	40.607	18 46.69	5.76	2.78	32 54.12	37 35.23
17	9	. .	. .	47.	4.5	22.5	. .	. .	35 4.64	9.64	0.80	IV.	4	35.475	24 7.56	6.06	3.87	34 54.20	28 42 57.49
18	8	. .	51.5	9.4	. .	44.2	. .	. .	37 26.82	9.63	1.27	IV.	2	13.026	46 36.46	6.40	8.36	37 15.92	29 5 31.22
19	9.10	. .	. .	. .	31.1	48.5	. .	. .	37 30.88	9.63	1.12	V.	3	20.761	39 39.37	6.42	6.94	37 20.13	28 58 32.73
20	9	. .	. .	48.5	6.2	23.7	. .	. .	39 6.10	9.63	0.87	IV.	3	33.952	25 51.97	6.65	4.17	38 55.60	44 42.79
21	8.9	. .	. .	58.2	16.	33.5	. .	. .	40 15.90	9.63	0.79	IV.	3	39.052	20 32.06	6.82	3.12	40 5.48	39 22.00
22	9	. .	. .	. .	4.5	22.3	39.6	. .	41 4.50	9.63	1.05	V.	3	26.748	33 23.83	6.94	5.69	40 53.82	52 16.46
23	9	. .	. .	. .	. .	. .	9.	. .	41 33.91	9.62	0.51	VI.	5	53.721	5 3.15	7.01	0.06	41 23.78	23 50.22
24	9	. .	. .	. .	. .	. .	10.	. .	41 34.91	9.62	0.52	VI.	5	52.840	5 58.39	7.01	0.25	41 24.77	24 45.65
25	9	. .	. .	. .	. .	. .	36.2	. .	43 1.13	9.62	0.74	VI.	3	43.172	16 12.98	7.23	2.25	42 50.77	35 2.46
26	8.9	. .	. .	. .	. .	. .	18.3	. .	43 43.22	9.62	0.62	VI.	4	48.719	10 16.38	7.32	1.10	43 32.98	29 4.80
27	9	. .	. .	. .	14.2	. .	. .	. .	45 14.08	9.61	0.70	IV.	4	45.885	13 14.02	7.55	1.70	45 3.77	32 3.27
28	9.10	. .	. .	. .	. .	39.5	57.	. .	45 21.96	9.61	0.73	V.	4	44.556	14 38.03	7.56	1.96	45 11.62	33 27.55
29	9	. .	. .	. .	. .	50.5	. .	. .	46 33.03	9.61	0.62	V.	5	50.372	8 33.78	7.75	0.77	46 22.80	27 22.30
30	9	. .	. .	21.2	38.5	. .	. .	. .	48 38.60	9.61	0.99	III.	3	33.046	26 48.95	8.04	4.37	48 28.00	45 41.36
31	8	. .	. .	15.3	32.5	. .	. .	. .	49 32.64	9.60	1.10	III.	3	28.178	31 54.44	8.16	5.39	49 21.94	50 47.99
32	9	. .	. .	. .	. .	. .	15.3	. .	49 40.22	9.60	0.67	VI.	5	49.901	9 2.92	8.18	0.88	49 29.95	27 51.98
33	9	. .	. .	. .	10.2	28.5	. .	. .	51 10.56	9.60	0.73	V.	5	47.578	11 29.44	8.41	1.35	51 0.23	30 19.20
34	3	. .	19.2	37.1	54.4	12.3	29.5	. .	52 54.54	9.59	1.05	IV.	3	32.481	27 24.46	8.66	4.49	52 43.90	46 17.61
35	9	. .	47.2	4.5	. .	39.8	. .	. .	53 22.29	9.59	1.04	IV.	3	33.152	26 42.36	8.72	4.34	53 11.66	45 35.42
36	9.10	. .	. .	21.3	. .	. .	. .	. .	55 38.93	9.58	1.16	III.	3	28.266	31 48.98	9.04	5.37	55 28.19	50 43.39
37	10	. .	. .	4.3	. .	. .	. .	. .	56 21.96	9.58	1.01	III.	3	36.296	23 25.14	9.14	3.69	56 11.37	42 17.97
38	10	. .	. .	. .	. .	44.2	. .	. .	56 26.74	9.58	0.69	V.	5	51.891	6 58.17	9.15	0.46	56 16.47	25 47.78
39	9.10	. .	. .	31.3	19.3	. .	. .	. .	57 49.08	9.58	0.93	III.	5	40.931	18 25.98	9.35	2.72	57 38.57	37 18.05
40	9	. .	. .	. .	. .	. .	30.5	. .	57 55.46	9.58	1.13	VI.	3	30.847	29 6.30	9.37	4.83	57 44.75	48 0.50
41	9	. .	. .	. .	. .	. .	2.3	. .	58 27.22	9.58	1.27	VI.	3	25.078	34 5.61	9.44	5.84	58 16.37	53 0.89
42	9	. .	. .	. .	46.	3.8	. .	. .	6 59 46.01	9.57	1.21	V.	3	28.255	31 49.42	9.63	5.37	6 59 35.23	50 44.42
43	9	. .	22.9	40.5	. .	. .	. .	. .	7 2 58.18	9.56	1.14	III.	3	33.216	26 38.49	10.09	4.33	7 2 47.48	28 45 32.91
44	9	. .	. .	. .	9.5	. .	. .	. .	2 9.46	9.56	1.63	IV.	2	7.944	52 57.86	9.97	9.65	1 58.27	29 11 57.48
45	9	. .	. .	48.3	6.2	. .	. .	. .	3 5.99	9.56	1.16	III.	3	31.864	28 3.05	10.10	4.61	2 55.27	28 46 57.76
46	9	. .	. .	. .	. .	39.	. .	. .	3 21.43	9.56	1.12	V.	3	35.797	23 56.05	10.14	3.79	3 10.75	42 49.98
47	9	. .	. .	. .	. .	5.3	22.9	. .	4 47.77	9.56	1.16	V.	3	33.	. . .	10.34	. .	4 37.05	
48	8.9	. .	. .	. .	. .	. .	50.2	. .	4 15.13	9.56	0.86	VI.	5	47.457	11 36.60	10.27	1.38	4 4.71	28 30 28.25
49	9	. .	. .	. .	. .	. .	22.8	. .	7 4 47.62	− 9.56	−1.56	VI.	2	13.272	−47 24.15	−10.34	− 8.52	7 4 36.50	−29 6 23.01

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 210	Nov. 28,	6 0	77 39 56.	61.9	66.9	57.4	53.7	46.9	57.13	30.210	38.5	31.1	40.3	35.2	
		6 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.2			
		6 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.5			
		7 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.7			
		7 20	. .	. .	. .	. .	. .	. .	. .	30.206	37.8				
		7 40	55.8	62.1	67.1	57.1	54.2	46.5	57.13	30.200	37.5	31.2	40.	35.7	45.

REMARKS.

(210) 7. Micrometer reading assumed as $54^r.861$, not $49^r.861$.

(210) 18. Micrometer reading assumed as $14^r.026$, not $13^r.026$.

(210) 41. Micrometer reading assumed as $26^r.078$, not $25^r.078$.

(210) 43. Minutes probably 1, not 2. See Transit Z., 1849, February 19.

ZONE 210. NOVEMBER 28. C. $D_{\circ}$=−28° 18′ 40″—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	8.5	. .	. .	. .	7 6 8.36	− 9.55	−1.19	IV.	3	33.264	−26 35.39	−10.53	− 4.32	7 5 57.62	−28 45 30.24
51	8.9	. .	8.3	25.3	43.2	. .	. .	. .	7 43.24	9.55	1.39	III.	3	23.449	36 51.14	10.76	6.38	7 32.30	55 48.28
52	8.9	. .	34.9	52.3	9.8	. .	. .	. .	9 9.95	9.54	1.14	III.	4	36.085	23 28.84	10.96	3.74	8 59.27	42 23.54
53	8	. .	56.3	13.8	31.5	. .	. .	. .	11 31.47	9.53	1.24	III.	3	32.145	27 45.55	11.29	4.55	11 20.70	46 41.39
54	8	. .	. .	. .	37.5	55.5	. .	. .	11 37.60	9.53	1.35	V.	3	27.215	32 54.67	11.30	5.59	11 26.72	51 51.56
55	8.9	. .	. .	. .	21.5	. .	. .	. .	12 21.37	9.53	1.13	IV.	4	38.038	21 26.61	11.41	3.33	12 10.71	40 21.35
56	8	. .	. .	8.2	25.2	43.4	. .	. .	13 25.57	9.52	1.22	IV.	3	34.337	25 28.07	11.56	4.10	13 14.83	44 23.73
57	9	. .	. .	. .	6.3	24.	. .	. .	14 6.28	9.52	1.22	V.	3	34.453	25 20.59	11.65	4.07	13 55.54	28 44 16.31
58	9	. .	. .	. .	. .	. .	10.2	. .	14 35.05	9.52	1.60	VI.	2	15.784	44 46.38	11.72	7.99	14 23.93	29 3 46.09
59	8.9	. .	. .	50.2	. .	. .	. .	. .	18 7.89	9.51	1.56	III.	2	19.316	41 4.62	12.22	7.25	17 56.82	0 4.09
60	3	. .	. .	. .	22.	38.3	56.2	. .	18 21.37	9.50	1.59	V.	2	18.594	41 50.28	12.26	7.40	18 10.28	29 0 49.94
61	10	. .	. .	. .	. .	41.3	. .	. .	19 23.59	9.50	1.52	V.	2	22.671	37 34.50	12.40	6.55	19 12.57	28 56 33.45
62	10	. .	. .	. .	. .	. .	13.3	. .	19 38.14	9.50	1.67	VI.	2	15.278	45 18.37	12.43	8.10	19 26.97	29 4 18.90
63	9.10	. .	. .	. .	. .	11.2	. .	. .	20 53.71	9.49	1.06	V.	5	46.056	13 4.54	12.61	1.67	20 43.16	28 31 58.82
64	7.8	. .	. .	55.3	12.9	. .	. .	. .	22 12.84	9.49	1.43	III.	3	27.849	32 14.96	12.80	5.46	22 1.92	51 13.22
65	9.10	. .	. .	. .	. .	55.3	. .	. .	22 37.70	9.49	1.36	V.	3	32.026	27 52.70	12.85	4.58	22 26.85	46 50.13
66	8	. .	. .	. .	. .	. .	29.	. .	22 53.96	9.49	1.40	VI.	3	30.189	29 47.77	12.89	4.96	22 43.07	48 45.62
67	10	. .	. .	. .	. .	. .	17.5	. .	23 42.42	9.48	0.98	VI.	5	51.651	7 13.18	13.01	0.52	23 31.96	26 6.71
68	9	. .	. .	. .	. .	55.2	12.2	. .	24 37.42	9.48	1.11	V.	4	45.649	13 29.08	13.13	1.76	24 26.83	32 23.97
69	9	. .	. .	. .	. .	. .	16.5	. .	24 41.43	9.48	1.09	VI.	4	46.475	12 37.42	13.14	1.59	24 30.86	31 32.15
70	10	. .	. .	. .	. .	. .	37.2	. .	26 2.15	9.47	1.47	VI.	3	28.692	31 21.56	13.33	5.28	25 51.21	50 20.17
71	9.10	. .	23.2	40.9	. .	. .	. .	. .	27 58.58	9.47	1.63	III.	3	21.240	39 9.71	13.61	6.84	27 47.48	58 10.16
72	9.10	. .	. .	. .	21.2	. .	. .	. .	28 21.09	9.46	1.09	IV.	5	48.117	10 55.23	13.66	1.24	28 10.54	28 29 50.13
73	9	. .	. .	. .	. .	18.5	. .	. .	29 0.70	9.46	1.75	V.	2	14.576	46 2.26	13.75	8.25	28 49.49	29 5 4.26
74	9	. .	. .	. .	. .	27.2	. .	. .	30 9.43	9.46	1.71	V.	2	17.732	42 44.29	13.91	7.58	29 58.26	29 1 45.78
75	9	. .	. .	. .	. .	. .	57.3	. .	30 22.21	9.45	1.59	VI.	3	24.164	36 5.68	13.93	6.23	30 11.17	28 55 5.84
76	10	. .	. .	. .	. .	. .	44.2	. .	31 9.16	9.45	1.48	VI.	3	29.715	30 17.38	14.05	5.06	30 58.23	49 16.49
77	9	. .	. .	. .	. .	35.	52.5	. .	32 17.48	9.45	1.02	V.	5	53.698	5 4.78	14.20	0.09	32 7.01	23 59.07
78	9	. .	. .	. .	38.2	. .	. .	. .	33 38.07	9.44	1.61	IV.	3	25.457	34 45.19	14.38	5.96	33 27.02	53 45.53
79	8.9	. .	. .	. .	. .	8.2	. .	. .	33 50.56	9.44	1.55	V.	3	28.078	32 0.46	14.41	5.41	33 39.57	51 0.28
80	9	. .	. .	. .	. .	. .	42.3	. .	34 7.21	9.44	1.63	VI.	3	24.041	36 13.33	14.45	6.25	33 56.14	55 14.03
81	9	. .	. .	. .	. .	29.3	. .	. .	35 11.78	9.43	1.28	V.	4	42.112	17 11.16	14.60	2.48	35 1.07	36 8.24
82	9.10	. .	27.2	. .	2.5	. .	. .	. .	37 2.44	9.42	1.08	II.	5	53.114	5 41.07	14.86	0.21	36 51.94	24 36.14
83	5	. .	23.	40.5	57.7	15.5	. .	. .	37 58.02	9.42	1.31	IV.	3	42.396	17 2.32	14.99	2.42	37 47.29	35 59.73
84	9	. .	. .	. .	. .	37.2	54.7	. .	38 19.67	9.42	1.19	V.	4	47.995	11 1.83	15.03	1.26	38 9.06	29 58.12
85	9	. .	. .	. .	. .	30.7	. .	. .	39 13.20	9.41	1.28	V.	4	44.674	14 30.29	15.16	1.95	39 2.51	33 27.40
86	9	. .	. .	10.5	28.1	36.	. .	. .	7 40 28.23	− 9.41	−1.28	IV.	4	45.235	−13 55.02	−15.33	− 1.85	7 40 17.54	−28 32 52.20

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point,	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(210) 86. Time of transit over T. V assumed as 46ˢ instead of 36ˢ.0.

ZONE 211. DECEMBER 2. C. $D_0 = -22° 2' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	24.	41.1	57.2	14.3	30.5	. .	23 20 57.48	− 8.75	−0.69	IV.	5	44.366	−14 50.75	− 3.44	− 1.84	23 20 48.04	−22 17 36.03
2	8	. .	. .	. .	. .	48.2	6.1	. .	22 32.09	8.76	0.93	V.	2	20.523	39 49.36	3.38	5.44	22 22.40	42 38.18
3	8	. .	. .	. .	. .	. .	21.3	. .	22 47.95	8.76	0.99	VI.	2	13.442	47 13.56	3.37	6.52	22 38.20	50 3.45
4	8	. .	. .	10.3	26.3	43.8	0.3	. .	24 26.80	8.78	0.88	IV.	3	25.172	35 3.02	3.29	4.73	24 17.14	37 51.04
5	8	. .	. .	51.3	8.8	25.4	42.1	. .	25 8.56	8.78	0.81	IV.	3	31.794	28 7.38	3.27	3.73	25 58.97	30 54.38
6	10	. .	. .	. .	18.5	. .	. .	. .	27 18.38	8.80	0.86	IV.	3	26.715	33 26.09	3.18	4.51	27 8.72	36 13.78
7	10	. .	. .	. .	. .	. .	53.	. .	27 19.71	8.80	0.90	VI.	3	21.985	38 22.36	3.18	5.22	27 10.01	41 10.76
8	9.10	. .	. .	. .	. .	. .	49.	. .	28 15.75	8.81	0.79	VI.	3	33.288	25 30.70	3.13	3.51	28 6.15	28 17.34
9	9.10	. .	. .	. .	22.	38.8	. .	. .	29 21.98	8.82	0.80	V.	3	32.298	27 35.83	3.09	3.66	29 12.36	30 22.58
10	9	. .	14.3	31.2	48.	. .	. .	. .	30 47.87	8.83	0.80	III.	3	32.547	27 20.39	3.04	3.62	30 38.24	30 7.05
11	8	. .	. .	19.7	36.3	53.2	9.2	. .	31 36.24	8.84	0.93	IV.	2	17.989	42 27.97	3.01	5.83	31 26.47	45 16.81
12	8.9	. .	12.2	28.3	45.3	2.2	18.3	. .	35 45.29	8.88	0.82	IV.	3	30.440	29 32.58	2.86	3.93	35 35.59	32 19.37
13	9.10	. .	16.5	. .	50.3	. .	. .	. .	37 50.14	8.90	0.89	II.	3	22.525	37 49.06	2.79	5.14	37 40.35	40 36.99
14	9.10	. .	59.3	. .	33.	. .	. .	. .	39 32.85	8.92	0.71	II.	5	41.548	17 47.26	2.72	2.26	39 23.22	20 32.24
15	9	. .	. .	. .	. .	54.8	11.2	. .	39 38.00	8.92	0.85	V.	3	26.552	33 36.25	2.72	4.53	39 28.23	36 23.50
16	7.8	0.3	17.	33.8	50.3	6.9	23.4	. .	41 50.32	8.94	0.86	IV.	3	25.616	24 7.60	2.65	4.67	41 40.52	26 54.92
17	9	. .	. .	4.3	. .	38.	. .	. .	45 21.24	8.97	0.69	IV.	4	43.181	16 3.87	2.54	2.01	45 11.58	18 48.42
18	10	. .	. .	. .	9.3	26.5	. .	. .	46 9.50	8.98	0.77	V.	3	35.271	24 21.62	2.52	3.20	45 59.75	27 7.34
19	8	. .	. .	19.5	36.2	. .	. .	. .	47 36.22	8.99	0.64	III.	4	48.929	10 2.62	2.47	1.15	47 26.59	12 46.24
20	8	. .	. .	. .	33.5	50.8	7.3	. .	48 33.77	9.00	0.97	V.	2	13.843	46 48.09	2.44	6.46	48 23.80	49 36.99
21	9.10	. .	. .	. .	. .	. .	35.3	. .	49 22.04	9.01	0.77	VI.	4	35.076	24 32.78	2.42	3.23	49 12.26	27 18.43
22	9	. .	. .	. .	. .	12.3	29.	. .	49 55.68	9.01	0.78	V.	3	33.742	26 5.03	2.40	3.44	49 45.89	28 50.87
23	9	. .	. .	. .	. .	52.2	. .	. .	50 35.37	9.02	0.92	V.	2	19.044	41 21.99	2.39	5.68	50 25.43	44 10.06
24	9.10	. .	. .	. .	. .	. .	25.4	. .	50 52.09	9.02	0.92	VI.	2	19.138	41 16.28	2.38	5.66	50 42.15	44 4.32
25	9	. .	. .	. .	42.2	. .	15.3	. .	53 42.04	9.05	0.65	VI.	5	47.444	11 37.47	2.32	1.37	53 32.34	14 21.16
26	9	. .	. .	56.3	. .	30.2	. .	. .	55 13.22	9.06	0.92	IV.	2	19.	41	2.28	. .	55 3.24	
27	8.9	. .	. .	33.2	49.8	6.3	23.	. .	57 49.79	9.08	0.60	IV.	5	52.551	6 16.86	2.21	0.62	57 40.11	8 59.69
28	9.10	. .	. .	. .	1.2	. .	. .	. .	59 1.08	9.10	0.71	IV.	4	41.793	17 30.87	2.18	2.22	58 51.27	20 15.27
29	9	. .	. .	. .	. .	48.2	5.	. .	23 59 31.57	9.10	0.88	V.	3	23.216	37 5.51	2.17	5.04	23 59 21.59	39 52.72
30	8.9	. .	. .	32.3	49.2	6.2	. .	. .	0 0 49.20	9.11	0.89	IV.	3	22.685	37 38.90	2.15	5.12	0 0 39.20	40 26.17
31	8	. .	. .	. .	. .	. .	28.	. .	0 54.70	9.11	0.65	VI.	5	47.092	11 59.44	2.15	1.43	0 44.94	14 43.02
32	8.9	. .	. .	. .	6.5	. .	39.3	. .	2 6.19	9.12	0.63	VI.	5	48.718	10 17.37	2.14	1.18	1 56.44	13 0.69
33	7.8	. .	. .	2.3	18.2	35.2	52.5	. .	3 18.68	9.14	0.94	IV.	2	17.232	43 15.64	2.13	5.95	3 8.60	46 3.72
34	9	. .	. .	44.2	0.3	17.3	. .	. .	5 0.55	9.15	1.01	IV.	2	9.778	51 2.87	2.11	7.09	4 50.39	53 52.07
35	9.10	. .	19.2	36.3	53.	. .	. .	. .	6 52.90	9.17	0.74	III.	4	37.836	21 38.89	2.08	2.82	6 42.99	24 23.79
36	9.10	. .	38.2	54.3	11.3	. .	. .	. .	9 11.33	9.19	0.73	III.	4	39.216	20 12.48	2.06	2.61	9 1.41	22 57.15
37	9.10	. .	38.2	54.3	11.3	. .	. .	. .	9 11.32	9.19	0.76	III.	4	36.207	23 21.31	2.06	3.06	9 1.37	26 6.43
38	8	. .	. .	20.3	36.3	53.5	10.5	. .	10 36.80	9.20	0.88	IV.	3	23.191	37 7.28	2.05	5.04	10 26.72	39 54.37
39	8	. .	36.5	52.3	9.4	26.3	43.1	. .	12 9.55	9.22	0.87	IV.	2	24.613	35 32.62	2.04	4.83	11 59.46	38 19.49
40	8	. .	46.2	3.2	19.2	. .	53.	. .	18 19.62	9.27	0.77	IV.	3	34.732	25 3.10	2.02	3.29	18 9.58	27 48.41
41	8	. .	. .	. .	53.8	. .	. .	. .	18 53.66	9.28	0.80	IV.	3	32.394	27 29.99	2.01	3.64	18 43.58	30 15.64
42	9	. .	. .	. .	. .	. .	. .	. .	18	. .	0.73	.	4	39.348	20 4.50	2.	2.59	. . .	22 49.09
43	9	. .	15.3	32.2	49.	. .	. .	. .	22 48.90	9.31	0.68	III.	4	44.313	14 52.57	2.03	1.84	22 38.91	17 36.44
44	8	. .	17.2	34.1	50.9	. .	23.5	. .	23 50.66	9.32	0.62	IV.	5	49.846	8 3.81	2.04	0.87	23 40.72	10 46.72
45	9	. .	. .	40.3	57.	13.7	30.3	. .	25 56.97	9.34	0.89	IV.	2	22.238	38 1.66	2.05	5.19	25 46.74	40 48.90
46	9	. .	. .	. .	. .	21.3	38.3	. .	28 4.81	9.36	0.82	V.	3	28.525	21 32.48	2.07	4.23	27 54.63	34 18.78
47	9	. .	. .	. .	. .	. .	26.	. .	28 52.69	9.37	0.64	VI.	5	48.238	10 47.64	2.08	1.26	28 42.68	13 30.98
48	9.10	. .	. .	5.3?	. .	38.3?	. .	. .	32 21.86	9.40	0.73	IV.	3	38.156	21 28.36	2.10	2.77	32 11.73	24 13.23
49	8.9	. .	0.3	17.5	33.8	7.2	. .	. .	0 35 33.92	− 9.43	−0.77	IV.	3	33.723	−26 6.41	− 2.14	− 3.44	0 35 23.72	−22 28 51.99

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Dec. 2		. .	. .	. .	. .	. .	359 59 55.94	30.0086

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 211	Dec. 2, 23 20	71 24 63.2	65.2	70.3	58.8	61.1	55.7	62.38	29.858	53.2	48.	53.	50.8	
	23 40	. .	. .	. .	. .	. .	. .	. .	29.864	53.5	46.9			
	0 0	62.6	65.6	70.2	59.3	60.8	54.7	62.20	29.868	52.	44.8			
	0 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	44.3	50.8	50.0	
	0 40	. .	. .	. .	. .	. .	. .	. .	29.872	51.5	41.6			
	1 0	. .	. .	. .	. .	. .	. .	. .	29.876	50.	40.6			
	1 20	62.6	66.2	69.7	60.5	60.1	55.1	62.37	29.878	49.2	39.8	47.8	47.7	50.

REMARKS.

(211) 8. Micrometer reading assumed as $34^r.288$ instead of $33^r.288$.

(211) 16. Micrometer reading assumed as $35^r.616$ instead of $25^r.616$.

(211) 21. Right ascension differs $20^s.8$ from Arg. Z. 269, 24.

(211) 44. Micrometer reading assumed as $50^r.846$, not $49^r.846$.

(211) 49. Transit over T. VI assumed to have been recorded as over T. V.

[(211 42. Precedes 41. 2^s.]

ZONE 211. DECEMBER 2. C. $D_{\circ} = -22° 2' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8.9	. .	17.5	34.	7.5	24.	. .	. .	0 36 50.83	− 9.44	−0.79	IV.	3	30.965	−28 59.58	− 2.15	− 3.85	0 35 40.60	−22 31 45.58
51	9	. .	. .	. .	1.2	. .	34.7	. .	37 1.24	9.45	1.00	VI.	2	9.874	50 57.03	2.16	7.06	36 50.79	53 45.25
52	4	. .	. .	. .	29.3	46.8	3.3	. .	37 29.70	9.45	0.96	V.	2	13.648	47 0.45	2.17	6.50	37 19.29	49 49.12
53	6.7	. .	. .	29.3	. .	3.	19.3	. .	40 46.12	9.47	0.80	IV.	.	30.251	29 44.38	2.21	3.97	40 35.85	32 30.56
54	9.10	. .	. .	. .	3.2	. .	36.3	. .	42 3.04	9.49	0.62	VI.	5	48.762	10 14.55	2.24	1.18	41 52.93	12 57.97
55	8.9	. .	. .	. .	. .	. .	16.2	. .	42 42.82	9.49	1.02	VI.	2	8.475	52 25.00	2.25	7.28	42 32.31	55 14.53
56	9.10	. .	. .	. .	5.2	21.8	. .	. .	44 5.13	9.50	0.66	V.	5	45.455	13 42.46	2.28	1.68	43 54.97	16 26.42
57	7	. .	. .	. .	26.5	. .	. .	. .	45 26.38	9.51	0.64	IV.	5	46.711	12 23.42	2.31	1.49	45 16.23	15 7.22
58	9	. .	. .	. .	42.	. .	. .	. .	46 41.90	9.52	0.56	IV.	5	55.147	3 33.86	2.33	0.22	46 31.82	6 16.41
59	8.9	. .	. .	. .	26.2	. .	0.3	. .	47 26.54	9.53	0.66	VI.	4	44.696	14 28.97	2.35	1.79	47 16.35	17 13.11
60	8	. .	. .	. .	. .	24.2	41.1	. .	48 7.57	9.54	0.91	V.	2	18.473	41 57.99	2.36	5.76	47 57.12	44 46.11
61	8.9	. .	27.5	44.7	1.1	18.3	34.	. .	55 1.16	9.60	0.73	IV.	3	37.411	22 15.17	2.51	2.88	54 50.83	25 0.56
62	8.9	. .	42.3	. .	15.1	31.8	48.	. .	55 15.16	9.60	0.73	IV.	3	37.411	22 15.17	2.51	2.88	55 4.83	25 0.56
63	9	53.1	9.2	26.	42.7	. .	. .	. .	58 42.76	9.63	0.71	III.	3	39.978	19 33.94	2.59	2.49	58 32.42	22 19.02
64	9.10	. .	. .	. .	12.2	. .	45.4	. .	0 59 12.10	9.64	0.76	VI.	3	33.984	25 49.58	2.60	3.40	0 59 1.70	28 35.58
65	9	. .	23.2	40.2	56.7	. .	. .	. .	1 0 56.76	9.65	0.72	III.	3	39.362	20 12.79	2.64	2.59	1 0 46.39	22 58.02
66	7.8	. .	44.	0.8	17.3	34.2	51.	. .	8 17.49	9.71	0.79	IV.	3	31.358	28 34.99	2.78	3.80	8 6.99	31 21.57
67	9.10	. .	. .	. .	. .	22.3	39.2	. .	9 5.79	9.72	0.66	V.	5	45.306	13 51.62	2.80	1.70	8 55.41	16 36.12
68	9	. .	. .	. .	. .	. .	14.?	. .	9 40.74	9.73	0.83	VI.	3	26.608	33 32.43	2.81	4.52	9 30.18	36 19.76
69	9.10	. .	. .	27.2	. .	0.7	. .	. .	12 44.06	9.75	0.64	III.	5	47.207	11 52.23	2.86	1.41	12 33.67	14 36.50
70	9	. .	29.5	. .	2.8	. .	. .	. .	15 2.85	9.77	0.68	II.	4	42.778	16 28.28	2.90	2.08	14 52.40	19 13.26
71	8	. .	. .	24.5	41.	57.3	14.3	. .	15 40.98	9.78	0.62	IV.	5	49.018	9 58.61	2.91	1.14	15 30.58	12 42.66
72	9	. .	. .	52.3	. .	26.5	. .	. .	17 9.38	9.79	0.90	IV.	2	19.657	40 43.41	2.93	5.59	16 58.69	43 31.93
73	8	. .	. .	. .	13.2	30.3	47.2	. .	17 13.54	9.79	0.80	V.	3	30.622	29 20.85	2.93	3.91	17 2.95	32 7.69
74	6.7	. .	26.2	43.	59.5	16.5	33.2	. .	20 59.70	9.82	0.96	IV.	2	14.467	46 9.03	2.99	6.37	20 48.92	48 58.39
75	5.6	. .	. .	18.2	35.2	52.	8.8	. .	1 22 35.23	− 9.83	−0.72	IV.	3	37.992	−21 38.52	− 3.01	− 2.79	1 22 24.68	−22 24 24.32

ZONE 212. DECEMBER 4. S. $D_{\circ} = -20° 47' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	16.	32.	49.	. .	. .	. .	3 15 48.99	−11.93	−2.35	IV.	1	10.278	−50 31.70	− 1.89	− 5.87	3 15 34.71	−21 38 19.46
2	10	. .	. .	. .	. .	34.	. .	. .	16 17.23	11.93	2.32	.	1	11.062	49 42.61	1.93	5.75	16 2.98	37 30.29
3	7	. .	. .	24.	40.	. .	. .	. .	17 40.26	11.94	1.99	IV.	3	20.320	40 7.42	2.04	4.39	17 26.33	27 53.85
4	8	. .	. .	29.	. .	2.	. .	. .	18 45.46	11.94	2.30	.	1	12.128	48 35.33	2.11	5.59	18 31.22	36 23.03
5	10	. .	59.5	. .	32.5	. .	. .	. .	26 32.54	11.98	1.65	IV.	3	30.299	29 41.43	2.76	2.96	26 18.91	17 27.15
6	10	. .	28.	45.	. .	. .	. .	. .	31 1.43	12.01	1.85	.	3	24.369	35 53.45	3.14	3.79	30 47.57	23 40.38
7	9	. .	24.5	41.	57.5	. .	. .	. .	32 57.59	12.02	1.24	IV.	4	42.253	17 2.25	3.30	1.22	32 44.33	4 46.77
8	10	. .	27.	44.	. .	. .	. .	. .	35 0.42	12.03	1.38	.	3	37.676	21 58.41	3.49	1.88	34 47.01	9 43.78
9	9	. .	. .	. .	. .	31.	47.5	. .	36 14.51	12.03	1.13	V.	4	45.258	13 53.83	3.59	0.79	36 1.35	1 38.21
10	8	. .	. .	42.	. .	15.2	. .	. .	37 58.56	12.04	2.25	III.	1	13.568	47 5.03	3.74	5.38	37 44.27	21 34 54.15
11	7	. .	. .	. .	55.	12.	. .	. .	38 55.21	12.05	1.08	IV.	5	47.052	12 2.03	3.83	0.53	38 42.08	20 59 46.39
12	8	. .	. .	. .	. .	. .	6.	. .	39 33.00	12.05	1.98	.	1	20.885	39 26.52	3.87	4.31	39 18.97	21 27 14.70
13	6	. .	40.	56.5	13.	. .	. .	. .	42 13.07	12.06	1.80	IV.	3	26.071	34 6.56	4.12	3.56	41 59.21	21 54.24
14	9	. .	. .	. .	. .	14.5	31.	. .	42 57.98	12.07	1.75	V.	3	27.680	32 25.44	4.18	3.32	42 44.16	20 12.94
15	10	. .	. .	. .	. .	. .	45.	. .	44 12.01	12.07	1.30	.	4	40.551	18 49.33	4.30	1.48	43 58.64	6 35.11
16	10	. .	. .	50.	. .	23.3	. .	. .	46 6.60	12.08	2.31	III.	1	11.368	49 23.11	4.47	5.71	45 52.21	37 13.29
17	9	. .	. .	. .	. .	. .	41.	. .	47 7.99	12.09	1.99	.	3	20.453	39 58.63	4.57	4.37	46 53.91	27 47.57
18	8	. .	. .	. .	. .	. .	49.	. .	48 16.01	12.09	1.32	.	5	39.490	19 56.73	4.67	1.61	48 2.60	7 43.01
19	9	. .	0.	17.	33.	. .	. .	. .	3 54 33.26	−12.12	−1.34	IV.	4	38.915	−20 31.50	− 5.26	− 1.69	3 54 19.80	−21 8 18.45

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.
Dec. 4,		. .	. .	. .	. .	. .	359 59 55.26	30.0057

REMARKS.

(211) 50. Transits over T.'s V and VI assumed to have been recorded as over T.'s IV and V, respectively; and minutes as 35, not 36.

(211) 65. Declination differs 2′ from Arg. Z. 317, 1; micrometer reading probably should be $41^r.362$.

[(211) 56. ? $+1^s$.]

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 212	Dec. 4,	3 10	70 9 60.	62.0	67.7	56.2	56.0	50.8	58.78						
		3 20	. .	. .	. .	. .	. .	. .	. .	30.278	50.5	42.5			
		3 40	. .	. .	. .	. .	. .	. .	. .	30.284	. .	42.7			
		4 0	60.	62.3	67.8	55.8	56.2	50.8	58.82	30.282	50.4	41.0			

ZONE 212. DECEMBER 4. S. $D_0 = -20° 47' 40''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
20	7	. .	. .	19.	. .	52.	. .	. .	3 55 35.48	−12.12	−1.95	III.	3	21.698	−38 40.86	− 5.36	− 4.19	3 55 21.41	−21 26 30.41
21	9	. .	. .	. .	. .	41.	. .	. .	56 24.49	12.13	1.35	.	5	38.698	20 46.38	5.44	− 1.73	56 11.01	21 8 33.55
22	6	. .	52.	9.	25.	. .	. .	. .	3 59 25.28	12.14	0.93	IV.	5	51.379	7 30.51	5.72	+ 0.08	3 59 12.21	20 55 16.15
23	9	. .	29.2	46.	3.	. .	. .	. .	4 2 2.69	−12.15	−2.13	IV.	1	16.582	−43 56.51	− 5.98	− 4.97	4 1 48.41	−21 31 47.46

ZONE 213. DECEMBER 18. C. $D_0 = -27° 40' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	57.2	14.5	32.2	49.2	. .	2 19 14.60	−11.72	− 0.89	IV.	5	50.168	− 8 46.47	− 8.11	− 0.21	2 19 1.99	−27 49 24.79
2	8.9	. .	. .	. .	3.5	21.5	38.8	. .	21 3.73	11.73	1.52	V.	3	22.898	37 25.28	8.21	5.36	20 50.48	28 18 8.85
3	9	. .	. .	23.2	. .	. .	15.5	. .	22 40.70	11.74	1.26	IV.	3	35.697	24 2.54	8.31	2.92	22 27.70	28 4 43.77
4	8	. .	. .	. .	. .	. .	23.5	. .	22 48.64	11.75	1.06	VI.	4	44.078	15 7.76	8.32	1.34	22 35.83	27 55 47.42
5	9	. .	31.2	. .	6.2	. .	. .	. .	25 6.19	11.77	1.24	II.	3	37.058	22 37.13	8.45	2.67	24 53.18	28 3 18.25
6	8	. .	33.5	. .	9.2	. .	43.3	. .	25 8.71	11.77	1.32	IV.	3	30.368	29 37.10	8.45	3.93	24 55.62	10 19.48
7	8	. .	. .	. .	. .	7.3	25.3	. .	25 49.96	11.78	1.68	V.	2	14.045	46 35.49	8.49	7.08	25 36.50	27 21.06
8	7	. .	. .	27.5	44.8	2.4	. .	. .	32 44.84	11.84	1.71	IV.	2	13.291	47 22.77	8.91	7.22	32 31.29	28 8.90
9	9	. .	. .	. .	. .	. .	. .	. .	33	. .	1.29	VII.	3	30.895	29 2.84	8.	3.83	33	9 44.67
10	9	. .	36.2	54.1	11.2	28.9	46.2	. .	35 11.35	11.86	1.29	IV.	3	30.052	29 56.80	9.07	4.00	34 58.20	10 39.87
11	8.9	. .	. .	. .	48.	5.7	23.4	. .	35 48.23	11.86	1.07	V.	4	39.835	19 33.94	9.11	2.14	35 35.30	0 15.19
12	7.8	. .	51.3	. .	26.3	. .	1.5	. .	37 26.44	11.87	1.74	IV.	2	9.307	51 32.58	9.21	7.98	37 12.83	32 19.77
13	6	. .	. .	20.	. .	55.5	12.8	. .	43 37.72	11.93	1.76	IV.	2	7.644	53 16.72	9.63	8.30	43 24.03	34 4.65
14	9	. .	. .	55.	12.3	29.9	47.4	. .	45 12.40	11.94	1.36	IV.	3	25.704	34 29.51	9.74	4.82	44 59.10	15 14.07
15	7	. .	. .	. .	16.5	34.4	52.3	. .	46 16.79	11.95	1.76	V.	2	7.175	53 46.38	9.82	8.39	46 3.08	34 34.59
16	9	. .	. .	. .	. .	36.5	53.8	. .	47 18.80	11.96	1.63	V.	2	13.215	47 27.66	9.89	7.23	47 5.21	28 14.78
17	9	. .	50.3	8.2	25.2	. .	. .	. .	51 25.42	11.99	1.36	III.	3	24.718	35 31.42	10.18	5.02	51 12.07	16 16.62
18	9	. .	. .	. .	38.2	55.3	13.3	. .	51 38.07	11.99	1.42	V.	3	22.513	37 49.61	10.19	5.44	51 24.66	18 35.24
19	8	. .	55.2	13.5	30.5	48.5	. .	. .	54 30.68	12.02	1.31	IV.	3	26.854	33 17.31	10.42	4.60	54 17.35	14 2.33
20	9	. .	. .	. .	3.6	21.3	38.8	. .	55 3.75	12.02	1.13	V.	4	35.048	24 34.43	10.46	3.05	54 50.60	5 17.94
21	10	. .	21.8	. .	. .	. .	. .	. .	58 56.99	12.06	1.45	II.	3	19.983	40 28.30	10.75	5.91	58 43.48	21 14.96
22	9	. .	. .	. .	20.	38.	55.2	. .	2 59 20.22	12.06	1.32	V.	3	26.245	33 55.54	10.77	4.73	59 6.84	14 41.04
23	9.10	. .	. .	. .	. .	. .	38.3	. .	3 0 3.45	12.06	1.34	VI.	3	26.626	33 31.24	10.83	4.65	2 59 50.05	14 16.72
24	7	. .	. .	. .	39.3	57.4	15.	. .	1 39.66	12.07	1.52	V.	2	16.769	43 44.61	10.96	6.55	3 1 26.07	28 24 32.12
25	10	. .	. .	. .	44.2	. .	. .	. .	4 44.08	12.10	0.90	IV.	4	44.874	14 17.49	11.21	1.18	4 31.08	27 54 59.88
26	10	. .	. .	. .	55.3	. .	30.3	. .	5 55.31	12.11	1.18	VI.	3	31.958	27 56.59	11.30	3.63	5 42.02	28 8 41.52
27	7	. .	. .	. .	11.5	29.4	46.4	. .	7 11.61	12.12	1.17	V.	3	32.294	27 36.07	11.40	3.57	6 58.32	8 21.04
28	9.10	. .	. .	35.2	. .	10.	. .	. .	8 52.60	12.13	1.29	IV.	3	26.683	33 28.10	11.54	− 4.64	8 39.18	28 14 14.28
29	8.9	. .	1.2	. .	. .	. .	11.3	. .	16 36.35	12.19	0.69	IV.	4	52.872	5 55.38	12.19	+ 0.32	16 23.47	27 46 37.25
30	8.9	. .	11.2	28.5	46.2	3.5	. .	. .	16 46.16	12.19	0.77	IV.	4	49.278	9 41.21	12.20	− 0.35	16 33.20	27 50 23.76
31	10	. .	. .	27.2	. .	. .	. .	. .	18 44.76	12.20	1.37	III.	2	22.887	37 20.44	12.37	5.37	18 31.19	28 18 8.18
32	10	. .	. .	. .	16.3	. .	. .	. .	19 16.21	12.21	1.47	IV.	2	17.241	43 15.07	12.41	− 6.46	19 2.53	28 24 3.94
33	8	. .	. .	. .	. .	. .	3.2	. .	19 28.32	12.21	0.72	VI.	6	51.347	7 32.38	12.43	+ 0.03	19 15.39	27 48 14.78
34	7	. .	. .	. .	. .	33.2	50.3	. .	20 15.62	12.22	0.76	V.	6	48.778	10 13.60	12.50	− 0.44	20 2.64	50 56.54
35	9.10	. .	. .	. .	36.2	53.8	. .	. .	21 36.23	12.23	0.87	V.	5	43.574	15 40.40	12.62	1.43	21 23.13	27 56 24.45
36	9	. .	. .	. .	36.3	54.2	. .	. .	24 36.36	12.25	1.50	V.	2	14.887	45 42.63	12.89	6.93	24 22.61	28 26 32.45
37	10	. .	. .	. .	. .	. .	1.2	. .	25 26.37	12.25	1.17	V.	3	30.126	29 51.97	12.96	3.98	25 12.95	10 38.91
38	9.10	. .	54.8	12.2	29.2	. .	. .	. .	27 29.64	12.27	1.43	III.	2	17.679	42 47.16	13.14	6.38	27 15.94	23 36.68
39	10	. .	. .	. .	3.2	. .	. .	. .	29 3.06	12.28	1.23	IV.	3	27.308	32 49.08	13.27	4.52	28 49.55	13 36.87
40	9.10	. .	. .	. .	23.2	40.8	. .	. .	30 23.12	12.29	1.42	V.	2	18.138	42 18.87	13.40	6.29	30 9.41	28 23 8.56
41	9.10	. .	43.2	. .	. .	. .	. .	. .	3 32 18.31	−12.30	− 0.91	II.	4	41.175	−18 9.03	−13.59	− 1.87	3 32 5.10	−27 58 54.49

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ' "	r.
Dec. 18,	. .	. .	. .	. .	. .	359 59 56.82	30.0063

REMARKS.

(212) 23. Time of transit over T. IV assumed as 3s instead of 0s.3.

(213) 25. Declination differs 1m from Arg. Z. 322, 45.

(213) 39. Right ascension differs 48s.4 from Arg. Z. 322, 75.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ' "						"	in.	°	°	°	°	°
Zone 213	Dec. 18, 2 20	77 2 {33. 33.9	33.2 33.4	39.7 39.9	29.9 30.2	32.8 32.9	23.8 24.8	32.29	29.978	56.2	49.8	54.	53.5	54.
	2 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.2			
	3 0	. .	. .	. .	. .	. .	. .	. .	29.962	55.5	48.6			
	3 20	. .	. .	. .	. .	. .	. .	. .	29.970	. .	48.1			
	3 40	. .	. .	. .	. .	. .	. .	. .	29.968	55.	47.9			
	4 0	. .	. .	. .	. .	. .	. .	. .	29.970	55.	48.1			
	4 10	. .	. .	. .	. .	. .	. .	. .	29.968	55.	48.8	54.5	54.	54.

ZONE 213. DECEMBER 18. C. $D_{\circ}=-27° 40' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
42	7	. .	. .	29.5	47.	. .	23.	. .	3 32 47.36	−12.31	−1.48	IV.	2	15.239	−45 20.63	−13.63	− 6.84	3 32 33.57	−28 26 11.10
43	8	. .	. .	46.2	. .	. .	38.5	. .	33 3.68	12.31	1.57	IV.	2	10.934	49 50.38	13.65	7.68	32 49.80	30 41.71
44	8	. .	14.3	32.3	49.5	. .	. .	. .	34 49.56	12.32	1.49	III.	2	14.208	46 24.95	13.81	7.06	34 35.75	27 15.82
45	10	. .	. .	. .	. .	36.8	. .	. .	35 19.13	12.32	1.43	V.	2	17.055	43 26.78	13.87	6.49	35 5.38	24 17.14
46	9	. .	29.	46.3	. .	. .	. .	. .	39 3.98	12.35	1.00	III.	3	35.675	24 3.99	14.21	2.91	38 50.63	4 51.11
47	9	. .	. .	. .	10.3	. .	45.8	. .	39 10.55	12.35	1.22	VI.	3	26.398	33 45.66	14.23	4.70	38 56.98	14 34.59
48	9	. .	. .	. .	. .	. .	37.2	. .	39 2.32	12.35	1.28	VI.	3	23.617	36 39.99	14.21	5.24	38 48.69	17 29.44
49	8.9	. .	. .	. .	. .	. .	. .	. .	39	. .	1.33	.	3	20.746	39 40.59	14.21	5.78	39	20 30.58
50	10	. .	. .	. .	. .	. .	50.3	. .	43 15.45	12.38	0.92	VI.	4	39.380	20 2.75	14.61	2.21	43 2.15	0 49.57
51	8	. .	44.2	1.3	19.2	36.5	. .	. .	48 19.06	12.41	1.04	IV.	3	33.687	26 8.67	15.10	3.30	48 5.61	28 6 57.07
52	10	. .	. .	. .	. .	. .	. .	. .	48	. .	0.76	VI.	4	46.495	12 36.17	15.10	0.88	. . .	27 53 22.15
53	9	. .	24.5	41.3	59.2	17.2	. .	. .	50 59.34	12.43	0.82	IV.	4	42.822	16 26.28	15.37	1.57	50 46.09	27 57 13.22
54	8.9	. .	. .	. .	56.	13.3	31.	. .	51 55.90	12.44	1.26	V.	2	22.692	37 33.18	15.46	5.41	51 42.20	28 18 24.05
55	9.10	. .	. .	. .	8.2	25.	. .	. .	53 7.86	12.44	0.71	V.	4	48.288	21 43.91	15.58	0.54	52 54.71	2 30.03
56	9	. .	. .	9.5	27.5	45.	. .	. .	54 27.30	12.45	1.01	IV.	3	33.706	26 7.47	15.70	− 3.30	54 13.84	28 6 56.47
57	9	. .	. .	. .	. .	. .	31.2	. .	54 56.31	12.45	0.60	VI.	5	52.472	6 21.75	15.76	+ 0.25	54 43.26	27 47 7.26
58	9	. .	. .	. .	. .	31.2	. .	. .	55 13.83	12.45	0.65	VI.	5	49.771	9 11.14	15.79	− 0.25	55 0.73	49 57.18
59	9	. .	. .	. .	45.1	2.8	19.5	. .	56 45.01	12.46	0.75	V.	4	45.575	13 33.79	15.93	1.06	56 31.80	27 54 20.78
60	9	. .	. .	59.2	17.2	. .	. .	. .	59 26.40	12.48	0.94	III.	3	36.528	23 10.58	16.08	2.74	58 12.98	28 3 59.40
61	7	. .	. .	21.5	39.8	57.5	14.8	. .	3 59 39.68	12.48	0.94	IV.	3	36.374	23 7.63	16.22	2.75	3 59 26.26	28 3 56.60
62	9	. .	. .	8.	25.3	. .	0.5	. .	4 1 25.48	12.49	0.64	IV.	5	50.508	8 25.20	16.40	0.10	4 1 12.35	27 49 11.70
63	9	. .	. .	. .	56.8	14.3	31.3	. .	1 56.66	12.50	0.84	V.	4	41.062	18 17.00	16.45	1.89	1 43.32	27 59 5.34
64	9	. .	. .	12.2	29.2	. .	. .	. .	3 29.40	12.51	1.12	III.	3	28.442	31 37.93	16.61	4.31	3 15.77	28 12 28.85
65	10	. .	. .	. .	6.	. .	41.	. .	4 6.01	12.51	0.89	VI.	4	38.121	21 21.70	16.67	2.45	3 52.61	28 2 10.82
66	9.10	. .	29.8	. .	4.8	. .	. .	. .	6 4.79	12.52	0.77	II.	5	43.472	15 46.68	16.88	1.44	5 51.50	27 56 35.00
67	9.10	. .	. .	. .	41.3	59.5	. .	. .	6 41.53	12.52	1.30	V.	2	19.048	41 21.74	16.94	− 6.13	6 27.71	28 22 14.81
68	10	. .	. .	. .	. .	21.3	. .	. .	9 3.95	12.54	0.55	IV.	5	52.696	6 7.69	17.17	+ 0.31	8 50.86	27 46 54.55
69	10	. .	. .	. .	. .	16.3	. .	. .	9 58.91	12.54	0.70	V.	4	46.536	12 33.53	17.27	− 0.85	9 45.67	53 21.65
70	10	. .	. .	. .	3.2	. .	38.1	. .	11 3.16	12.55	0.79	VI.	4	41.781	17 31.87	17.37	1.75	10 49.82	27 58 20.99
71	10	. .	. .	. .	. .	. .	. .	. .	11	. .	0.89	VI.	4	37.672	21 49.82	17.	2.53	. . .	28 2 39.35
72	10	. .	. .	. .	. .	5.5	. .	. .	12 47.73	12.56	1.51	V.	2	9.151	51 42.43	17.56	8.07	12 33.66	32 38.06
73	10	. .	. .	. .	. .	. .	57.8	. .	13 22.89	12.56	1.27	VI.	3	20.219	40 13.18	17.62	5.89	13 9.06	21 6.69
74	9	. .	. .	. .	37.3	. .	. .	. .	17 37.17	12.58	0.82	IV.	4	39.731	19 40.34	18.06	2.15	17 23.77	0 30.55
75	9.10	. .	. .	. .	. .	. .	25.?	. .	17 50.17	12.58	1.04	VI.	3	30.000	29 59.50	18.08	4.00	17 36.55	28 10 51.58
76	8	. .	. .	40.	. .	14.5	. .	. .	48 57.34	12.73	0.67	V.	5	43.142	16 7.51	21.49	1.49	48 43.94	27 57 0.49
77	8.9	. .	. .	46.3	4.	21.5	38.3	. .	50 3.82	12.74	0.66	IV.	5	43.382	15 52.52	21.63	1.45	49 50.42	27 56 45.69
78	9.10	. .	. .	. .	13.3	. .	. .	. .	51 13.16	12.74	1.02	IV.	3	26.868	33 16.43	21.76	4.61	50 59.40	28 14 12.80
79	9.10	. .	. .	. .	. .	. .	2.2	. .	52 27.33	12.74	1.06	VI.	3	25.001	35 13.11	21.90	4.96	52 13.53	16 9.97
80	9.10	. .	. .	. .	. .	. .	29.2	. .	52 54.35	12.74	1.02	VI.	3	27.218	32 54.16	21.96	4.54	52 40.59	13 50.66
81	9.10	. .	. .	. .	. .	. .	31.2	. .	52 56.31	12.74	1.10	VII.	3	23.271	37 1.31	21.97	5.31	52 42.47	17 58.59
82	9.10	. .	. .	. .	. .	. .	. .	. .	54	. .	0.80	VII.	3	36.906	22 45.66	22.	2.68	. . .	3 40.34
83	9.10	. .	. .	10.2	27.3	. .	. .	. .	56 27.47	12.76	1.07	III.	3	24.312	35 57.03	22.37	5.11	56 13.64	16 54.51
84	10	. .	. .	. .	. .	. .	5.3	. .	56 30.41	12.76	1.09	VI.	3	23.528	36 45.63	22.39	5.26	56 16.56	28 17 43.28
85	9	. .	. .	53.2	11.	28.3	. .	. .	4 58 10.88	12.77	0.56	IV.	5	47.632	11 25.68	22.58	− 0.64	4 57 57.55	27 52 18.90
86	10	. .	. .	. .	. .	31.3	. .	. .	5 0 13.94	12.78	0.43	V.	5	52.805	6 0.78	22.82	+ 0.35	5 0 0.73	27 46 53.25
87	9.10	. .	55.3	13.4	30.4	. .	. .	. .	3 30.55	12.79	1.00	III.	3	26.670	33 28.98	23.22	− 4.66	3 16.76	28 14 26.86
88	10	. .	. .	24.3	. .	59.3	. .	. .	5 41.92	12.79	0.54	IV.	5	47.497	11 34.53	23.48	0.65	5 28.59	27 52 28.66
89	10	. .	. .	. .	. .	. .	50.7	. .	6 15.77	12.80	1.20	VI.	2	17.071	43 25.79	23.55	6.52	6 1.77	28 24 25.86
90	9.10	. .	. .	. .	. .	18.7	36.3	. .	5 7 1.38	−12.80	−0.51	V.	5	48.400	−10 37.59	−23.65	− 0.48	5 6 48.07	−27 51 31.72

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.		B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 213	Dec. 18,	4 20	77 2	33.0 33.6	34.1 34.1	40. 40.1	30.0 30.9	33.0 33.2	22.9 23.1	32.33						
		4 50	. .		. .	. .	. .	. .	. .	. .	. .	. .	48.9			
		5 0	. .		. .	. .	. .	. .	. .	. .	29.954	55.	48.8			
		5 20	. .		. .	. .	. .	. .	. .	. .	29.940	. .	48.8			
		5 40	. .		. .	. .	. .	. .	. .	. .	29.934	. .	48.8			
		5 50		32.8 33.5	34.1 33.7	39.7 39.8	30.8 31.	32.2 32.4	22.6 22.9	32.12	29.934	54.5	48.9	53.5	53.3	54.

REMARKS.

(213) 60. Transits over T.'s III and IV assumed as $9^s.2$ and $27^s.2$, not $59^s.2$ and $17^s.2$, and minutes as 58, not 59, to agree with Arg. Z. 350, 1, and Mural October 18, 1847.

(213) 63. Declination differs 1′ from Arg. Z. 322, 117, and 350, 6; micrometer reading perhaps to be assumed as $42^r.062$.

ZONE 213. DECEMBER 18. C. $D_0 = -27° 40' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
91	8	. .	55.2	13.2	30.3	48.2	5.2	. .	5 9 30.44	−12.81	−1.33	IV.	2	11.241	−49 31.32	−23.95	− 7.67	5 9 16.30	−28 30 32.94
92	8.9	. .	. .	29.3	47.2	4.3	22.1	. .	10 46.96	12.81	1.06	IV.	3	22.917	37 24.27	24.10	5.39	10 33.09	18 23.76
93	9	. .	. .	49.2	7.	24.5	. .	. .	12 6.85	12.82	1.10	IV.	3	21.178	39 13.54	24.27	5.72	11 52.93	20 13.53
94	10	. .	51.3	. .	26.3	. .	. .	. .	14 26.29	12.82	0.71	II.	3	38.092	21 32.25	24.56	2.45	14 12.76	28 2 29.26
95	9.10	. .	. .	. .	57.2	15.3	. .	. .	14 57.48	12.82	0.60	V.	4	42.716	16 33.18	24.62	1.57	14 44.06	27 57 29.37
96	9	. .	. .	. .	40.3	57.5	15.5	. .	15 40.28	12.83	0.78	V.	3	34.735	25 2.72	24.72	3.10	15 26.67	28 6 0.54
97	9	. .	. .	. .	. .	. .	49.3	. .	16 14.42	12.83	1.02	VI.	3	23.941	36 19.53	24.78	5.19	16 0.57	28 17 19.50
98	10	. .	. .	. .	47.	. .	. .	. .	17 46.89	12.83	0.50	V.	5	47.706	11 20.98	24.98	0.61	17 33.56	27 52 16.57
99	9	. .	. .	. .	54.2	11.2	28.3	. .	18 53.77	12.84	0.62	V.	4	41.845	17 27.79	25.13	1.74	18 40.31	27 58 24.66
100	10	. .	. .	24.	. .	59.	. .	. .	21 41.56	12.84	0.70	IV.	4	38.185	21 17.43	25.48	2.43	21 28.02	28 2 15.34
101	10	. .	37.3	54.8	12 5	. .	. .	. .	23 12.40	12.85	0.54	III.	5	44.977	14 12.10	25.68	1.18	22 59.01	27 55 8.96
102	9	. .	58.3	16.3	33.2	. .	. .	. .	24 33.56	12.85	1.34	III.	2	8.588	52 17.29	25.84	8.20	24 19.37	28 33 21.33
103	9	. .	. .	. .	. .	. .	10.3	. .	24 35.46	12.85	0.89	VI.	3	29.171	30 51.64	25.85	4.17	24 21.72	11 51.96
104	9	. .	. .	. .	59.7	17.2	34.3	. .	25 59.57	12.86	0.91	V.	3	27.946	32 8.68	26.04	− 4.40	25 45.80	28 13 9.12
105	9.10	. .	. .	. .	. .	. .	5.	. .	26 30.10	12.86	0.34	VI.	5	53.594	5 11.24	26.10	+ 0.50	26 16.90	27 46 6.84
106	9.10	. .	. .	. .	54.3	12.	. .	. .	27 54.39	12.86	0.53	V.	4	44.642	14 32.36	26.28	− 1.20	27 41.00	27 55 29.84
107	8.9	. .	. .	. .	. .	. .	52.?	. .	28 17.14	12.86	0.95	VII.	3	25.895	31 16.52	26.33	− 4.79	28 3.33	28 15 17.64
108	9	. .	. .	. .	. .	. .	46.8	. .	30 11.90	12.87	0.31	VI.	5	54.524	4 12.92	26.59	+ 0.68	29 58.72	27 45 8.83
109	8	. .	. .	. .	34.5	52.3	9.3	. .	31 34.57	12.87	0.58	V.	3	42.625	16 47.63	26.76	− 1.59	31 21.12	27 57 45.98
110	9	. .	. .	. .	. .	. .	38.5	. .	32 3.66	12.87	0.75	VI.	3	34.617	25 9.87	26.82	3.13	31 50.04	28 6 9.82
111	9.10	. .	. .	. .	. .	18.3	36.	. .	33 0.98	12.87	0.77	V.	3	33.731	26 5.72	26.96	3.30	32 47.34	28 7 5.98
112	9	. .	. .	11.2	. .	. .	3.8	. .	34 28.88	12.88	0.47	IV.	5	47.112	11 58.31	27.15	0.73	34 15.53	27 52 56.19
113	9	. .	. .	. .	. .	41.3	. .	. .	34 23.93	12.88	0.40	V.	5	50.558	8 22.06	27.14	0.08	34 10.65	49 19.28
114	9	. .	. .	. .	. .	. .	14.3	. .	34 39.42	12.88	0.41	VI.	5	49.355	9 37.44	27.17	0.31	34 26.13	27 50 34.92
115	9.10	. .	. .	. .	. .	21.3	. .	. .	36 3.80	12.88	0.80	V.	3	32.128	27 46.37	27.35	− 3.60	35 50.12	28 8 47.32
116	8.9	. .	. .	. .	. .	55.3	12.5	. .	36 37.78	12.88	0.34	V.	5	52.848	5 58.08	27.43	+ 0.35	36 24.56	27 46 55.16
117	8.9	. .	. .	10.5	28.3	46.	3.5	. .	38 28.32	12.88	0.98	IV.	3	23.618	36 40.43	27.68	− 5.26	38 14.46	28 17 43.37
118	9.10	. .	. .	. .	. .	33.5	. .	. .	39 16.15	12.89	0.30	V.	5	53.892	4 52.53	27.77	+ 0.58	39 2.96	27 45 49.72
119	9	. .	51.3?	. .	25.5	. .	0.9	. .	41 25.96	12.89	0.99	IV.	2	21.805	38 28.58	28.07	− 5.60	41 12.08	28 19 32.25
120	9	. .	51.3	9.2	26.3	44.3	. .	. .	43 26.54	12.89	1.13	IV.	2	15.861	44 41.36	28.33	6.75	43 12.52	25 46.44
121	10	. .	. .	. .	33.8	. .	10.	. .	45 35.38	12.90	1.18	VI.	2	13.687	46 57.94	28.62	7.20	45 21.30	28 3.76
122	9.10	. .	. .	. .	. .	8.8	. .	. .	45 51.15	12.90	1.09	V.	2	18.564	41 52.22	28.66	6.24	45 37.16	22 57.12
123	10	. .	. .	. .	. .	14.8	. .	. .	46 57.26	12.90	0.88	V.	3	27.271	32 51.22	28.82	4.53	46 43.48	13 54.57
124	10	. .	. .	. .	. .	14.5?	. .	. .	47 56.85	12.90	1.06	V.	2	18.699	41 43.62	28.96	6.18	47 42.89	22 48.76
125	9.10	. .	. .	44.2	. .	19.5	. .	. .	5 51 1.80	−12.91	−1.21	IV.	2	11.645	−49 5.87	−29.37	− 7.60	5 51 47.68	−28 30 12.84

ZONE 214. DECEMBER 30. C. $D_0 = -29° 33' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	. .	6.3	. .	. .	. .	2 1 6.15	−16.41	. .	IV.	3	30.332	−29 39 36	− 4.76	− 3.95	2 0	−30 3 18.07
2	8	. .	. .	58.2	15.5	. .	51.5	. .	3 15.85	16.43	. .	IV.	5	49	10	4.85	. .	3	. .
3	8	. .	. .	18.3	35.3	54.	. .	. .	5 35.92	16.45	. .	IV.	5	52.462	6 22.52	4.97	+ 0.64	5	29 39 57.85
4	9	. .	. .	. .	. .	. .	19.2	. .	5 43.69	16.45	. .	VI.	5	51.085	7 48.71	4.98	+ 0.42	5	41 23.27
5	10	. .	. .	. .	. .	53.2	. .	. .	2 8 35.44	−16.48	. .	V.	4	39.606	−19 48.43	− 5.10	− 1.96	2 8	−29 53 25.49

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1848. h.	s.	s.	s.	s.	s.	° ′ ″	r.
Dec. 30,	. .	. .	. .	. .	. .	359 59 54.68	30.0095

REMARKS.

(213) 121. Transit over T. IV assumed as $35^s.8$ instead of $33^s.8$.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1848. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 214	Dec. 30, 2 0	78 54 59.6	64.6	71.7	58.1	61.3	49.1	60.73	29.958	40.2	31.8	42.2	41.4	43.
	2 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.3			

ZONE 215. JANUARY 23. C. $D_0 = -28° 56' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	52.3	8.5	25.7	. .	. .	. .	5 22 26.65	−21.40	−1.04	IV.	2	15.376	−45 12.09	− 2.15	−12.99	5 22 4.21	−29 42 7.2
2	9	. .	. .	. .	58.	15.3	33.2	. .	22 57.78	21.40	1.09	IV.	3	27.804	32 17.71	2.20	10.46	22 35.28	29 10.4
3	9	. .	. .	. .	. .	22.	. .	. .	23 4.25	21.41	1.10	V.	3	28.344	31 44.02	2.24	10.35	22 41.74	28 36.6
4	9	. .	. .	50.3	. .	26.3	. .	. .	26 8.25	21.43	1.00	IV.	2	11.425	49 19.89	2.63	13.93	25 45.82	46 16.4
5	9	. .	45.4	3.3	21.3	. .	. .	. .	28 21.08	21.45	1.15	IV.	5	49.370	9 36.80	2.92	5.97	27 58.48	6 25.7
6	8	. .	47.4	4.9	22.8	40.2	58.1	. .	32 22.76	21.46	1.14	IV.	5	53.842	4 55.84	3.46	5.04	32 0.16	1 44.3
7	9	. .	. .	. .	51.3	8.5	. .	. .	33 50.88	21.47	0.97	IV.	2	9.862	50 57.65	3.67	14.27	33 28.44	47 55.6
8	9	. .	. .	. .	. .	. .	58.	. .	34 22.61	21.48	0.98	VI.	2	14.498	46 7.59	3.76	13.17	34 0.15	43 4.5
9	8	. .	. .	. .	. .	46.2	3.7	. .	35 28.25	21.49	0.96	V.	2	9.694	51 8.57	3.90	14.38	35 5.8	48 6.8
10	8.9	. .	52.2	9.5	27.2	. .	. .	. .	37 27.35	21.50	1.04	IV.	3	32.566	27 19.13	4.18	9.46	37 4.8	24 12.8
11	9	. .	. .	. .	25.3	43.	. .	. .	40 25.29	21.52	1.06	IV.	5	46.696	12 24.45	4.56	6.52	40 2.7	9 15.5
12	8.9	. .	13.5	32.2	49.2	7.5	25.2	. .	43 49.56	21.54	0.96	IV.	2	19.244	41 9.48	5.06	12.26	43 27.1	38 6.8
13	8.9	. .	23.2	. .	59.2	. .	34.2	. .	43 58.95	21.54	0.96	IV.	2	20.750	39 34.83	5.10	11.96	43 36.4	36 31.9
14	9	. .	. .	. .	. .	36.2	53.2	. .	45 18.25	21.55	1.05	V.	4	46.279	12 49.93	5.28	6.61	44 55.6	9 41.8
15	9	. .	. .	. .	. .	. .	57.8	. .	45 22.51	21.55	1.05	VI.	4	47.162	11 54.64	5.28	6.43	44 59.9	8 46.3
16	7.8	. .	. .	. .	. .	. .	9.5	. .	46 34.22	21.56	0.97	VI.	3	27.729	32 22.29	5.45	10.48	46 11.7	29 18.2
17	9	. .	. .	. .	. .	59.5	. .	. .	48 41.90	21.57	1.02	V.	5	47.795	11 15.53	5.75	6.30	48 19.3	8 7.6
18	7.8	. .	. .	30.3	. .	. .	23.2	. .	48 48.02	21.57	1.02	VI.	5	45.429	13 44.29	5.77	6.80	48 25.4	10 36.9
19	8	. .	. .	. .	. .	. .	48.2?	. .	50 12.91	21.58	1.01	VI.	5	46.298	12 49.74	5.97	6.61	49 50.3	9 42.3
20	9.10	. .	. .	3.3	. .	. .	. .	. .	52 21.11	21.59	0.99	III.	4	43.999	15 12.03	6.28	7.09	51 58.5	12 5.4
21	8	. .	. .	. .	48.2	. .	. .	. .	52 48.09	21.59	1.02	IV.	4	48.294	10 43.08	6.35	6.19	52 25.5	7 35.6
22	8	. .	1.3	18.3	36.8	54.3	12.	. .	54 36.60	21.60	0.99	IV.	4	43.062	16 11.33	6.62	7.28	54 14.0	13 5.2
23	9.10	. .	. .	47.3	5.6	. .	. .	. .	56 5.27	21.61	0.91	IV.	3	25.956	34 13.64	6.83	10.85	55 42.7	31 11.3
24	9.10	. .	. .	. .	. .	. .	55.3?	. .	56 20.04	21.61	0.93	VI.	3	31.182	28 45.78	6.87	9.75	55 57.5	25 42.4
25	8	. .	6.5	24.2	41.3	59.2	. .	. .	5 58 41.66	−21.63	−0.90	IV.	3	26.581	−23 7.22	− 7.22	− 8.66	5 58 19.1	−29 20 3.1

ZONE 216. JANUARY 23. C. $D_0 = -29° 34' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	. .	. .	33.5	51.3	. .	6 20 15.83	−21.76	−0.86	.	5	56.990	− 2 41.16	− 0.95	+ 0.65	6 19 53.2	−29 37 11.5
2	9	. .	52.5	. .	29.3	47.3	. .	. .	22 28.97	21.76	1.06	.	3	26.144	23 34.58	1.24	− 3.75	22 6.1	58 9.6
3	9	. .	. .	. .	13.2	31.3	. .	. .	25 13.30	21.78	0.97	.	3	38.621	20 59.14	1.59	− 3.10	24 50.6	55 33.8
4	9	. .	. .	31.3	49.2	. .	. .	. .	27 49.19	21.79	0.85	.	5	54.344	4 24.58	1.92	+ 0.33	27 26.5	29 38 56.2
5	8.9	. .	. .	. .	41.3	59.5	. .	. .	28 41.38	21.79	1.09	.	2	21.538	38 45.53	2.02	− 6.86	28 18.5	30 13 24.4
6	7.8	. .	. .	. .	30.3	48.3	6.5	. .	29 30.52	21.80	1.06	.	2	25.775	23 57.61	2.14	3.83	29 7.7	29 58 33.6
7	9.10	. .	. .	. .	. .	37.2	. .	. .	30 19.18	21.80	1.13	V.	2	15.429	45 9.08	2.24	8.23	29 57.3	30 19 49.6
8	9.10	. .	. .	. .	13.?	. .	. .	. .	32 12.93	21.81	1.13	IV.	2	13.202	47 28.38	2.48	8.74	31 50.0	30 22 9.6
9	9.10	. .	32.2	. .	7.5	. .	. .	. .	34 7.66	21.82	0.94	III.	4	39.641	19 45.58	2.73	2.89	33 44.9	29 54 21.2
10	6	. .	. .	. .	20.5	38.5	56.2	. .	34 20.49	21.82	1.12	IV.	2	15.542	45 1.63	2.76	8.20	33 57.5	30 19 42.6
11	9.10	. .	. .	. .	37.5	. .	14.2	. .	35 38.01	21.82	1.15	IV.	2	10.572	50 13.32	2.92	9.31	35 15.0	24 55.5
12	9.10	. .	22.3	40.3	58.	. .	. .	. .	38 58.03	21.83	0.98	IV.	3	33.302	26 33.01	3.36	4.27	38 35.2	1 10.6
13	7.8	. .	. .	. .	. .	58.3	16.5	. .	39 40.53	21.84	1.14	V.	2	9.487	51 21.74	3.46	9.53	39 17.5	26 4.7
14	9	. .	2.	20.	37.3	55.5	. .	. .	42 37.63	21.85	1.07	IV.	3	18.878	41 37.64	3.84	7.46	42 14.7	16 18.9
15	9.10	. .	48.2	. .	24.2	. .	. .	. .	45 24.13	21.86	1.12	IV.	2	11.149	49 37.13	4.21	9.19	45 1.1	24 20.5
16	9.10	. .	. .	. .	. .	. .	54.2	. .	45 18.59	21.86	1.10	VI.	2	15.295	45 17.68	4.20	8.26	44 55.6	20 0.2
17	8.9	. .	. .	. .	46.2	4.3	21.9	. .	46 46.27	21.86	1.06	IV.	2	20.021	40 20.56	4.38	7.21	46 23.3	15 2.2
18	9	. .	12.6	30.2	48.1	6.2	. .	. .	48 48.22	21.87	1.12	IV.	2	9.827	50 59.85	4.65	9.48	48 25.2	25 44.0
19	10	. .	. .	45.2	. .	. .	. .	. .	49 3.12	21.87	1.06	III.	2	18.823	41 35.19	4.70	7.47	48 40.2	16 17.4
20	10	. .	. .	59.3	. .	. .	. .	. .	6 51 17.21	−21.88	−1.05	III.	2	20.430	−39 54.59	− 4.99	− 7.12	6 50 54.3	−30 14 36.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 215	Jan. 23,	5 20	88 17 {30.6 {30.2	35.9 35.0	40.7 40.4	27.1 27.1	35.2 34.9	18.8 18.9	31.23	30.282	38.8	30.3	39.2	38.8	40.3
		5 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.7			
		6 0	{31.1 {30.6	36.9 36.0	41.9 41.4	27.5 27.8	36. 35.7	17.6 17.3	31.65	30.280	38.	28.9	38.8	37.5	
Zone 216	Jan. 23,	6 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	28.7			
		6 30	88 54 61.3	67.7	72.8	57.4	67.2	49.7	62.68	. .	. .	. .	38.	37.	
		6 40	. .	. .	. .	. .	. .	. .	. .	30.282	37.5	28.3			
		7 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	28.2			

REMARKS.

(215) 25. Micrometer reading assumed as $36^r.581$, not $26^r.581$.

(216) 1. Micrometer reading assumed as $55^r.990$, not $56^r.990$.

(216) 2. Micrometer reading assumed as $36^r.144$, not $26^r.144$.

(216) 6. Micrometer reading assumed as $35^r.775$, not $25^r.775$.

(216) 9. Right ascension 18^s discordant from Mural Z., 1847, February 12.

ZONE 216. JANUARY 23. C. $D_0 = -29° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9.10	. .	. .	. .	48.2	. .	. .	. .	6 51 48.11	−21.88	−1.07	IV.	2	17.365	−43 7.34	− 5.05	− 7.80	6 51 25.2	− 30 17 50.2
22	9.10	. .	. .	. .	. .	46.2	. .	. .	52 28.25	21.89	1.04	V.	2	21.225	39 5.54	5.15	6.94	52 5.3	30 13 47.6
23	9	. .	. .	11.2	. .	46.2	4.3	. .	54 28.79	21.90	0.90	IV.	4	41.048	18 17.73	5.41	2.58	54 6.0	29 52 55.7
24	8.9	. .	. .	19.2	. .	. .	12.2	. .	54 36.90	21.89	0.90	IV.	4	41.702	17 36.68	5.42	2.44	54 14.1	29 52 14.5
25	9	. .	. .	. .	. .	. .	23.	. .	55 47.33	21.89	1.13	VI.	2	8.258	52 38.93	5.58	9.82	55 24.3	30 27 24.3
26	9	. .	45.8	3.2	21.3	. .	. .	. .	58 21.37	21.90	1.08	IV.	2	12.902	47 47.00	5.92	8.80	57 58.4	22 31.7
27	9	. .	. .	. .	57.3	. .	. .	. .	6 59 57.21	21.91	1.05	IV.	2	17.469	43 0.81	6.13	7.78	59 34.2	30 17 44.7
28	9	. .	. .	. .	. .	33.2	. .	. .	7 0 15.52	21.91	0.81	V.	5	51.637	7 14.51	6.18	0.28	6 59 52.8	29 41 51.0
29	7.8	. .	. .	. .	. .	. .	12.2	. .	0 36.55	21.91	1.10	VI.	2	9.825	51 0.48	6.22	9.48	7 0 13.5	30 25 46.2
30	9.10	. .	. .	. .	21.3	39.2	. .	. .	2 21.21	21.91	1.04	IV.	2	19.025	41 23.04	6.46	7.43	1 58.3	30 16 6.9
31	9.10	. .	. .	. .	. .	28.3	. .	. .	3 10.59	21.91	0.82	V.	5	48.172	10 52.06	6.57	1.02	2 47.9	29 45 29.6
32	9.10	. .	. .	. .	. .	. .	19.2	. .	3 43.69	21.91	0.84	VI.	5	46.823	12 16.54	6.64	1.32	3 20.9	46 54.5
33	9	. .	. .	. .	56.5	14.5	. .	. .	4 56.57	21.92	0.84	IV.	4	45.976	14 11.20	6.79	1.72	4 33.8	29 48 49.7
34	8.9	. .	. .	. .	. .	. .	42.?	. .	5 6.35	21.92	1.09	VII.	2	10.361	50 27.11	6.83	9.36	4 43.3	30 25 13.3
35	9	. .	. .	. .	43.2	0.6	. .	. .	6 42.92	21.92	0.94	IV.	3	32.538	27 20.88	7.04	− 4.44	6 20.1	30 2 2.4
36	9.10	. .	. .	. .	. .	40.2	. .	. .	7 22.55	21.93	0.79	V.	5	53.845	4 55.78	7.13	+ 0.20	6 59.8	29 39 32.7
37	7.8	. .	. .	. .	30.3	48.3	6.	. .	8 30.38	21.93	0.95	IV.	3	29.632	30 23.16	7.26	− 5.08	8 7.5	30 5 5.5
38	9	. .	. .	19.2	37.2	. .	. .	. .	9 37.07	21.93	0.88	IV.	4	38.190	21 17.20	7.44	4.30	9 14.3	29 55 58.9
39	9	. .	. .	22.7	. .	. .	. .	. .	10 40.61	21.94	0.86	III.	4	41.767	17 32.04	7.59	2.42	10 17.8	29 52 12.0
40	8.9	. .	. .	. .	. .	57.3	16.2	. .	10 40.04	21.94	0.98	V.	3	24.600	35 38.84	7.59	6.19	10 17.1	30 10 22.6
41	9	. .	. .	. .	. .	37.5	. .	. .	11 19.68	21.94	0.93	V.	3	32.206	27 41.72	7.65	4.52	10 56.8	2 23.9
42	9	. .	. .	. .	. .	55.3	. .	. .	12 37.38	21.94	0.99	V.	3	23.935	36 20.42	7.83	6.34	12 14.4	11 4.6
43	9	. .	. .	10.3	28.2	. .	. .	. .	14 28.19	21.95	1.05	IV.	2	14.347	46 16.63	8.06	8.48	14 5.2	30 21 3.2
44	9	. .	. .	. .	. .	. .	9.7	. .	14 34.21	21.95	0.90	VI.	4	37.307	22 13.17	8.08	3.40	14 11.4	29 56 54.6
45	9	. .	. .	. .	58.5	. .	. .	. .	15 58.39	21.95	0.99	IV.	3	22.608	37 43.80	8.28	6.64	15 35.4	30 12 28.7
46	9	. .	. .	. .	. .	. .	40.2	. .	16 4.69	21.95	0.84	VI.	5	44.465	14 44.79	8.29	1.84	15 41.9	29 49 24.9
47	8	. .	49.2	7.3	25.2	42.3	. .	. .	18 24.94	21.96	0.87	IV.	4	38.448	21 1.01	8.50	3.15	18 2.1	55 42.7
48	9	. .	. .	. .	47.7	5.3	. .	. .	18 47.56	21.96	0.85	IV.	4	42.576	16 41.90	8.55	2.25	18 24.8	29 51 22.7
49	9	. .	. .	. .	. .	8.3	. .	. .	19 50.39	21.96	0.97	V.	3	24.262	36 0.11	8.80	6.26	19 27.5	30 10 45.2
50	9	. .	. .	. .	. .	47.7	15.3	. .	20 29.86	21.96	0.89	V.	4	35.589	24 0.73	8.88	3.78	20 7.0	29 58 43.4
51	8.9	. .	10.3	28.1	46.3	. .	. .	. .	23 46.16	21.96	1.03	IV.	2	15.099	45 29.34	9.34	8.30	23 23.2	30 20 17.0
52	9.10	. .	. .	. .	. .	23.	. .	. .	24 5.22	21.97	0.87	V.	4	37.136	22 23.65	9.36	3.43	23 42.4	29 57 6.4
53	9.10	. .	. .	. .	. .	. .	48.2	. .	24 12.70	21.97	0.85	VI.	4	41.085	18 15.97	9.38	2.57	23 49.9	29 52 57.9
54	9	. .	. .	. .	50.3	. .	26.	. .	25 50.33	21.97	0.92	IV.	3	29.412	30 37.08	9.60	5.13	25 27.4	30 5 21.8
55	9	. .	. .	. .	. .	. .	22.3	. .	25 46.76	21.97	0.98	VI.	3	22.794	37 31.81	9.59	6.59	25 23.8	12 18.0
56	9	. .	. .	57.5	15.	33.3	. .	. .	28 15.22	21.98	0.91	V.	3	30.772	29 11.50	9.92	− 4.83	27 52.3	30 3 56.3
57	9	. .	26.5	44.2	. .	. .	38.	. .	30 2.29	21.98	0.74	III.	5	53.100	5 42.23	10.16	+ 0.04	29 39.6	29 40 22.4
58	9	. .	. .	. .	. .	30.3	. .	. .	30 12.61	21.98	0.76	V.	4	49.816	9 7.68	10.19	− 0.68	29 49.9	29 43 48.6
59	9.10	. .	. .	49.3	. .	. .	. .	. .	32 7.23	21.98	0.99	III.	2	17.578	42 53.42	10.45	7.75	31 44.3	30 17 41.6
60	9	. .	42.	59.6	17.5	. .	. .	. .	33 17.54	21.99	0.92	IV.	3	27.496	32 37.21	10.60	5.55	32 54.6	30 7 23.4
61	9	. .	. .	. .	. .	45.	. .	. .	33 27.27	21.99	0.79	V.	5	45.896	13 14.73	10.62	1.52	33 4.5	29 47 56.9
62	8.9	. .	. .	13.2	. .	. .	. .	. .	34 31.13	21.99	0.80	III.	5	44.340	14 52.12	10.77	1.86	34 8.3	49 34.8
63	9	. .	. .	. .	53.2	. .	29.2	. .	34 53.38	21.99	0.76	IV.	5	49.516	9 27.58	10.81	0.75	34 30.6	44 9.1
64	9	. .	. .	. .	56.2	13.2	32.3	. .	34 56.12	21.98	0.75	IV.	5	51.292	7 36.10	10.82	0.35	34 33.4	42 17.3
65	8.9	. .	. .	. .	. .	51.3	. .	. .	36 33.56	21.99	0.80	V.	4	43.760	15 27.85	11.05	2.00	36 10.8	50 10.9
66	9	. .	. .	. .	. .	. .	22.3	. .	36 46.80	21.99	0.82	VI.	4	40.682	18 41.26	11.07	2.66	36 24.0	53 25.0
67	9	. .	12.3	30.5	. .	6.2	. .	. .	38 48.30	21.99	0.81	IV.	4	41.402	17 55.64	11.34	2.50	38 25.5	52 39.5
68	9.10	. .	. .	. .	. .	0.2	. .	. .	38 42.42	21.99	0.85	V.	4	36.674	22 52.59	11.33	3.53	38 19.6	29 57 37.5
69	9	. .	. .	45.	3.	. .	. .	. .	7 42 2.88	−21.99	−0.92	IV.	3	24.228	−36 2.24	−11.79	− 6.27	7 41 40.0	− 30 10 50.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 216	Jan. 23, 7 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.9			
	7 50	88 54 60.5	67.7	72.5	57.2	66.6	49.	62.25	30.272	37.	28.1	36.	35.5	42.2

REMARKS.

(216) 33. Micrometer reading assumed as 44r.976, not 45r.976.

(216) 50. Transit over T. VI assumed as at 5s.3 instead of 15s.3.

ZONE 216. JANUARY 23. C. $D_0 = -29° 34' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r	′ ″	″	″	h. m. s.	° ′ ″
70	9.10	. .	. .	. .	. .	34.	. .	. .	7 42 16.29	−21.99	− 0.76	V.	5	47.831	−11 13.27	−11.82	− 1.10	7 41 53.5	− 29 45 56.2
71	8.9	. .	. .	. .	11.2	. .	46.5	. .	43 11.03	21.99	0.81	IV.	4	40.666	18 41.70	11.94	2.66	42 48.2	29 53 26.3
72	8.9	. .	. .	. .	. .	8.7	26.2	. .	43 50.72	21.99	0.92	V.	3	24.078	36 11.52	12.02	6.31	43 27.8	30 10 59.9
73	8.9	. .	. .	51.3	9.2	. .	. .	. .	46 9.13	22.00	0.82	IV.	4	37.862	21 37.59	12.35	3.27	45 46.3	29 56 23.2
74	9.10	. .	. .	47.2	5.	. .	. .	. .	47 4.94	22.00	0.87	IV.	3	29.426	30 36.20	12.46	5.12	46 42.1	30 5 23.8
75	8	. .	16.3	34.5	52.	10.	. .	. .	49 52.13	22.00	0.82	IV.	3	36.961	22 43.23	12.84	3.47	49 29.3	29 57 29.5
76	8	. .	. .	29.2	47.	4.7	. .	. .	50 46.97	22.00	0.80	IV.	4	40.884	18 27.95	12.96	2.62	50 24.2	53 13.5
77	6	. .	. .	46.3	3.8	22.	39.5	. .	7 52 4.02	−22.00	− 0.81	IV.	3	38.358	−21 15.76	−13.14	− 3.16	7 51 41.2	− 29 56 2.1

ZONE 217. JANUARY 23. C. $D_0 = -28° 19' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	0.2	17.4	. .	. .	9 3 0.04	−21.87	− 0.82	IV.	4	57.065	− 1 32.39	− 0.74	− 0.41	9 2 37.4	− 28 21 13.5
2	9	. .	25.4	43.5	1.2	. .	. .	. .	7 0.98	21.85	0.80	IV.	3	33.841	25 58.94	1.28	5.12	6 38.3	28 45 45.3
3	8	. .	. .	. .	19.2	36.3	54.4	. .	7 18.96	21.85	0.77	IV.	2	17.365	43 7.34	1.33	8.65	6 56.3	29 2 57.3
4	9	. .	. .	. .	. .	. .	23.2	. .	7 48.16	21.85	0.79	VI.	3	29.668	30 20.71	1.38	6.07	7 25.5	28 50 8.2
5	9	. .	. .	. .	. .	. .	0.3	. .	8 25.09	21.85	0.75	VI.	2	9.498	51 21.24	1.47	10.31	8 2.5	29 11 13.0
6	9	. .	1.2	18.6	36.2	. .	. .	. .	11 36.27	21.84	0.81	IV.	3	32.307	27 35.45	1.89	5.52	11 13.6	28 47 22.9
7	9	. .	. .	. .	. .	57.2	. .	. .	11 39.71	21.84	0.85	V.	5	48.245	10 47.54	1.90	2.22	11 17.0	30 31.7
8	9	. .	. .	. .	. .	42.2	59.2	. .	12 24.38	21.83	0.82	V.	3	32.818	27 3.13	2.00	5.41	12 1.7	46 50.5
9	9	. .	. .	. .	. .	. .	8.2	. .	12 33.15	21.83	0.82	VI.	3	36.222	23 29.54	2.02	4.70	12 10.5	43 16.3
10	9	. .	. .	. .	6.	. .	. .	. .	14 5.87	21.83	0.83	IV.	4	41.536	17 47.24	2.22	3.60	13 43.2	37 33.1
11	8.9	. .	. .	. .	. .	36.5	. .	. .	14 19.02	21.83	0.86	V.	5	49.178	9 42.65	2.25	2.05	13 56.3	29 27.0
12	8.9	. .	. .	. .	. .	. .	11.3	. .	14 36.23	21.83	0.85	VI.	4	43.837	15 23.19	2.29	3.12	14 13.6	35 8.6
13	9	. .	23.5	40.7	. .	. .	. .	. .	16 58.60	21.82	0.86	III.	4	40.578	18 46.84	2.59	3.81	16 35.9	38 33.2
14	9	. .	. .	. .	12.2	. .	47.4	. .	17 12.21	21.82	0.88	IV.	5	50.528	8 24.06	2.63	1.76	16 49.5	28 8.4
15	9	. .	. .	. .	. .	40.3	. .	. .	17 22.84	21.82	0.88	V.	5	52.389	6 27.43	2.65	1.37	17 0.1	26 11.4
16	8.9	. .	. .	. .	. .	32.5	50.5	. .	18 15.22	21.82	0.87	V.	4	46.589	12 30.42	2.76	2.57	17 52.5	32 15.7
17	8.9	. .	. .	. .	. .	. .	0.?	. .	18 24.91	21.82	0.89	VI.	5	53.031	5 47.00	2.78	1.23	18 2.2	25 31.0
18	9	. .	. .	. .	. .	. .	9.2	. .	19 34.14	21.82	0.85	VI.	3	38.082	21 32.76	2.94	4.34	19 11.5	41 20.0
19	9	. .	. .	. .	. .	. .	12.5	. .	19 37.44	21.82	0.87	VI.	3	39.	. . .	. .	. .	19 14.7	40
20	9	. .	. .	. .	55.2	12.5	. .	. .	25 55.08	21.81	0.91	IV.	5	55.199	3 30.85	3.74	0.80	25 32.4	28 23 15.4
21	9	. .	16.5	. .	52.	. .	. .	. .	27 51.94	21.80	0.84	IV.	2	15.968	44 34.77	3.98	8.95	27 29.3	29 4 27.7
22	9.10	. .	9.4	27.2	44.5	. .	. .	. .	29 44.65	21.79	0.90	IV.	3	35.028	24 44.52	4.23	4.96	29 22.0	28 44 33.7
23	9.10	. .	. .	. .	16.2	. .	. .	. .	30 16.07	21.78	0.91	IV.	3	41.108	18 23.06	4.29	3.70	29 53.4	38 11.1
24	9.10	. .	. .	. .	3.2	21.	. .	. .	31 3.24	21.78	0.90	IV.	3	35.508	24 14.53	4.39	4.85	30 40.6	28 44 3.8
25	9	. .	. .	. .	. .	. .	. .	. .	31	21.78	0.86	VII.	2	12.770	47 55.85	4.41	9.63	30	29 7 49.9
26	9	. .	. .	7.5	. .	43.1	. .	. .	33 25.24	21.77	0.87	IV.	2	8.998	51 51.90	4.68	10.42	33 2.6	29 11 47.0
27	10	. .	. .	. .	. .	33.?	. .	. .	34 15.36	21.76	0.91	V.	3	27.917	32 10.62	4.79	6.44	33 52.7	28 52 1.9
28	10	. .	. .	. .	21.3	. .	. .	. .	35 21.17	21.76	0.92	IV.	4	37.681	21 49.01	4.92	4.40	34 58.5	28 41 38.3
29	7	. .	32.5	50.5	. .	. .	. .	. .	37 8.10	21.75	0.89	III.	2	13.284	47 22.80	5.15	9.52	36 45.5	29 7 17.5
30	9.10	. .	. .	. .	24.5	. .	59.2	. .	37 24.26	21.75	0.96	IV.	5	50.001	8 57.02	5.19	1.87	37 1.5	28 28 44.1
31	9.10	. .	. .	. .	. .	. .	23.5	. .	37 48.44	21.75	0.94	VI.	4	40.416	18 58.08	5.23	3.85	37 25.8	38 47.2
32	9	. .	. .	. .	. .	. .	49.2	. .	38 14.11	21.75	0.91	VI.	3	24.162	36 6.20	5.29	7.23	37 51.5	55 58.7
33	9	. .	. .	. .	. .	. .	49.5	. .	39 14.45	21.74	0.93	VI.	3	28.712	31 20.62	5.42	6.27	38 51.8	51 12.3
34	9	. .	. .	. .	28.	. .	3.1	. .	40 27.95	21.74	0.94	IV.	3	32.457	27 26.03	5.57	5.49	40 5.3	47 17.1
35	9	. .	. .	. .	20.5	38.	. .	. .	41 20.33	21.74	0.92	IV.	2	20.451	39 53.77	5.67	8.01	40 57.7	28 59 47.5
36	9	. .	13.5	. .	48.	. .	23.3	. .	43 48.33	21.73	0.90	IV.	2	8.503	52 23.13	5.98	10.52	43 25.7	29 12 19.6
37	10	. .	. .	48.2	. .	. .	41.2	. .	9 46 5.98	−21.72	− 0.93	IV.	2	16.308	−44 13.64	− 6.26	− 8.88	9 45 43.3	− 29 4 8.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 217	Jan. 23,	9 0	87 39 59.5	65.6	70.8	56.6	63.8	47.1	60.57	30.256	36.	27.4	36.2	36.	
		9 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.7			
		9 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.3			
		10 0	60.3	64.9	71.1	57.	63.2	47.4	60.65	30.250	36.	27.	35.5	33.5	41.8

ZONE 217. JANUARY 23. C. $D_0 = -28° 19' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
38	9.10	. .	. .	. .	15.7	. .	. .	. .	9 46 15.61	−21.72	− 0.94	IV.	2	18.451	−41 59.22	− 6.28	− 8.43	9 45 53.0	− 29 1 53.9
39	9	. .	54.7	. .	29.5	. .	. .	. .	48 29.76	21.71	0.95	IV.	2	20.195	40 9.76	6.56	8.06	48 7.1	29 0 4.4
40	9	. .	. .	. .	. .	. .	33.	. .	49 57.93	21.70	1.01	VI.	5	45.132	14 2.86	6.74	2.87	49 35.2	28 33 52.5
41	9	. .	. .	. .	. .	44.5	2.5	. .	50 27.21	21.70	1.00	V.	5	45.622	13 32.05	6.81	2.77	50 4.5	33 21.6
42	9.10	. .	. .	30.5	48.2	. .	. .	. .	51 48.11	21.69	0.97	IV.	3	25.605	34 35.80	6.97	6.92	51 25.5	54 29.7
43	8.9	. .	. .	. .	. .	40.3	57.8	. .	52 22.75	21.68	1.02	V.	5	43.695	15 32.92	7.04	3.15	52 0.0	35 23.1
44	10	. .	55.2	. .	30.7	. .	. .	. .	56 30.55	21.66	1.03	IV.	5	43.782	15 27.27	7.54	3.14	56 7.9	35 18.0
45	10	. .	. .	28.5	. .	3.5	. .	. .	58 46.03	21.65	1.02	IV.	3	34.542	25 15.15	7.81	2.98	58 23.4	45 5.9
46	9	. .	. .	. .	41.5	59.3	. .	. .	9 59 41.63	21.65	1.07	IV.	5	55.002	3 43.10	7.93	0.82	59 18.9	23 31.9
47	9	. .	. .	. .	. .	32.5	. .	. .	10 0 15.05	−21.65	− 1.07	V.	5	54.182	− 4 34.82	− 8.00	− 1.00	9 59 52.3	− 28 24 23.8

ZONE 218. JANUARY 27. C. $D_0 = -23° 18' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8.9	. .	. .	52.5	8.3	. .	42.5	. .	4 0 8.84	−21.09	− 1.69	IV.	4	36.858	−22 40.60	− 0.61	− 6.87	3 59 46.1	− 23 41 18.1
2	8.9	. .	. .	. .	. .	27.2	44.5	. .	0 10.60	21.10	1.53	V.	3	25.548	34 39.43	0.61	8.73	3 59 48.0	53 18.8
3	10	. .	. .	. .	. .	1.3	. .	. .	1 44.55	21.11	1.82	V.	4	47.192	11 52.57	0.74	5.23	4 1 21.6	30 28.5
4	9	. .	. .	40.3	56.5	14.	. .	. .	4 56.90	21.13	1.58	IV.	3	31.830	28 5.13	1.04	7.71	4 34.2	46 43.9
5	8	. .	28.4	45.3	2.4	. .	. .	. .	7 2.27	21.14	1.78	IV.	5	46.945	12 8.77	1.23	6.20	6 39.3	23 30 46.2
6	8	. .	. .	. .	. .	. .	23.8	. .	6 50.10	21.14	1.24	VI.	2	7.168	53 47.35	1.21	11.73	6 27.7	24 12 30.3
7	8	. .	. .	28.2	. .	2.3	. .	. .	9 45.32	21.17	1.68	IV.	4	41.048	18 17.73	1.47	6.22	9 22.5	23 36 55.4
8	8.9	. .	. .	. .	. .	46.3	3.5	. .	10 29.64	21.17	1.42	V.	3	24.419	35 50.32	1.53	8.91	10 7.0	54 30.8
9	8	. .	2.5	18.4	35.5	53.	9.4	. .	12 35.85	21.19	1.87	IV.	5	56.899	1 43.94	1.72	3.68	12 12.8	23 20 19.3
10	9	. .	. .	40.4	56.5	14.4	. .	. .	17 57.05	21.23	1.23	IV.	2	14.082	46 33.12	2.20	10.62	17 34.6	24 5 15.9
11	10	. .	33.2	. .	. .	20.2	. .	. .	20 7.03	21.25	1.72	IV.	5	50.135	8 48.66	2.41	4.76	19 44.0	23 27 25.8
12	8.9	. .	. .	16.2	32.2	49.1	. .	. .	20 32.56	21.25	1.71	IV.	4	49.072	9 54.14	2.45	4.94	20 9.6	28 31.5
13	10	. .	. .	. .	. .	35.3	. .	. .	21 18.37	21.25	1.36	V.	3	25.185	35 2.20	2.52	8.78	20 55.8	53 43.5
14	9	. .	. .	. .	23.5	. .	. .	. .	22 23.36	21.26	1.44	IV.	3	31.872	28 2.49	2.62	7.70	22 0 7	46 42.8
15	9	. .	. .	. .	. .	. .	. .	. .	22	21.26	1.71	VII.	5	51.248	7 39.12	2.68	4.58	22	26 16.4
16	9	. .	. .	. .	9.2	25.7	42.3	. .	24 8.87	21.28	1.36	IV.	3	27.372	32 45.06	2.78	8.43	22 46.2	51 26.3
17	9	. .	. .	. .	. .	42.3	. .	. .	24 25.42	21.29	1.41	V.	3	29.378	30 39.21	2.81	8.10	24 2.7	49 20.1
18	8.9	. .	. .	. .	. .	7.8	23.8	. .	24 50.59	21.29	1.47	V.	3	34.365	25 26.32	2.84	7.29	24 27.8	44 6.5
19	10	. .	47.5	. .	22.	. .	. .	. .	27 21.63	21.31	1.31	IV.	3	25.000	35 13.68	3.08	8.81	26 59.0	53 55.6
20	9	. .	46.5	. .	. .	37.3	. .	. .	29 20.43	21.33	1.52	IV.	5	41.905	17 25.08	3.28	6.08	28 57.6	36 4.4
21	8	. .	45.5	2.3	19.	36.2	52.4	. .	31 19.17	21.34	1.72	IV.	5	56.008	2 39.94	3.47	3.81	30 56.1	21 17.2
22	9.10	. .	44.	59.3	. .	. .	. .	. .	35 17.03	21.37	1.25	III.	3	26.241	33 55.89	3.85	8.61	34 54.4	52 38.4
23	8	. .	. .	. .	25.3	42.5	59.5	. .	36 25.61	21.38	1.59	IV.	5	49.713	9 15.09	3.98	4.82	36 2.6	27 53.9
24	8	. .	. .	. .	. .	38.3	55.2	. .	37 21.48	21.39	1.22	V.	2	24.167	36 0.92	4.07	8.96	36 58.9	54 44.0
25	9.10	. .	. .	. .	. .	. .	16.3	. .	41 42.74	21.41	1.27	VI.	3	31.135	28 48.73	4.49	7.82	41 20.1	47 31.0
26	8.9	. .	. .	. .	. .	10.2	. .	. .	42 53.43	21.43	1.47	V.	4	45.599	13 32.55	4.61	5.47	42 30.5	32 12.6
27	10	. .	. .	22.7	. .	56.5	. .	. .	44 39.70	21.45	1.46	IV.	4	44.858	14 18.55	4.79	5.60	44 16.8	32 58.9
28	9	. .	. .	. .	9.5	. .	43.5	. .	48 9.65	21.47	1.26	IV.	3	33.614	26 13.31	5.14	7.42	47 46.9	34 55.9
29	8.9	. .	. .	. .	35.2	. .	. .	. .	48 35.07	21.47	1.26	IV.	3	33.528	26 18.77	5.18	7.44	48 12.3	45 1.4
30	8.9	. .	. .	. .	. .	11.5	. .	. .	48 54.64	21.48	1.24	V.	3	32.288	27 36.64	5.21	7.63	48 31.9	46 19.5
31	8.9	. .	. .	. .	. .	. .	51.3	. .	49 17.71	21.48	1.35	VI.	3	39.648	19 54.57	5.26	6.43	48 54.9	38 36.3
32	8	. .	. .	. .	. .	. .	5.3	. .	4 50 31.70	−21.49	− 1.42	VI.	3	46.159	−13 6.01	− 5.38	− 5.37	4 50 8.8	− 23 31 46.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″							in.	°	°	°	°	°
Zone 218	Jan. 27, 3 55	82 39 60.8	65.6	69.2	58.	61.2	50.0	60.80						
	4 0	. .	. .	. .	. .	. .	. .	. .	30.378	44.6	32.1	44.2	42.8	50.
	4 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.8			
	4 40	. .	. .	. .	. .	. .	. .	. .	30.386	42.5	30.4			
	4 50	60.2	66.1	71.1	57.5	63.	47.8	60.95						

ZONE 219. JANUARY 27. C. $D_0 = -23° 13'.50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9.10	. .	. .	. .	33.5	. .	. .	. .	6 19 33.44	−22.03	−0.99	IV.	2	12.922	−47 45.75	− 0.90	− 7.93	6 19 10.4	24 1 44.6
2	9.10	. .	. .	. .	21.5	. .	. .	. .	20 21.38	22.03	1.07	IV.	3	26.725	33 25.46	0.99	5.56	19 58.3	23 47 22.0
3	9.10	. .	21.	. .	54.3	11.3	27.5	. .	21 54.34	22.03	1.12	IV.	3	31.686	28 14.22	1.18	4.72	21 31.2	42 10.1
4	10	. .	. .	. .	19.2	. .	53.	. .	23 19.25	22.04	1.07	IV.	3	20.712	39 42.67	1.35	6.59	22 56.1	53 40.6
5	9.10	. .	. .	. .	36.2	53.5	9.7	. .	23 36.24	22.05	1.08	IV.	3	21.250	39 9.04	1.38	6.50	23 13.1	23 53 6.9
6	9	. .	. .	. .	35.7	52.3	. .	. .	24 35.44	22.05	1.04	IV.	2	12.102	48 37.31	1.50	8.07	24 12.4	24 2 36.9
7	9.10	. .	. .	. .	22.	. .	. .	. .	25 21.87	22.05	1.13	IV.	3	27.618	32 29.51	1.59	5.41	24 58.7	23 46 26.5
8	9	. .	. .	. .	48.2	. .	. .	. .	25 48.08	22.05	1.18	IV.	4	37.712	21 47.08	1.65	3.69	25 24.8	35 42.4
9	9.10	. .	. .	. .	. .	. .	30.3	. .	25 56.68	22.05	1.09	VI.	3	20.054	40 23.82	1.66	6.70	25 33.5	54 22.2
10	9	. .	. .	. .	. .	3.5	. .	. .	26 46.71	22.06	1.21	V.	5	41.795	17 32.16	1.79	3.01	26 23.4	31 27.0
11	9	. .	. .	. .	. .	43.2	. .	. .	27 26.28	22.06	1.14	V.	3	25.968	34 12.95	1.85	5.69	27 3.1	48 10.5
12	9.10	. .	. .	. .	. .	49.7	. .	. .	28 32.81	22.06	1.16	V.	3	28.354	31 43.33	1.98	5.28	28 9.6	45 40.6
13	9.10	. .	. .	. .	. .	. .	34.	. .	29 0.38	22.07	1.28	VI.	4	50.721	8 11.26	2.04	1.51	28 37.0	22 4.8
14	8.9	. .	. .	. .	16.3	33.2	50.1	. .	39 16.28	22.07	1.11	IV.	2	14.719	45 53.11	2.19	7.62	29 53.1	59 52.9
15	9.10	. .	43.8	0.7	. .	. .	. .	. .	32 17.65	22.08	1.27	III.	4	41.800	17 29.96	2.44	3.00	31 54.3	31 25.4
16	8	. .	. .	. .	31.3	48.6	5.4	. .	32 31.61	22.08	1.29	IV.	5	45.952	13 11.09	2.47	2.31	32 8.2	27 5.9
17	8	. .	. .	28.2	. .	2.2	. .	. .	33 45.27	22.08	1.27	III.	4	39.968	19 25.01	2.62	3.32	33 21.9	33 21.0
18	9	. .	. .	. .	5.	21.3	. .	. .	34 4.69	22.08	1.27	IV.	4	39.148	20 17.02	2.66	3.46	33 41.3	34 13.1
19	9	. .	. .	. .	. .	. .	51.	. .	34 17.44	22.08	1.24	VI.	3	31.965	27 56.59	2.68	4.67	33 54.1	41 53.9
20	10	. .	. .	. .	34.8	. .	. .	. .	36 34.69	22.09	1.22	IV.	3	24.315	35 56.85	2.97	5.97	36 11.4	49 55.8
21	10	. .	. .	. .	. .	. .	37.5	. .	37 3.94	22.09	1.27	VI.	3	31.757	28 9.64	3.03	4.70	36 40.6	42 7.4
22	9.10	. .	. .	. .	. .	10.2	. .	. .	37 53.37	22.09	1.29	V.	3	35.755	23 58.92	3.13	4.03	37 30.0	37 56.1
23	8.9	. .	. .	45.	2.2	19.1	. .	. .	39 2.07	22.10	1.29	IV.	3	31.327	28 36.93	3.27	4.78	38 38.7	23 42 35.0
24	9.10	. .	. .	. .	48.2	5.8	. .	. .	39 48.44	22.11	1.19	IV.	2	12.922	47 45.75	3.37	7.93	39 25.1	24 1 47.1
25	9	. .	. .	31.8	48.3	. .	. .	. .	40 48.50	22.11	1.22	IV.	2	15.421	45 9.27	3.49	7.50	40 25.2	23 59 10.3
26	9.10	. .	. .	27.2	. .	. .	. .	. .	41 44.09	22.11	1.31	VI.	3	31.972	27 56.15	3.60	4.67	41 20.7	41 54.4
27	9.10	. .	. .	. .	46.2	. .	. .	. .	41 46.11	22.11	1.26	IV.	2	20.684	39 39.03	3.60	6.59	41 22.7	53 39.2
28	9	. .	15.	. .	48.5	. .	. .	. .	43 48.68	22.12	1.25	IV.	2	16.108	44 26.05	3.87	7.38	43 25.3	58 27.3
29	9	. .	15.1	. .	48.6	. .	. .	. .	43 48.78	22.12	1.25	IV.	2	16.555	43 58.08	3.87	7.41	43 25.4	57 59.4
30	8	. .	. .	. .	. .	11.	27.2	. .	43 53.80	22.12	1.27	V.	2	19.996	40 22.50	3.88	6.71	43 30.4	54 23.1
31	9	. .	. .	. .	. .	. .	14.3	. .	44 40.70	22.13	. .	VI.	4	43.892	15 19.81	3.97	2.65	44 17.3	29 16.4
32	9	. .	. .	. .	. .	. .	7.	. .	45 33.40	22.13	1.41	VI.	4	44.863	14 18.80	4.09	2.49	45 9.9	28 15.4
33	9	. .	. .	. .	. .	. .	. .	. .	46	22.13	1.33	VII.	3	26.052	34 7.44	4.20	5.67	46	48 7.3
34	9	. .	. .	. .	23.	40.	. .	. .	47 22.94	22.14	1.29	IV.	2	15.478	45 5.69	4.31	7.49	46 59.5	59 7.5
35	9	. .	. .	. .	. .	42.3	. .	. .	47 25.30	22.14	1.30	V.	2	18.364	42 5.05	4.32	7.00	47 1.9	56 6.4
36	5	. .	. .	. .	18.2	35.2	. .	. .	48 18.15	22.14	1.29	IV.	2	14.695	45 54.61	4.45	7.62	47 54.7	59 56.7
37	9	. .	. .	. .	. .	. .	55.2	. .	48 21.64	22.14	1.37	VI.	3	29.438	30 35.32	4.45	5.09	47 58.1	44 34.9
38	9	. .	. .	55.2	12.2	. .	. .	. .	51 12.11	22.15	1.45	IV.	4	40.000	19 23.50	4.80	3.31	50 48.5	33 21.6
39	9.10	. .	. .	. .	. .	44.8	. .	. .	51 28.09	22.15	1.52	V.	5	54.532	4 12.92	4.84	0.86	51 4.4	18 8.6
40	8	. .	. .	. .	44.2	1.5	17.6	. .	52 44.25	22.16	1.43	IV.	3	32.014	27 53.64	5.00	4.66	52 20.7	41 53.3
41	9.10	. .	. .	55.3	. .	29.3	. .	. .	54 12.32	22.16	1.45	IV.	3	32.038	27 52.14	5.18	4.65	53 48.7	41 52.0
42	9.10	. .	. .	. .	. .	1.5	. .	. .	54 44.66	22.16	1.46	V.	3	34.898	24 52.63	5.25	4.17	54 21.0	38 52.1
43	9	. .	. .	. .	46.2	. .	. .	. .	55 46.09	22.17	1.58	IV.	5	55.218	3 29.66	5.38	0.75	55 22.3	17 25.8
44	9.10	. .	. .	. .	. .	. .	23.	. .	55 49.37	22.17	1.58	VI.	5	53.342	5 27.73	5.39	1.09	55 25.6	19 24.2
45	9	. .	. .	. .	. .	. .	. .	. .	56	. .	. .	VI.	5	55.534	3 10.07	5.50	0.69	56 13.8	17 6.3
46	5	. .	. .	. .	. .	26.	42.8	. .	57 9.16	22.18	1.46	V.	3	26.658	33 29.73	5.57	5.57	56 45.5	23 47 30.9
47	9	. .	. .	. .	. .	11.8	. .	. .	6 57 54.69	22.18	1.38	V.	2	9.349	51 30.46	5.66	8.56	6 57 31.1	24 5 34.7
48	8	. .	56.2	13.2	30.	47.3	. .	. .	7 1 30.13	22.19	1.55	IV.	3	36.092	23 37.82	6.12	3.97	7 1 6.4	23 37 37.9
49	8.9	. .	23.2	40.8	57.5	. .	. .	. .	2 57.39	22.19	1.51	IV.	3	25.785	34 24.37	6.30	5.72	2 33.7	48 26.4
50	9	. .	. .	34.2	. .	8.5	. .	. .	7 3 51.37	−22.20	−1.55	IV.	3	31.823	−28 5.56	− 6.42	− 4.69	7 3 27.6	− 23 42 6.7

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 219	Jan. 27,* 6 20	82 39 61.2	69.5	72.3	62.	64.5	50.7	63.37	30.392	39.5	28.4	38.2	37.3	
	7 0	61.1	68.9	73.2	61.	65.9	48.9	63.17	30.394	38.	27.7	37.2	36.8	

REMARKS.

(219) 11. Declination differs 9′ 37″ from Arg. Z. 274, 129, and Transit Z. January 22, 1848.

(219) 17. Declination differs 24″ from Arg. Z. 274, 137, and Transit Z. January 22, 1848; micrometer reading perhaps 39.668.

*Minutes of circle reading assumed as 34 instead of 39.

[(219) 10. Doubtful 10s.]

ZONE 220. FEBRUARY 9. S. $D_0 = -28° 19' 0''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	22.	. .	57.	. .	. .	. .	4 42 57.10	−28.01	−0.82	IV.	4	37.285	−22 13.99	− 2.08	− 6.53	4 42 28.3	− 28 41 22.6
2	9	. .	. .	. .	. .	. .	6.	. .	42 30.88	28.03	0.75	.	3	20.121	40 19.74	2.04	10.00	42 2.1	59 31.8
3	8	. .	. .	. .	. .	11.	. .	. .	44 53.35	28.04	0.78	.	3	27.471	32 38.84	2.27	8.52	44 24.5	28 51 49.6
4	7	. .	49.	. .	14.5	. .	. .	. .	49 14.45	28.08	0.71	IV.	2	12.	49	2.66	11.66	48 45.7	29 8
5	7	. .	. .	45.	13.	30.	. .	. .	50 12.63	28.09	0.78	V.	3	31.358	28 35.05	2.76	7.73	49 43.8	28 47 45.5
6	7	. .	33.	50.2	8.	. .	. .	. .	53 8.11	28.12	0.71	IV.	2	12.822	47 52.02	3.04	11.49	52 39.3	29 7 6.6
7	6	. .	. .	. .	41.	58.	. .	. .	53 40.66	28.13	0.82	IV.	4	38.355	21 6.91	3.10	6.32	53 11.7	28 40 16.3
8	8	. .	19.	. .	. .	. .	. .	. .	56 54.43	28.16	0.72	.	2	17.668	42 46.96	3.42	10.50	56 25.6	29 2 0.9
9	9	. .	. .	40.	. .	. .	. .	. .	57 57.74	28.17	0.70	.	2	11.955	48 45.89	3.53	11.67	57 28.9	8 1.1
10	9	. .	. .	. .	. .	. .	42.5	. .	4 58 7.31	28.17	0.70	.	2	12.532	48 11.03	3.54	11.55	4 57 38.4	29 7 26.1
11	9	. .	31.	48.	. .	. .	. .	. .	5 1 5.98	28.18	0.78	II.	3	33.202	26 38.72	3.83	7.36	5 0 37.0	28 45 49.9
12	9	. .	. .	. .	. .	51.	. .	. .	1 33.38	28.18	0.76	.	3	27.902	32 11.37	3.88	8.43	1 4.4	28 51 23.7
13	8	. .	. .	. .	. .	. .	50.	. .	2 14.79	28.19	0.69	.	2	9.543	51 18.58	3.94	12.18	1 45.9	29 10 34.6
14	9	. .	. .	. .	. .	. .	41.	. .	3 5.95	28.20	0.80	.	4	37.030	22 30.57	4.03	6.59	2 37.0	28 41 41.2
15	9	. .	52.	. .	. .	. .	. .	. .	6 27.38	28.23	0.74	.	3	25.089	35 7.66	4.38	9.00	5 58.4	54 21.0
16	9	. .	. .	. .	. .	39.5	. .	. .	7 21.96	28.23	0.80	.	4	39.835	19 34.16	4.47	6.02	6 52.9	38 44.7
17	6	. .	10.	28.	45.5	. .	. .	. .	9 45.48	28.25	0.83	.	5	47.745	11 18.56	4.71	4.44	9 16.4	28 30 27.7
18	7	. .	48.	5.	22.5	. .	. .	. .	13 22.85	28.27	0.71	IV.	2	17.893	42 33.97	5.09	10.44	12 53.9	29 1 49.5
19	8	. .	57.8	. .	32.8	. .	. .	. .	15 32.89	28.29	0.81	IV.	4	46.323	12 46.79	5.31	4.73	15 3.8	28 31 56.8
20	9	. .	50.	7.	25.	. .	. .	. .	17 24.98	28.31	0.82	IV.	4	48.220	10 47.73	5.52	4.35	16 55.9	28 29 57.6
21	8	. .	. .	. .	14.5	. .	. .	. .	19 14.43	28.33	0.68	.	2	12.911	47 46.44	5.71	11.47	18 45.4	29 7 3.6
22	9	. .	9.	. .	. .	. .	. .	. .	21 44.38	28.34	0.73	.	3	24.070	36 11.45	5.97	9.20	21 15.3	28 55 26.6
23	9	. .	24.	. .	. .	. .	. .	. .	22 59.31	28.35	0.81	.	5	44.955	14 12.78	6.11	5.00	22 30.2	33 23.9
24	10	. .	. .	. .	.	56.	. .	. .	23 38.45	28.36	0.78	.	4	38.550	20 54.99	6.17	6.28	23 9.3	40 7.4
25	7	. .	. .	. .	. .	6.	. .	. .	24 48.49	28.37	0.81	.	5	45.078	14 6.26	6.30	4.97	24 19.3	33 17.5
26	7	. .	. .	. .	. .	55.	13.	. .	25 37.70	28.37	0.78	.	4	39.653	19 45.70	6.39	6.06	25 8.6	38 58.1
27	8	. .	45.	. .	. .	. .	. .	. .	28 20.34	28.39	0.74	.	3	29.333	30 41.54	6.68	8.12	27 51.2	49 56.3
28	8	. .	. .	. .	37.	. .	. .	. .	28 36.86	28.39	0.76	.	3	34.603	25 11.26	6.71	7.07	28 7.7	44 25.0
29	4	. .	12.5	30.	48.	. .	. .	. .	30 47.77	28.41	0.74	IV.	3	30.940	29 0.96	6.95	7.81	30 18.6	48 15.7
30	7	. .	41.5	. .	. .	. .	. .	. .	32 16.83	28.43	0.76	.	3	35.918	23 48.12	7.12	6.81	31 47.6	43 2.0
31	5	. .	. .	. .	22.3	41.	. .	. .	32 22.78	28.43	0.75	.	3	32.206	27 41.72	7.13	7.56	31 53.6	46 56.4
32	7	. .	. .	. .	12.	29.	. .	. .	33 11.59	28.44	0.72	.	3	23.972	36 18.16	7.22	9.20	32 42.4	55 34.6
33	8	. .	14.	32.	. .	. .	. .	. .	35 49.50	28.45	0.77	III.	4	39.752	19 38.42	7.51	6.04	35 20.3	38 52.0
34	8	. .	. .	. .	. .	44.	. .	. .	36 26.37	28.45	0.72	.	3	28.668	31 23.64	7.58	8.24	35 57.2	50 39.5
35	9	. .	. .	. .	47.	. .	. .	. .	38 46.87	28.47	0.76	.	4	38.005	21 28.69	7.84	6.39	38 17.6	40 42.9
36	9	. .	. .	. .	. .	. .	6.	. .	39 30.95	28.48	0.75	.	4	35.852	23 44.41	7.93	6.82	39 1.7	42 59.2
37	5	. .	7.	25.	43.	. .	. .	. .	41 42.62	28.49	0.76	.	3	37.122	22 33.20	8.16	6.57	41 13.4	41 47.9
38	8	. .	. .	. .	27.2	45.	. .	. .	42 27.28	28.50	0.78	V.	4	42.393	16 53.88	8.26	5.51	41 58.0	36 7.6
39	8	. .	. .	. .	. .	59.	16.8	. .	43 41.64	28.50	0.82	.	5	52.340	6 30.57	8.40	3.53	43 12.3	25 42.5
40	8	. .	. .	31.	. .	. .	. .	. .	45 48.75	28.52	0.80	.	4	50.119	8 47.91	8.65	3.98	45 19.4	28 0.5
41	7	. .	. .	37.	54.	. .	. .	. .	46 54.26	28.53	0.75	IV.	3	37.290	22 22.77	8.77	5.53	46 25.0	28 41 37.1
42	.	. .	. .	9.	. .	. .	. .	. .	48 26.70	28.54	0.67	.	2	17.582	42 53.10	8.94	10.51	47 57.5	29 2 12.6
43	7	. .	. .	. .	. .	12.	. .	. .	48 54.12	28.55	0.64	.	2	9.589	51 15.34	9.00	12.17	48 24.9	10 36.5
44	7	. .	. .	2.	. .	. .	. .	. .	50 19.75	28.55	0.64	.	2	10.428	50 21.91	9.16	11.99	49 50.6	29 9 43.1
45	6	. .	. .	. .	. .	. .	49.	. .	50 13.93	28.55	0.70	.	3	25.900	39 30.80	9.15	9.82	49 44.7	28 58 49.8
46	6	. .	. .	. .	37.	. .	. .	. .	51 36.85	28.56	0.73	.	3	32.270	27 37.77	9.31	7.54	51 7.6	46 54.6
47	6	. .	. .	. .	. .	. .	27.	. .	51 51.93	28.56	0.70	.	3	25.608	34 35.55	9.34	8.89	51 22.7	28 53 53.8
48	6	. .	. .	. .	. .	. .	30.	. .	52 54.81	28.57	0.65	.	2	12.470	48 14.97	9.46	11.56	52 25.6	29 7 36.0
49	8	. .	. .	. .	47.	. .	. .	. .	5 56 46.89	−28.60	−0.78	.	5	48.643	−10 22.25	− 9.91	− 3.23	5 56 17.5	− 28 29 35.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 220	Feb. 9,	4 40	87 39 60.	64.8	70.6	56.5	64.0	48.	60.65	29.972	38.3	26.7	40.	40.	40.8
		5 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	26.1			
		5 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	25.5	40.	33.	33.5
		5 40	. .	. .	. .	. .	. .	. .	. .	29.984	35.2	24.9			
		6 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	24.4			
		6 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	23.9			
		6 30	60.	65.3	70.6	56.5	64.3	46.8	60.58	. .	. .	23.9			

REMARKS.

(220) 4. Transit over T. II assumed as at 39^s instead of 49^s.

(220) 5. Transit over T. III assumed as at 55^s instead of 45^s.

(220) 31. Transits 1^s discordant.

(220) 45. Micrometer reading assumed as $20^r.900$, not $25^r.900$, to agree with Arg. Z. 350, 149; 353, 33; and 357, 89.

ZONE 220. FEBRUARY 9. S. $D_{\circ} = -28° 19' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8	. .	. .	59.	16.	. .	. .	. .	5 58 16.27	−28.62	−0.69	IV.	3	25.023	−35 12.24	−10.09	− 9.01	5 57 47.0	− 28 54 31.3
51	6	. .	. .	. .	. .	34.5	. .	. .	5 59 16.97	28.62	0.75	.	4	41.933	17 22.57	10.20	5.60	58 47.6	36 38.4
52	.	. .	. .	. .	. .	. .	38.	. .	6 0 2.94	28.62	0.74	.	4	38.852	20 36.15	10.29	6.22	5 59 33.6	39 52.7
53	7	. .	. .	. .	. .	. .	44.	. .	1 8.92	28.63	0.79	.	5	51.570	7 18.91	10.43	3.69	6 0 39.5	26 33.0
54	8	. .	. .	. .	. .	. .	30.	. .	2 54.95	28.63	0.74	.	3	37.240	22 25.79	10.64	6.54	2 25.6	41 43.0
55	8	. .	58.	. .	. .	. .	. .	. .	5 33.30	28.65	0.78	.	5	51.378	7 29.83	10.95	3.52	5 3.9	26 44.3
56	7	. .	. .	. .	. .	3.	. .	. .	5 45.52	28.65	0.78	.	4	49.450	14 44.67	10.98	5.09	5 16.1	34 0.7
57	6	. .	. .	19.	36.	. .	. .	. .	7 36.33	28.66	0.79	IV.	5	52.468	6 22.28	11.21	3.51	7 6.9	25 37.0
58	7	. .	24.	. .	. .	. .	. .	. .	8 59.30	28.67	0.78	.	4	49.438	9 30.03	11.38	4.11	8 29.9	28 45.5
59	6	. .	. .	. .	. .	23.	. .	. .	9 5.48	28.68	0.75	.	3	42.623	16 48.05	11.39	5.47	8 36.0	36 4.9
60	6	. .	. .	. .	. .	. .	8.	. .	9 32.95	28.68	0.73	.	3	37.178	22 29.69	11.44	6.55	9 3.5	41 47.7
61	7	. .	. .	8.5	26.	. .	. .	. .	11 26.01	28.69	0.68	IV.	3	26.528	33 37.95	11.67	8.69	10 56.6	28 52 58.3
62	8	. .	17.	. .	. .	. .	. .	. .	12 52.47	28.71	0.63	.	2	12.480	48 12.47	11.85	11.56	12 23.1	29 7 35.9
63	8	. .	5.	. .	. .	. .	. .	. .	13 40.37	28.72	0.68	.	3	26.423	33 44.03	11.95	8.72	13 11.0	28 53 4.7
64	7	. .	. .	. .	50.	. .	. .	. .	13 49.89	28.72	0.67	.	3	22.412	37 56.22	11.97	9.53	13 20.5	28 57 17.7
65	7	. .	. .	54.	11.	29.	. .	. .	17 11.28	28.73	0.63	.	2	14.942	45 39.12	12.26	11.06	15 41.9	29 5 2.4
66	8	. .	38.	56.	. .	. .	. .	. .	18 13.63	28.73	0.60	.	2	8.586	52 17.30	12.52	12.37	17 44.3	29 11 42.2
67	5	. .	. .	7.	24.	. .	. .	. .	19 24.27	28.74	0.72	.	3	37.330	22 20.27	12.67	6.52	18 54.8	28 41 39.5
68	8	. .	. .	. .	. .	. .	20.	. .	19 44.94	28.74	0.73	.	3	41.792	17 39.94	12.71	5.63	19 15.5	36 58.3
69	9	. .	. .	. .	17.	35.	. .	. .	21 17.10	28.75	0.67	V.	3	24.738	35 30.12	12.90	9.06	20 47.7	54 52.1
70	9	. .	58.	. .	. .	. .	. .	. .	24 33.33	28.77	0.71	.	3	35.350	24 24.01	13.30	6.92	24 3.8	43 44.2
71	7	. .	. .	. .	. .	0.	17.6	. .	24 42.51	28.77	0.75	V.	4	45.118	14 2.74	13.33	4.97	24 13.0	28 33 21.0
72	6	. .	. .	19.	36.5	. .	. .	. .	26 36.61	28.78	0.59	IV.	2	8.142	52 45.71	13.57	12.46	26 7.2	29 12 11.7
73	7	. .	32.	49.8	. .	. .	. .	. .	28 7.50	28.79	0.62	III.	2	14.148	46 28.48	13.77	11.21	27 38.1	5 53.5
74	9	. .	. .	. .	. .	. .	56.	. .	28 20.79	28.80	0.60	.	2	10.635	50 9.93	13.80	11.94	27 51.4	29 9 35.7
75	7	. .	12.	30.	47.	. .	. .	. .	6 30 47.29	−28.81	−0.70	IV.	3	36.245	−23 28.28	−14.11	− 6.74	6 30 17.8	− 28 42 49.1

ZONE 221. FEBRUARY 9. S. $D_{\circ} = -26° 29' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	57.5	. .	. .	. .	. .	. .	7 42 32.23	−29.02	−1.51	.	3	40.159	−19 22.18	− 2.36	− 8.09	7 42 1.7	− 26 48 42.6
2	7	. .	. .	. .	56.	. .	. .	. .	42 55.89	29.02	1.63	.	4	51.813	8 4.75	2.41	6.16	42 25.2	37 23.3
3	8	. .	. .	. .	. .	. .	44.8	. .	44 10.34	29.03	1.46	.	3	36.250	23 27.97	2.58	8.82	43 39.9	52 49.4
4	7	. .	. .	43.	. .	. .	. .	. .	46 0.35	29.04	1.45	.	3	34.623	25 9.82	2.82	9.13	45 29.9	54 31.8
5	7	. .	. .	. .	. .	. .	41.	. .	46 6.55	29.04	1.40	.	3	30.275	29 42.47	2.83	9.95	45 36.1	59 5.2
6	7	. .	20.5	. .	. .	. .	. .	. .	47 55.24	29.04	1.44	.	3	35.510	24 13.91	3.06	8.96	47 24.8	53 35.9
7	8	. .	9.	. .	. .	. .	. .	. .	48 43.73	29.05	1.46	.	3	37.679	21 57.68	3.17	8.56	48 13.2	26 51 19.4
8	8	. .	. .	. .	. .	24.	42.	. .	49 6.43	29.05	1.17	.	1	8.892	51 58.92	3.23	14.02	48 36.2	27 21 26.2
9	7	. .	. .	. .	. .	. .	40.5	. .	50 6.01	29.05	1.52	.	5	45.532	13 37.95	3.35	7.08	49 35.4	26 42 58.4
10	9	. .	. .	. .	. .	35.5	. .	. .	51 18.22	29.05	1.42	.	3	35.382	24 22.57	3.51	8.99	50 47.8	26 53 45.1
11	5	. .	24.	41.	. .	. .	. .	. .	52 58.60	29.05	1.27	.	2	19.488	40 53.61	3.73	12.00	52 28.3	27 10 19.3
12	8	. .	. .	. .	. .	. .	40.	. .	53 5.53	29.05	1.34	.	3	26.693	33 27.48	3.75	10.63	52 35.2	27 2 51.9
13	7	. .	. .	. .	. .	. .	41.	. .	54 6.54	29.06	1.43	.	4	36.362	23 12.66	3.88	8.80	53 36.0	26 52 35.3
14	7	. .	. .	. .	. .	30.	. .	. .	55 12.76	29.06	1.47	.	4	39.802	19 38.55	4.03	8.16	54 42.2	49 0.7
15	6	. .	. .	. .	15.	. .	. .	. .	56 14.88	29.06	1.51	.	4	45.679	18 40.79	4.17	8.01	55 44.3	48 3.0
16	7	. .	. .	. .	. .	. .	55.8	. .	56 21.32	29.06	1.45	.	4	38.613	20 51.29	4.18	8.38	55 50.8	50 13.9
17	8	. .	. .	. .	. .	50.5	. .	. .	57 33.24	29.07	1.43	.	4	37.743	21 45.51	4.34	8.53	57 2.7	26 51 8.4
18	8	. .	23.	42.	. .	. .	. .	. .	7 59 57.75	−29.07	−1.32	.	3	28.501	−31 34.05	− 4.67	−10.29	7 59 27.4	− 27 0 59.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 221	Feb. 9,	7 40	85 49 60.	68.8	75.3	60.5	69.	48.8	63.73	30.040	31.4	23.4	. .	32.	29.
		8 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	23.7			
		8 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	23.9			
		9 0	61.0	68.9	75.8	60.8	69.	48.8	64.05	30.110	31.5	24.0	40.	31.	29.

REMARKS.

(220) 56. Micrometer reading assumed as 44r.450, not 49r.450.

(220) 65. Minutes assumed as 16, not 17.

(220) 69. Declination differs 10′ 28″ from Arg. Z. 357, 141; micrometer reading probably 34r.738.

(221) 2. Micrometer reading assumed as 50r.813, not 51r.813.

(221) 8. Transits discordant; T. VI rejected.

(221) 15. Micrometer reading assumed as 40r.679, not 45r.679, to agree with Arg. Z. 352, 62, and 360, 231.

ZONE 221. FEBRUARY 9. S. $D_0 = -26° 29' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
19	5	. .	33.2	51.	. .	. .	. .	. .	8 1 8.18	−29.07	−1.51	.	4	47.350	−11 41.83	− 4.82	− 6.73	8 0 37.6	−26 41 3.4
20	9	. .	. .	. .	. .	28.	45.5	. .	1 10.91	29.07	1.52	.	4	48.358	10 39.51	4.82	6.54	0 40.3	26 40 0.9
21	7	. .	. .	32.	. .	. .	. .	. .	3 49.33	29.07	1.34	.	3	28.719	31 20.18	5.17	10.25	3 18.9	27 0 45.6
22	8	. .	. .	. .	. .	12.5	. .	. .	3 55.30	29.07	1.48	.	5	46.918	12 10.71	5.18	6.82	3 24.8	26 41 32.7
23	7	. .	32.5	50.	. .	. .	. .	. .	6 7.32	29.08	1.27	.	3	24.968	35 15.50	5.38	10.96	5 37.0	27 4 41.8
24	9	. .	. .	. .	. .	. .	41.	. .	6 6.50	29.09	1.50	.	5	48.758	10 15.35	5.48	6.49	5 35.9	26 39 37.3
25	8	. .	. .	. .	2.	. .	. .	. .	8 1.88	29.09	1.26	.	3	24.990	35 14.30	5.74	10.95	7 31.5	27 4 41.0
26	7	. .	. .	. .	. .	4.5	23.	. .	8 47.87	29.09	1.32	.	3	31.575	28 21.31	5.83	9.70	8 17.5	26 57 46.8
27	9	. .	. .	. .	. .	. .	18.	. .	9 43.47	29.09	1.20	.	2	18.952	41 28.24	5.98	12.10	9 13.2	27 10 56.3
28	7	. .	. .	. .	41.	. .	. .	. .	11 40.87	29.09	1.40	.	4	40.189	19 11.76	6.23	8.09	11 10.4	26 48 36.1
29	6	. .	. .	. .	. .	. .	34.	. .	12 59.50	29.09	1.48	.	5	47.912	11 8.38	6.41	6.63	12 28.9	40 31.4
30	5	. .	22.	39.	. .	. .	. .	. .	13 56.59	29.09	1.51	.	5	51.515	7 21.73	6.54	5.96	13 26.0	36 44.2
31	7	. .	. .	. .	30.	. .	. .	. .	14 29.88	29.09	1.44	.	4	45.165	13 59.41	6.61	7.15	13 59.3	26 43 23.2
32	8	. .	. .	. .	. .	23.	. .	. .	15 5.56	29.09	1.19	.	2	19.910	40 27.89	6.70	11.91	14 35.3	27 9 56.5
33	7	. .	. .	. .	24.	. .	. .	. .	16 23.88	29.10	1.44	.	4	45.494	13 38.83	6.88	7.09	15 53.3	26 43 2.8
34	6	. .	14.	31.	. .	. .	. .	. .	17 48.67	29.10	1.08	.	2	9.942	50 52.14	7.06	13.82	17 18.5	27 20 23.0
35	9	. .	. .	. .	. .	20.8	. .	. .	18 3.54	29.10	1.34	.	4	38.160	21 19.46	7.11	8.46	17 33.1	26 50 45.0
36	7	. .	38.2	56.	. .	. .	. .	. .	20 13.15	29.10	1.33	.	3	36.456	23 14.92	7.40	8.78	19 42.7	52 41.1
37	5	. .	. .	. .	. .	46.	3.5	. .	20 28.91	29.10	1.45	.	4	48.198	10 49.49	7.43	6.57	19 58.4	40 13.5
38	7	. .	. .	. .	48.8	. .	. .	. .	21 48.65	29.10	1.29	.	3	31.999	27 54.58	7.61	9.62	21 18.3	26 57 21.8
39	5	. .	. .	. .	. .	43.	0.	. .	22 25.57	29.10	1.22	.	3	25.452	34 45.58	7.69	10.86	21 55.2	27 4 14.1
40	5	. .	. .	. .	. .	57.	14.	. .	23 39.64	29.10	1.35	.	4	38.848	20 36.09	7.85	8.33	23 9.2	26 50 2.3
41	6	. .	. .	. .	. .	8.	. .	. .	24 50.44	29.11	1.06	.	2	10.402	50 24.41	8.01	13.73	24 20.3	27 19 56.1
42	7	. .	. .	. .	. .	. .	51.	. .	26 16.54	29.11	1.24	.	3	29.188	30 51.01	8.21	10.15	25 46.2	27 0 19.4
43	5	. .	5.	22.8	. .	. .	. .	. .	28 40.00	29.11	1.49	.	6	53.982	4 46.75	8.53	5.49	28 9.4	26 34 10.8
44	8	. .	. .	. .	10.	. .	. .	. .	32 9.89	29.11	1.45	.	6	52.460	6 22.78	9.01	5.78	31 39.3	35 47.6
45	8	. .	. .	. .	. .	13.5	. .	. .	32 56.30	29.11	1.39	.	5	46.450	12 40.27	9.10	6.90	32 25.8	42 6.3
46	7	. .	. .	18.	. .	. .	. .	. .	34 35.41	29.11	1.37	.	4	44.843	14 18.92	9.33	7.21	34 4.9	43 45.5
47	6	. .	. .	. .	23.	40.	. .	. .	35 22.79	29.11	1.26	.	3	34.665	25 7.37	9.45	9.12	34 52.4	26 54 35.9
48	7	. .	0.	17.	. .	. .	. .	. .	37 34.64	29.12	1.05	.	2	14.150	46 28.37	9.74	13.02	37 4.5	27 16 1.1
49	8	. .	45.	. .	. .	. .	. .	. .	39 19.80	29.12	1.11	.	3	21.477	38 54.37	9.99	11.62	38 49.6	8 26.0
50	7	. .	. .	. .	. .	47.	4.	. .	39 29.60	29.12	1.18	.	3	28.100	31 59.33	10.01	10.36	38 59.3	1 29.7
51	7	. .	10.8	. .	. .	. .	. .	. .	41 45.63	29.12	1.02	II.	2	17.018	43 27.72	10.29	12.47	41 15.5	13 0.5
52	8	. .	. .	7.	. .	. .	. .	. .	42 24.40	29.12	1.02	II.	2	17.020	43 27.60	10.39	12.47	41 54.3	13 0.5
53	8	. .	. .	. .	57.	. .	. .	. .	42 50.91	29.12	1.03	II.	2	18.742	41 39.59	10.45	11.66	42 20.8	11 11.7
54	4	. .	5.5	23.	40.	. .	. .	. .	44 40.19	29.12	1.08	IV.	3	20.650	39 46.63	10.69	11.77	44 10.0	9 19.1
55	7	. .	. .	. .	. .	22.	. .	. .	46 4.62	29.12	1.13	III.	3	24.952	35 16.50	10.88	10.96	45 34.4	4 48.3
56	4	. .	1.	18.	36.	. .	. .	. .	49 35.68	29.12	1.10	IV.	3	23.419	36 53.05	11.36	11.25	49 5.4	6 25.7
57	7	. .	3.	20.	. .	. .	. .	. .	51 37.58	29.12	1.07	III.	3	21.603	38 46.72	11.62	11.60	51 7.4	27 8 19.9
58	8	. .	16.	33.	. .	. .	. .	. .	52 50.55	29.12	1.25	III.	4	39.163	20 15.58	11.78	8.27	52 20.2	26 49 45.6
59	6	. .	. .	30.	. .	. .	. .	. .	53 47.41	29.12	1.01	II.	2	16.148	44 22.42	11.91	12.63	53 17.3	27 13 57.0
60	6	. .	34.2	52.	. .	. .	. .	. .	55 9.14	29.12	1.17	III.	3	33.554	26 16.95	12.10	9.32	54 38.9	26 55 48.4
61	7	. .	. .	39.	46.	. .	. .	. .	56 46.15	29.12	1.30	III.	4	46.745	12 19.62	12.30	6.84	56 15.7	41 48.8
62	8	. .	. .	. .	. .	28.	. .	. .	58 10.68	29.12	1.13	.	3	29.680	30 20.14	12.50	10.06	57 40.4	59 52.7
63	8	. .	. .	34.	52.	. .	. .	. .	8 59 51.64	29.12	1.27	IV.	5	44.617	14 35.00	12.73	7.25	8 59 21.3	44 5.0
64	8	. .	28.5	. .	. .	. .	. .	. .	9 1 3.23	−29.12	−1.27	II.	5	46.455	−12 38.83	−12.89	− 6.90	9 0 32.8	−26 42 8.6

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1849. h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(221) 53. Transit over T. III assumed as 51^s, not 57^s, to agree with Arg. Z. 352, 143, and Mural, 1849, March 12.

(221) 56. Transit over T. II assumed as at 1^s instead of 6^s.1.

(221) 61. Transit over T. III assumed as at 29^s instead of 39^s.

Zone 222. February 10. C. $D_0 = -28° 19' .0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	. .	27.3	. .	2.2	. .	3 37 27.16	−27.88	−1.64	IV.	4	41.245	−18 5.49	+ 0.09	− 1.74	3 36 57.6	− 28 37 7.1
2	7	. .	. .	. .	. .	. .	51.6	. .	38 16.42	27.88	1.77	VI.	2	13.557	47 6.74	+ 0.05	7.33	37 46.8	29 6 14.0
3	8.9	. .	. .	. .	59.2	. .	34.1	. .	40 59.06	27.89	1.65	IV.	4	39.255	20 10.37	− 0.09	2.14	40 29.5	28 39 12.6
4	8	. .	26.2	44.4	2.2	19.8	37.4	. .	43 2.04	27.92	1.73	IV.	3	23.598	36 41.69	0.21	5.30	42 32.4	55 47.2
5	9	. .	. .	. .	. .	15.5	33.2	. .	47 58.03	27.96	1.68	V.	3	33 653	26 10.93	0.49	3.27	47 28.4	45 14.7
6	9.10	. .	. .	. .	. .	44.	1.5	. .	49 26.44	27.98	1.67	V.	3	35.166	24 35.99	0.57	2.97	48 56.8	28 43 39.5
7	9	. .	14.5	32.2	. .	7.5	25.3	. .	53 49.91	28.00	1.82	IV.	2	7.823	53 5.52	0.84	8.49	53 20.1	29 12 14.8
8	8.9	. .	. .	. .	25.2	. .	1.3	. .	55 25.65	28.03	1.69	IV.	4	35.942	23 38.07	0.94	2.81	54 55.9	28 42 41.8
9	7.8	. .	. .	. .	45.2	2.4	20.3	. .	56 45.00	28.04	1.75	IV.	3	22.515	37 49.69	1.02	5.52	56 15.2	56 56.2
10	8	. .	32.8	50.2	7.4	42.2	. .	. .	59 7.59	28.07	1.69	IV.	3	33.278	26 34.51	1.18	3.34	58 37.8	45 39.0
11	9.10	. .	. .	. .	39.2	. .	15.2	. .	3 59 39.61	28.08	1.69	IV.	3	33.238	26 36.96	1.21	3.35	3 59 9.8	28 45 41.5
12	9	. .	. .	26.5	43.2	. .	. .	. .	4 1 43.67	28.09	1.79	IV.	2	14.147	46 29.11	1.35	7.20	4 1 13.8	29 5 37.7
13	8.9	. .	7.4	25.2	43.3	1.4	18.6	. .	3 43.20	28.11	1.82	IV.	2	8.876	51 59.80	1.49	8.26	3 13.3	29 11 9.6
14	9.10	. .	. .	11.2	. .	. .	. .	. .	6 28.82	28.14	1.71	III.	3	29.441	30 35.07	1.67	4.11	5 59.0	28 49 40.9
15	8	. .	. .	7.8	25.5	. .	0.2	. .	7 25.33	28.15	1.74	IV.	3	23.727	36 33.54	1.74	5.27	6 55.4	55 40.5
16	9.10	. .	. .	. .	. .	. .	. .	. .	7	28.15	1.70	VII.	3	32.798	27 4.07	1.78	3.44	7 . .	46 9.3
17	9	. .	. .	44.2	1.2	. .	. .	. .	10 1.45	28.17	1.71	IV.	3	32.621	27 15.62	1.92	3.48	9 31.6	46 21.0
18	9	. .	. .	38.7	. .	14.5	31.3	. .	10 56.50	28.18	1.71	IV.	3	31.807	28 6.57	1.98	3.64	10 26.6	47 12.2
19	9.10	. .	27.5	. .	3.2	. .	. .	. .	13 2.94	28.21	1.64	IV.	5	45.635	13 31.11	2.14	0.85	12 33.1	28 32 34.1
20	8	. .	. .	. .	. .	19.5	. .	. .	14 1.64	28.22	1.80	V.	2	10.794	49 59.64	2.22	7.88	13 31.6	29 9 9.7
21	8.9	. .	. .	15.3	33.2	50.3	. .	. .	17 32.95	28.24	1.66	IV.	4	42.946	16 18.55	2.48	1.40	17 3.0	28 35 22.4
22	8	. .	. .	1.2	18.2	36.	. .	. .	19 18.53	28.26	1.60	IV.	4	49.931	14 13.85	2.62	1.00	18 48.7	33 17.5
23	9	. .	. .	. .	1.2	18.3	. .	. .	20 0.86	28.27	1.70	IV.	3	29.439	30 35.38	2.67	4.11	19 30.9	28 49 42.2
24	9	. .	. .	. .	. .	21.3	. .	. .	21 3.54	28.28	1.78	V.	2	18.802	41 37.33	2.75	6.26	20 33.5	29 0 46.3
25	9	. .	. .	. .	. .	. .	6.3	. .	21 31.17	28.28	1.78	VI.	2	18.906	41 31.05	2.79	6.24	21 1.1	29 0 40.1
26	9	. .	. .	. .	2.3	. .	37.3	. .	24 2.20	28.30	1.70	IV.	3	35.845	23 53.20	2.99	2.83	23 32.2	28 42 59.0
27	9	. .	. .	. .	. .	39.3	. .	. .	24 21.71	28.31	1.71	V.	3	33.185	26 40.29	2.01	3.36	23 51.7	28 45 45.7
28	7.8	. .	. .	. .	51.2	9.2	. .	. .	25 51.23	28.32	1.84	IV.	2	7.705	53 12.99	3.13	8.50	25 21.1	29 12 24.6
29	7.8	. .	. .	. .	. .	53.2	10.5	. .	26 35.34	28.33	1.82	V.	2	12.443	48 16.41	3.20	7.55	26 5.2	29 7 27.2
30	9.10	. .	. .	. .	. .	. .	53.?	. .	27 17.96	28.34	1.72	VI.	3	31.475	28 27.58	3.26	3.70	26 47.9	28 47 34.5
31	7.8	. .	. .	. .	32.2	. .	7.3	. .	28 32.16	28.35	1.71	IV.	3	33.142	26 42.94	3.36	3.37	28 2.1	45 49.7
32	9	. .	. .	. .	. .	. .	. .	. .	29	28.35	1.67	VII.	4	46.581	12 31.36	3.45	0.66	29	31 35.5
33	9	. .	. .	47.2	. .	22.	. .	. .	32 4.73	28.37	1.64	IV.	5	48.607	10 24.58	3.65	0.26	31 34.7	29 28.5
34	9.10	. .	. .	49.8	. .	. .	. .	. .	34 7.53	28.39	1.64	III.	5	48.195	10 50.12	3.83	0.34	33 37.5	29 54.3
35	8	. .	36.3	54.3	12.	. .	47.1	. .	35 11.89	28.40	1.63	IV.	5	49.072	9 55.33	3.92	0.18	34 41.9	28 59.4
36	9	. .	31.	48.5	6.1	. .	. .	. .	37 6.18	28.42	1.77	III.	2	22.563	37 53.27	4.09	5.51	36 36.0	57 2.9
37	9	. .	. .	. .	36.	53.6	. .	. .	37 35.90	28.42	1.77	IV.	2	21.627	38 39.87	4.13	5.69	37 5.7	57 49.8
38	8	. .	37.2	55.2	12.5	30.5	. .	. .	40 12.65	28.45	1.77	IV.	3	23.443	36 51.54	4.35	5.33	39 42.4	56 1.2
39	9	. .	. .	39.7	. .	14.8	. .	. .	42 57.30	28.46	1.70	IV.	3	37.482	22 10.66	4.60	2.50	42 27.1	41 17.9
40	9	. .	. .	. .	. .	. .	7.3	. .	43 32.18	28.47	1.79	VI.	2	20.177	40 11.52	4.65	5.98	43 1.9	59 22.2
41	9	. .	. .	. .	43.2	11.5	28.8	. .	44 53.55	28.48	1.76	IV.	3	27.522	32 35.60	4.77	4.51	44 23.3	28 51 44.9
42	8	. .	39.3	57.3	15.2	32.8	50.3	. .	49 15.00	28.52	1.83	IV.	2	12.237	48 28.96	5.16	7.59	48 44.6	29 7 41.7
43	8	. .	. .	. .	. .	30.3	48.	. .	50 12.83	28.53	1.73	III.	3	31.358	28 34.80	5.26	3.73	49 42.6	28 47 43.8
44	7.8	. .	33.	50.7	8.5	26.4	. .	. .	53 8.47	28.56	1.84	IV.	2	12.766	47 55.59	5.55	7.49	52 38.1	29 7 8.6
45	8	. .	. .	. .	42.	59.6	17.1	. .	53 41.98	28.56	1.71	IV.	4	38.317	21 9.23	5.60	2.34	53 11.7	28 40 17.2
46	9	. .	. .	. .	. .	. .	9.5	. .	54 34.32	28.57	1.83	VI.	2	14.118	46 31.49	5.68	7.22	54 3.9	29 5 44.4
47	9	. .	. .	39.2	. .	. .	. .	. .	57 56.94	28.59	1.84	III.	2	11.858	48 51.97	6.00	7.67	57 26.5	8 5.6
48	9.10	. .	. .	50.2	. .	25.3	. .	. .	4 58 7.70	28.60	1.84	IV.	2	12.455	48 15.29	6.03	7.55	4 57 37.3	29 7 28.9
49	9	. .	31.3	49.	6.2	. .	41.4	. .	5 1 6.42	28.62	1.73	IV.	3	33.205	26 39.03	6.32	3.36	5 0 36.1	28 45 48.7
50	9	. .	. .	. .	33.2	. .	9.3	. .	5 1 33.65	−28.63	−1.76	IV.	3	27.802	−32 17.84	− 6.36	− 4.45	5 1 3.3	− 28 51 28.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 222	Feb. 10, 3 40	87 39 61.2	63.1	70.8	55.8	63.1	48.6	60.43	30.040	40.	32.	36.8	38.2	38.8
	4 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.7			
	4 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.2			
	4 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.6			
	4 45	. .	. .	. .	. .	. .	. .	. .	30.020	39.	30.5			
	5 0	61.4	63.8	71.	56.	62.8	47.6	60.43	30.002[a]	36.5	30.	. .	36.	33.8

REMARKS.

(222) 10. Transit over T. VI assumed to have been recorded as over T. V.

(222) 22. Micrometer reading assumed as $44^r.931$, not $49^r.931$.

(222) 37. Right ascension differs 1^m from Arg. Z. 351, 47.

(222) 41. Time of transit over T. IV assumed as at $53^s.2$ instead of $43^s.2$.

[(222) 16. Precedes 15. 10^s.]

[a] Barom. assumed as 30.020; at. therm., 38.5.

ZONE 223. FEBRUARY 13. C. $D_0 = -32° 4' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9.10	. .	39.3	. .	16.3	. .	. .	. .	7 51 16.15	−30.69	−0.91	IV.	2	21.751	−38 32.04	−2.60	−12.17	7 50 44.6	−32 43 36.8
2	8	. .	. .	. .	54.	. .	31.2	. .	51 54.27	30.69	0.91	IV.	2	14.665	45 56.55	2.67	14.02	51 22.7	51 3.2
3	8	. .	. .	. .	57.1	. .	33.5	. .	51 56.99	30.69	0.91	VI.	2	21.009	39 19.20	2.68	12.35	51 25.4	44 24.2
4	9.10	. .	. .	. .	31.2	. .	. .	. .	53 31.09	30.69	0.99	IV.	5	53.416	5 22.77	2.85	4.01	52 59.4	10 19.6
5	10	. .	. .	. .	37.2	. .	. .	. .	53 37.09	30.69	0.99	VII.	5	54.460	4 17.43	2.86	3.75	53 5.4	9 14.0
6	9	. .	. .	. .	. .	. .	. .	. .	55	30.70	0.97	VII.	5	46.971	12 7.32	3.05	5.63	55	17 6.0
7	9	. .	. .	20.	38.5	. .	44.5	. .	56 38.25	30.70	0.93	IV.	2	19.662	40 43.14	3.22	12.74	56 6.6	45 49.1
8	9	. .	. .	. .	39.	27.2	45.	. .	56 8.53	30.70	0.91	IV.	2	12.675	48 1.36	3.16	14.58	55 36.9	53 9.1
9	8.9	. .	. .	. .	. .	55.3	13.3	. .	57 36.83	30.70	0.93	V.	3	21.331	39 4.03	3.33	12.27	57 5.2	44 9.6
10	8	. .	. .	. .	56.5	15.3	. .	. .	7 58 56.74	30.71	0.99	IV.	5	48.797	10 12.52	3.48	5.18	58 25.0	15 11.2
11	9	. .	. .	11.5	29.7	. .	. .	. .	8 0 29.80	30.71	0.92	III.	2	11.512	49 13.87	3.66	14.83	7 59 58.2	54 22.4
12	9	. .	. .	. .	. .	. .	9.5	. .	0 33.02	30.71	0.95	VI.	3	24.568	35 40.78	3.67	11.40	8 0 1.4	40 45.9
13	9.10	. .	51.4	. .	. .	. .	. .	. .	2 28.17	30.72	0.95	II.	3	25.744	34 26.44	3.89	11.11	1 56.5	39 31.4
14	8.9	. .	. .	39.3	57.3	. .	. .	. .	2 57.50	30.72	0.93	IV.	2	11.527	49 13.43	3.94	14.82	2 25.8	54 22.2
15	9	. .	. .	. .	. .	. .	34.3	. .	3 57.81	30.72	0.96	VI.	3	23.862	36 24.88	4.05	11.59	3 26.1	41 30.5
16	8.9	. .	. .	. .	. .	56.2	. .	. .	3 37.71	30.72	0.94	V.	3	17.021	43 34.25	4.01	13.38	3 6.1	48 41.6
17	8.9	. .	. .	. .	46.3	4.8	. .	. .	4 46.34	30.72	0.98	IV.	3	36.068	23 39.33	4.15	8.45	4 14.6	28 41.9
18	9	. .	. .	. .	. .	. .	30.5	. .	4 54.05	30.72	1.00	VI.	4	46.004	13 7.33	4.17	6.43	4 22.3	18 7.9
19	9	. .	. .	. .	. .	. .	2.3	. .	5 46.53	30.72	1.03	VI.	5	54.038	4 43.87	4.26	3.90	5 14.8	9 42.0
20	9	. .	22.4	40.8	. .	. .	. .	. .	7 59.14	30.73	0.99	III.	3	33.725	26 6.09	4.51	9.04	7 27.4	31 9.6
21	9	. .	. .	. .	. .	31.3	49.3	. .	8 12.75	30.73	0.96	V.	2	14.873	45 43.76	4.54	13.93	7 41.1	50 52.2
22	9	. .	. .	. .	18.3	. .	. .	. .	11 18.19	30.73	0.98	IV.	3	22.454	37 53.58	4.89	11.97	10 46.5	43 0.4
23	8.9	. .	. .	. .	. .	0.5	. .	. .	11 42.20	30.73	1.00	V.	3	32.184	27 43.11	4.93	9.44	11 10.5	32 47.5
24	8	. .	. .	. .	. .	24.3	42.9	. .	12 6.27	30.73	1.03	V.	4	44.985	14 11.03	4.98	6.17	11 34.5	19 12.2
25	9	. .	. .	29.4	47.3	. .	. .	. .	47.46	. .	. .	IV.	3	26.868	33 16.43	5.25	10.81	(13 16)	38 22.4
26	9	. .	. .	. .	. .	17.3	35.4	. .	14 58.99	30.74	1.01	V.	3	31.663	28 15.73	5.31	9.58	14 27.2	33 20.6
27	9	. .	. .	10.3	28.2	. .	. .	. .	15 28.39	30.74	1.04	III.	4	44.864	14 17.61	5.37	6.21	14 55.6	19 19.2
28	7	. .	. .	. .	0.3	18.3	37.2	. .	16 0.30	30.74	1.01	IV.	3	30.268	29 43.37	5.42	9.94	15 28.6	34 48.7
29	9.10	. .	. .	. .	12.2	. .	. .	. .	16 12.05	30.74	1.01	V.	3	30.215	29 46.70	5.44	9.95	15 40.3	34 52.1
30	10	. .	. .	. .	. .	. .	32.3	. .	16 55.77	30.74	0.99	VI.	2	18.965	41 27.36	5.53	12.87	16 24.0	46 35.8
31	8	. .	. .	16.3	34.5	. .	11.3	. .	18 34.64	30.75	1.04	IV.	4	39.570	30 18.00	5.72	7.55	18 2.8	35 21.3
32	9.10	. .	. .	. .	. .	. .	3.2	. .	18 26.77	30.75	1.03	VI.	3	35.122	24 38.63	5.70	8.69	17 55.0	29 43.0
33	9	. .	. .	. .	. .	. .	52.5	. .	19 16.06	30.75	1.04	VI.	3	38.302	21 19.15	5.79	7.84	18 44.3	26 22.8
34	9	. .	. .	35.3	53.3	11.4	. .	. .	20 53.32	30.75	1.04	IV.	3	37.201	22 28.31	5.98	8.15	20 21.5	27 32.4
35	8.9	. .	. .	. .	. .	26.2	44.5	. .	21 7.89	30.75	1.01	V.	2	22.032	38 14.86	6.00	12.07	20 36.1	43 22.9
36	10	. .	. .	. .	12.3	. .	. .	. .	22 12.20	30.75	1.01	IV.	2	19.079	41 19.71	6.13	12.83	21 40.4	46 28.7
37	9	. .	. .	. .	. .	. .	55.8	. .	22 19.20	30.75	0.99	VI.	2	12.498	48 13.16	6.15	14.57	21 47.5	53 23.9
38	9	. .	. .	. .	17.3	. .	. .	. .	24 17.18	30.75	1.08	IV.	5	49.036	9 57.59	6.36	5.16	23 45.3	14 59.1
39	9	. .	. .	. .	55.2	. .	. .	. .	24 55.08	30.75	1.08	IV.	5	49.451	9 31.66	6.44	5.04	24 23.2	14 33.1
40	8.9	. .	. .	. .	. .	. .	. .	. .	24	30.75	1.04	VI.	3	30.637	29 19.98	6.50	9.84	24	34 26.3
41	9	. .	. .	. .	. .	. .	8.?	. .	25 31.47	30.76	1.02	VI.	2	18.918	41 30.30	6.51	12.89	25 59.7	46 39.7
42	9	. .	40.1	59.2	17.4	35.4	. .	. .	30 17.18	30.76	1.06	IV.	3	27.674	32 26.00	7.04	10.63	29 45.4	37 33.7
43	9	. .	17.5	36.	54.2	12.5	. .	. .	31 54.20	30.76	1.06	IV.	3	32.354	27 32.50	7.21	9.39	31 22.4	32 39.1
44	10	. .	. .	. .	. .	33.2	. .	. .	32 14.69	30.76	1.04	V.	2	15.691	44 52.52	7.25	13.71	31 42.9	50 3.5
45	9	. .	12.8	31.3	49.2	. .	. .	. .	35 49.46	30.76	1.07	IV.	3	23.122	37 11.56	7.31	11.81	35 17.6	42 20.7
46	10	. .	. .	. .	5.2	. .	. .	. .	36 5.11	30.76	1.05	IV.	2	17	. .	8.	13.	35 33.3	48
47	9	. .	28.3	46.2	. .	. .	. .	. .	38 4.80	30.77	1.09	III.	3	28.154	31 55.70	7.91	10.47	37 32.9	37 4.1
48	5	. .	29.	47.2	6.	. .	42.2	. .	38 5.73	30.77	1.08	IV.	3	26.462	33 42.15	7.91	10.92	37 33.9	38 51.0
49	9	. .	30.5	48.8	6.5	. .	. .	. .	8 41 6.96	−30.77	−1.09	IV.	3	23.449	−36 51.16	−8.24	−11.69	8 40 35.1	−32 42 1.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 223	Feb. 13, 7 45	91 24 59.9	65.7	70.4	56.4	63.	47.6	60.50						
	7 50	. .	. .	. .	. .	. .	. .	. .	30.036	39.	29.	40.7	35.9	36.3
	8 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.8			
	8 20	. .	. .	. .	. .	. .	. .	. .		. .	30.2			
	7 50	. .	. .	. .	. .	. .	. .	. .	30.026	37.5	31.			
	9 0	60.1	65.0	71.2	55.4	63.1	46.	60.13	. .	. .	31.8	. .	34.5	36.
	9 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.4			
	9 40	. .	. .	. .	. .	. .	. .	. .	30.016	. .	32.6			
	10 0	59.6	64.1	71.2	55.4	61.4	46.5	59.70	30.022	37.	32.2	. .	34.8	36.3

REMARKS.

(223) 7. Transit over T. VI assumed as at $14^s.5$ instead of $44^s.5$.

[(223) 40. Precedes 39. 2^s or 3^s.]

ZONE 223. FEBRUARY 13. C. $D_0 = -32° 4' 50''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	..	..	..	..	..	34.5	..	8 41 58.04	−30.77	−1.14	VI.	5	51.532	− 7 21.29	− 8.34	− 4.52	8 41 26.1	− 32 12 24.2
51	8	..	..	..	20.3	..	..	..	42 20.22	30.77	1.07	IV.	2	14.925	45 40.12	8.37	13.91	41 48.4	50 52.4
52	9	..	..	..	..	..	44.2	..	42 7.68	30.77	1.08	VI.	2	19.520	40 52.73	8.35	12.73	41 35.8	46 3.8
53	9	..	..	53.2	..	30.5	48.3	..	44 11.92	30.77	1.14	IV.	4	45.419	13 43.53	8.58	6.08	43 40.0	18 48.2
54	7	..	..	..	17.5	..	54.	..	44 17.46	30.77	1.15	IV.	5	50.621	8 18.16	8.59	4.75	43 45.5	13 21.5
55	9	..	..	..	..	27.	45.3	..	45 8.79	30.77	1.12	V.	3	34.538	25 15.40	8.68	8.85	44 36.9	30 22.9
56	9.10	..	36.2	54.3	12.5	..	..	..	47 12.65	30.77	1.14	IV.	3	39.455	20 6.92	8.91	7.58	46 40.7	25 13.4
57	9	..	42.5	1.3	19.3	..	..	..	48 19.34	30.77	1.12	IV.	3	31.748	28 10.33	9.03	9.55	47 47.5	33 18.9
58	9	..	..	..	..	49.2	8.2	..	49 31.15	30.77	1.09	V.	2	14.564	46 3.34	9.17	14.00	48 59.3	51 16.5
59	8	..	..	..	..	10.5	28.2	..	49 51.82	30.77	1.09	V.	2	15.902	44 39.35	9.20	13.66	49 20.0	49 52.2
60	10	..	..	..	..	..	11.8	..	53 35.37	30.77	1.15	IV.	3	33.543	26 17.83	9.61	9.08	53 3.4	31 26.5
61	10	..	..	..	..	59.	..	..	53 40.70	30.77	1.14	V.	3	31.165	28 47.04	9.62	9.70	53 8.8	33 56.4
62	9	..	..	..	..	..	3.2	..	54 26.69	30.77	1.12	VI.	2	21.049	39 16.70	9.70	12.32	53 54.8	44 28.7
63	9	..	..	..	43.5	1.9	20.3	..	8 58 43.61	30.77	1.16	IV.	3	34.492	25 18.28	10.17	8.85	58 11.7	30 27.3
64	9.10	..	..	49.2	7.8	..	..	..	9 0 7.62	30.77	1.18	IV.	4	42.152	17 8.50	10.33	7.90	59 35.7	22 16.7
65	10	..	..	..	..	37.2	55.2	..	0 18.90	30.77	1.21	V.	5	54.988	3 44.16	10.35	3.69	8 59 46.9	8 48.2
66	9	..	..	..	47.2	5.2	..	..	1 46.98	30.77	1.16	IV.	3	31.189	28 45.53	10.51	9.69	9 1 15.1	33 55.7
67	9	..	21.3	..	57.5	..	..	..	4 57.69	30.77	1.18	IV.	3	35.415	24 20.43	10.85	8.62	4 25.7	33 29.9
68	9	..	..	17.2	..	..	11.8	..	8 35.43	30.76	1.15	IV.	2	12.117	48 36.36	11.25	14.63	8 3.5	53 52.2
69	9	..	..	29.3	..	6.2	24.	..	8 47.63	30.76	1.16	IV.	2	17.480	43 0.12	11.27	13.23	8 15.7	48 14.6
70	8.9	..	..	..	52.3	11.	39.3	..	9 52.53	30.76	1.18	IV.	3	23.458	36 50.60	11.40	11.69	9 20.6	42 3.7
71	9.10	..	..	..	30.8	..	..	..	12 30.66	30.76	1.22	IV.	4	40.525	18 50.61	11.68	7.33	11 58.7	23 59.6
72	10	..	..	..	25.?	..	..	..	13 24.85	30.76	1.21	IV.	3	35.363	24 23.70	11.78	8.65	12 51.9	29 34.1
73	9	..	..	..	..	..	26.3	..	13 49.85	30.76	1.23	VI.	4	46.196	12 55.39	11.82	5.89	13 17.9	18 3.1
74	8	..	17.4	35.6	53.8	..	30.6	..	17 53.98	30.76	1.22	IV.	3	31.556	28 22.50	12.27	9.60	17 22.0	33 34.4
75	9.10	..	..	..	..	..	54.8	..	18 18.34	30.76	1.26	VI.	5	52.004	6 51.54	12.32	4.42	17 46.3	11 58.3
76	9	..	..	..	57.3	15.8	34.2	..	19 57.47	30.75	1.23	IV.	3	33.358	26 29.50	12.50	9.19	19 25.5	31 41.2
77	9	..	..	..	31.2	..	7.2	..	20 30.90	30.75	1.22	V.	3	24.107	36 9.84	12.56	11.52	19 58.9	41 23.9
78	9.10	..	..	..	..	..	8.3	..	21 31.84	30.75	1.27	VI.	5	50.612	8 56.58	12.67	4.94	20 59.8	14 4.2
79	9.10	..	..	..	9.2	27.5	..	..	23 9.16	30.75	1.26	IV.	4	41.375	17 57.33	12.85	7.10	22 37.2	23 7.3
80	8.9	..	..	..	..	13.3	31.8	..	23 55.11	30.75	1.23	V.	3	24.057	36 12.91	12.93	11.55	23 23.1	41 27.4
81	8	..	..	..	..	49.8	8.2	..	24 31.52	30.75	1.22	V.	2	20.754	39 34.95	13.01	12.39	23 59.5	44 50.4
82	9	..	..	..	..	..	22.2	..	25 45.61	30.74	1.21	VI.	2	13.278	47 24.24	13.16	14.34	25 13.7	52 41.7
83	9	..	..	..	..	..	53.3	..	26 16.77	30.74	1.23	VI.	2	19.275	41 8.10	13.23	12.77	25 44.8	46 24.1
84	9	..	..	..	..	..	40.3	..	28 3.85	30.74	1.28	VI.	4	46.962	12 7.13	13.42	5.69	27 31.8	17 16.2
85	9	..	..	15.7	34.2	..	..	..	30 34.16	30.74	1.22	III.	2	10.208	50 35.65	13.70	15.12	30 2.2	55 54.5
86	9	..	..	..	..	19.8	..	..	31 1.43	30.74	1.25	V.	3	25.585	34 37.11	13.75	11.13	30 29.4	39 52.0
87	9	..	..	..	..	46.	4.2	..	31 27.71	30.74	1.26	V.	3	28.636	31 25.64	13.81	10.34	30 55.7	36 39.8
88	9.10	..	..	32.8	..	9.5	..	..	34 51.28	30.73	1.31	IV.	5	48.822	10 10.95	14.19	5.25	34 19.2	15 20.4
89	9	..	21.5	40.	..	16.5	..	..	34 58.32	30.73	1.31	IV.	5	49.446	9 31.97	14.20	5.11	34 26.3	14 41.3
90	9	..	..	..	..	35.4	53.5	..	35 17.14	30.73	1.32	IV.	5	50.183	8 45.65	14.24	4.90	34 45.1	13 54.8
91	8	..	..	39.2	57.3	16.2	..	..	36 57.52	30.73	1.26	IV.	2	22.474	37 46.87	14.44	11.93	36 25.5	43 3.2
92	9	..	..	..	11.5	30.	..	..	38 11.55	30.72	1.31	IV.	3	38.922	20 40.11	14.58	7.75	37 39.5	25 52.4
93	8	..	44.2	2.8	21.	39.5	..	..	40 21.05	30.72	1.26	IV.	2	16.796	43 42.78	14.83	13.39	39 49.1	49 1.0
94	8	..	2.8	21.	39.5	57.2	..	..	41 39.28	30.72	1.30	IV.	3	32.260	27 38.33	14.99	9.41	41 7.3	32 52.7
95	9.10	..	..	..	..	..	38.1	..	43 1.56	30.71	1.28	V.	2	18.142	42 18.91	15.15	13.04	42 29.6	47 37.1
96	9	..	..	..	..	..	6.3	..	43 29.80	30.71	1.29	VI.	2	22.920	37 19.27	15.21	11.81	42 57.8	42 36.3
97	9	..	..	..	..	57.2	..	..	44 38.90	30.71	1.31	V.	3	31.005	28 57.01	15.35	9.74	44 6.9	35 12.1
98	9.10	..	..	..	..	..	31.	..	9 44 54.52	−30.71	−1.30	VI.	3	25.025	−35 12.05	−15.38	−11.28	9 44 22.5	− 32 41 28.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(223) 58. Transits 1^s discordant.

(223) 70. Time of transit over T. VI assumed as $29^s.3$ instead of $39^s.3$.

ZONE 223. FEBRUARY 13. C. $D_{\circ} = -32° \, 4' \, 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	8.9	. .	. .	. .	. .	. .	32.3	. .	9 45 55.84	−30.71	−1.34	VI.	5	47.607	−11 27.59	−15.50	− 5.54	9 45 23.8	− 32 16 38.6
100	9	. .	. .	38.	55.3	. .	. .	. .	47 55.74	30.70	1.32	IV.	3	33.320	26 31.82	15.74	9.14	47 23.7	31 46.7
101	9	. .	. .	. .	. .	34.	52.3	. .	48 15.76	30.70	1.31	V.	3	28.693	31 22.07	15.78	10.32	47 43.8	36 38.2
102	8	. .	. .	. .	. .	30.9	49.	. .	49 12.53	30.70	1.30	V.	3	26.224	33 57.08	15.90	10.97	48 40.5	39 14.0
103	7	. .	. .	16.3	34.3	53.2	11.3	. .	50 34.62	30.70	1.31	IV.	3	23.094	37 13.32	16.06	11.77	50 2.6	42 31.2
104	9	. .	. .	. .	47.3	. .	24.1	. .	51 47.41	30.70	1.32	IV.	3	31.915	27 59.79	16.21	9.50	51 15.4	33 15.5
105	9	. .	. .	. .	. .	1.3	. .	. .	52 42.70	30.69	1.28	V.	2	9.094	51 46.33	16.32	15.40	52 10.7	57 8.0
106	9	. .	. .	. .	. .	. .	44.8	. .	53 8.26	30.69	1.31	VI.	2	17.692	42 47.26	16.39	13.16	52 36.3	48 6.8
107	9.10	. .	. .	. .	3.2	. .	. .	. .	55 3.06	30.68	1.35	IV.	4	40.534	18 50.11	16.63	7.33	54 31.0	24 4.1
108	9.10	. .	. .	. .	1.3	. .	. .	. .	56 1.16	30.68	1.36	IV.	4	38.564	20 53.73	16.75	6.81	55 29.1	26 7.3
109	7.8	. .	43.	1.3	19.2	38.1	56.2	. .	57 19.60	30.68	1.35	IV.	3	34.208	25 36.10	16.92	8.94	56 47.6	30 52.0
110	10	. .	. .	. .	28.	. .	4.2	. .	58 27.81	30.67	1.38	IV.	4	47.849	11 10.82	17.07	5.52	57 55.8	16 23.4
111	8	. .	. .	. .	. .	47.2	5.5	. .	9 59 28.93	30.67	1.34	V.	3	25.675	34 31.41	17.21	11.11	9 58 56.9	39 49.7
112	9.10	. .	53.	11.4	29.3	. .	. .	. .	10 1 29.54	30.67	1.36	IV.	3	34.265	25 32.59	17.44	8.92	10 0 57.5	30 49.0
113	9	. .	. .	43.	1.3	19.3	. .	. .	10 3 1.25	−30.66	−1.39	IV.	5	49.862	− 9 5.67	−17.64	− 5.00	10 2 29.2	− 32 14 18.3

ZONE 224. FEBRUARY 13. C. $D_{\circ} = -32° \, 5' \, 20'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	. .	33.3	. .	11 43 56.86	−31.14	−0.37	VI.	4	41.389	−17 56.64	− 1.96	− 4.06	11 43 25.35	− 32 23 22.7
2	9.10	. .	. .	2.8	21.1	39.3	. .	. .	46 21.02	31.13	0.24	IV.	2	16.513	44 0.71	2.18	10.54	45 49.65	49 33.4
3	9	. .	. .	. .	. .	20.2	38.2	. .	47 1.65	31.12	0.23	V.	2	14.826	45 46.71	2.24	11.00	46 30.30	51 19.9
4	9	. .	. .	4.9	23.	41.5	. .	. .	48 23.09	31.11	0.35	IV.	3	28.628	31 26.15	2.35	7.35	47 51.63	36 55.9
5	8	. .	21.8	40.5	58.5	16.5	14.6	. .	49 58.43	31.10	0.35	IV.	3	36.368	23 20.63	2.50	5.34	49 26.98	28 18.5
6	9	. .	. .	36.5	54.8	13.2	31.1	. .	11 58 54.85	31.02	0.51	IV.	5	56.951	1 40.68	3.28	0.05	11 58 23.32	7 4.0
7	9.10	. .	15.7	34.3	52.5	. .	. .	. .	12 1 52.50	31.02	0.47	IV.	4	49.393	9 34.10	3.52	1.93	12 1 21.01	14 59.5
8	9.10	. .	. .	27.6	45.3	. .	. .	. .	2 45.57	31.01	0.41	IV.	4	40.901	18 26.88	3.60	4.16	2 14.15	23 54.6
9	9	. .	. .	. .	. .	. .	11.3	. .	2 34.84	31.01	0.33	VI.	3	26.569	33 35.25	3.59	7.96	2 3.50	39 6.7
10	9	. .	. .	. .	57.2	. .	34.	. .	3 57.28	31.00	0.29	IV.	3	18.958	41 32.62	3.71	9.91	3 25.99	47 6.2
11	9	. .	. .	36.2	. .	32.9	. .	. .	4 14.56	30.99	0.34	IV.	3	31.237	28 42.51	3.72	6.70	3 43.23	34 13.0
12	9	. .	. .	. .	59.2	. .	35.5	. .	5 59.33	30.98	0.33	IV.	3	24.341	35 55.22	3.88	7.18	5 28.02	41 26.3
13	9.10	. .	. .	. .	3.5	. .	40.	. .	5 3.46	30.99	0.35	V.	3	26.949	33 11.41	3.80	7.79	4 32.12	38 43.0
14	9	. .	. .	. .	. .	21.5	39.6	. .	7 2.94	30.97	0.24	VI.	2	9.773	51 3.87	3.97	12.30	6 31.73	56 40.1
15	9	. .	. .	. .	. .	. .	. .	. .	7	30.97	0.27	VII.	2	15.406	45 10.83	4.02	10.84	. . .	41 45.7
16	10	. .	. .	. .	. .	2.2	. .	. .	8 43.97	30.96	0.42	V.	4	41.618	17 48.68	4.11	4.00	8 12.59	23 16.8
17	9	. .	4.7	23.5	. .	. .	. .	. .	11 41.64	30.94	0.42	III.	3	37.630	22 1.13	4.36	5.02	11 10.28	27 30.5
18	9	. .	. .	. .	47.2	. .	. .	. .	11 47.14	30.94	0.26	IV.	2	11.659	49 5.08	4.37	11.82	11 15.94	54 41.3
19	10	. .	. .	. .	. .	22.	. .	. .	12 3.39	30.93	0.24	V.	2	8.630	52 15.41	4.39	12.61	11 32.22	57 52.4
20	9.10	. .	. .	35.5	53.6	. .	. .	. .	14 53.65	30.91	0.40	III.	3	35.888	23 50.32	4.62	5.48	14 22.34	29 20.4
21	9	. .	. .	. .	17.2	35.5	53.5	. .	15 17.06	30.91	0.33	IV.	3	22.206	38 6.82	4.65	9.05	14 45.82	43 40.5
22	9.10	. .	13.5	32.1	50.2	. .	. .	. .	17 50.26	30.89	0.51	IV.	5	48.827	10 10.63	4.86	2.16	17 18.86	15 37.7
23	10	. .	. .	. .	31.8	. .	. .	. .	19 31.69	30.87	0.58	IV.	5	55.206	3 30.41	5.00	0.54	19 0.24	8 56.0
24	9	. .	5.	23.1	41.3	59.6	. .	. .	21 41.42	30.86	0.40	IV.	3	35.422	24 19.99	5.17	5.61	21 10.16	29 50.8
25	9	. .	33.	51.3	9.2	28.2	46.2	. .	24 9.61	30.84	0.31	IV.	2	15.758	44 47.95	5.36	10.75	23 38.46	50 24.1
26	9.10	. .	. .	. .	6.8	. .	43.2	. .	25 6.71	30.83	0.47	IV.	4	43.231	16 0.86	5.44	3.57	24 35.41	21 29.9
27	10	. .	. .	. .	. .	46.3	. .	. .	25 28.09	30.82	0.48	IV.	4	43.879	15 19.99	5.46	3.42	24 56.79	20 48.9
28	9	. .	. .	. .	. .	. .	53.	. .	26 16.56	30.82	0.46	VI.	3	38.618	20 59.26	5.53	4.77	25 45.28	26 29.6
29	10	. .	. .	11.2	. .	. .	5.5	. .	28 29.33	30.80	0.49	VI.	4	44.691	14 29.73	5.70	3.21	27 58.04	19 58.6
30	9.10	. .	. .	. .	32.2	50.2	8.3	. .	28 32.00	30.80	0.51	IV.	4	47.492	11 33.43	5.70	2.48	28 0.69	17 1.6
31	10	. .	4.5	. .	. .	59.2	. .	. .	12 32 41.08	−30.77	−0.46	V.	3	38.175	−21 27.18	− 6.01	− 4.89	12 32 9.85	− 32 26 58.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 224	Feb. 13,	11 44	. .	. .	. .	. .	. .	. .	. .	30.052	37.	30.7			
		11 50	91 24 59.1	64.8	71.3	56.1	62.1	46.3	59.95	. .	. .	. .	40.2	35.8	36.5
		12 10	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.1			
		12 20	. .	. .	. .	. .	. .	. .	. .	30.054	37.	29.1	. .	. .	. .
		12 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.6			
		13 0	. .	. .	. .	. .	. .	. .	. .	30.054	36.5	29.			
		13 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	27.9			
		13 40	58.9	65.8	71.1	56.2	63.	45.2	60.03	30.060	35.5	28.	. .	35.7	33.5

REMARKS.

(224) 11. Time of transit over T. III assumed as 56ˢ.2 instead of 36ˢ.2.

External Thermometer assumed as 29°.5, 28°.6, and 28°.

ZONE 224. FEBRUARY 13. C. $D_0 = -32° 5' 20''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
32	9.10	. .	. .	29.	. .	5.2	. .	. .	12 33 47.10	−30.76	−0.40	V.	3	28.513	−31 33.48	− 6.09	− 7.39	12 33 15.94	− 32 37 7.0
33	10	. .	. .	. .	. .	. .	3.3	. .	34 26.82	30.75	0.38	VI.	3	24.878	35 21.21	6.13	8.33	33 55.69	40 55.7
34	7.8	. .	35.2	. .	11.3	30.2	48.3	. .	39 11.71	30.71	0.45	IV.	3	35.712	24 1.61	6.47	5.53	38 40.55	29 33.6
35	9	. .	42.1	0.8	18.8	. .	. .	. .	42 18.91	30.68	0.39	IV.	3	24.652	35 35.58	6.68	8.39	41 47.84	41 10.6
36	9	. .	. .	. .	43.2	. .	19.8	. .	42 43.19	30.67	0.35	IV.	2	18.586	41 50.70	6.71	10.00	42 12.17	47 27.4
37	9.10	. .	. .	. .	45.8	. .	. .	. .	43 45.66	30.68	0.49	IV.	4	41.586	17 44.03	6.77	3.99	43 14.49	23 14.8
38	9	. .	. .	. .	. .	25.3	. .	. .	44 7.01	30.67	0.45	V.	3	33.711	26 7.16	6.80	6.04	43 35.89	31 40.0
39	9.10	. .	. .	. .	. .	51.	. .	. .	44 32.72	30.67	0.46	V.	3	35.306	24 27.27	6.82	5.62	44 1.59	29 59.7
40	9.10	. .	. .	39.2	57.5	. .	. .	. .	45 57.44	30.67	0.44	IV.	3	32.186	27 42.98	6.91	6.44	45 26.33	33 16.3
41	9.10	. .	. .	. .	. .	32.3	. .	. .	46 14.09	30.67	0.51	V.	4	43.508	15 43.85	6.93	3.50	45 42.91	21 14.3
42	9.10	. .	. .	44.6	3.	21.5	. .	. .	48 2.98	30.63	0.34	IV.	2	14.146	46 29.18	7.05	11.16	47 32.01	52 7.4
43	9	. .	12.5	30.8	48.5	7.3	. .	. .	49 48.96	30.62	0.53	IV.	5	44.225	14 59.66	7.17	3.33	49 17.81	20 30.2
44	10	. .	. .	. .	21.2	. .	. .	. .	50 21.05	30.61	0.46	IV.	3	31.872	28 2.49	7.20	6.51	49 49.98	33 36.2
45	9	. .	. .	. .	11.4	30.2	. .	. .	51 11.57	30.61	0.45	IV.	3	30.830	29 7.87	7.25	6.79	50 40.51	34 41.9
46	7.8	. .	14.8	33.	51.5	. .	. .	. .	52 51.45	30.59	0.42	IV.	3	24.352	35 54.53	7.34	8.48	52 20.44	41 30.3
47	8.9	. .	. .	4.5	. .	41.5	59.5	. .	53 23.01	30.59	0.42	III.	3	25.710	34 28.95	7.37	8.12	52 52.00	40 4.4
48	8	. .	. .	. .	. .	39.	57.5	. .	53 20.74	30.59	0.37	V.	2	17.361	43 7.96	7.37	10.34	52 49.78	48 45.7
49	9	. .	. .	42.3	. .	. .	. .	. .	56 0.73	30.56	0.57	III.	5	48.545	10 28.09	7.53	2.20	55 29.60	15 57.8
50	9	. .	. .	. .	. .	25.7	43.2	. .	57 7.12	30.55	0.55	V.	4	44.888	14 17.05	7.60	3.16	56 36.02	19 47.8
51	10	. .	15.8	34.	. .	. .	. .	. .	12 59 52.45	30.53	0.54	III.	4	43.957	15 14.54	7.75	3.39	12 59 21.38	20 45.7
52	8	. .	37.3	55.5	14.	32.3	. .	. .	13 1 13.94	30.52	0.43	IV.	3	23.956	36 19.10	7.82	8.59	13 0 42.99	41 55.5
53	10	. .	. .	5.2	. .	. .	. .	. .	5 23.62	30.48	0.38	III.	2	17.096	43 23.58	8.02	10.41	4 52.76	49 2.0
54	9	. .	. .	56.2	. .	33.	. .	. .	6 14.61	30.47	0.46	IV.	3	30.156	29 50.44	8.06	6.96	5 43.68	35 25.5
55	9	. .	58.3	17.	34.7	. .	. .	. .	8 35.00	30.45	0.44	IV.	3	25.846	34 20.55	8.19	8.08	8 4.11	39 56.8
56	9	. .	. .	6.5	24.8	. .	. .	. .	9 24.73	30.44	0.47	IV.	3	29.626	30 23.53	8.22	7.12	8 53.82	35 58.9
57	9	. .	. .	. .	5.	. .	41.5	. .	10 4.96	30.44	0.46	IV.	3	28.001	32 5.42	8.25	7.52	9 34.06	37 41.2
58	9	. .	. .	. .	. .	. .	23.5	. .	10 47.05	30.43	0.57	V.	5	46.820	12 16.79	8.29	2.68	10 16.05	17 47.8
59	9	. .	. .	18.4	36.9	55.3	. .	. .	12 36.81	30.42	0.39	V.	2	14.205	46 25.85	8.36	11.16	12 6.00	52 5.4
60	9.10	. .	50.2	. .	26.8	. .	. .	. .	14 26.90	30.40	0.39	IV.	2	14.673	45 56.06	8.43	11.04	13 56.11	51 35.5
61	9.10	. .	. .	. .	. .	7.2	25.3	. .	14 48.68	30.40	0.37	V.	2	12.884	47 48.51	8.44	11.53	14 17.91	53 28.5
62	8	. .	. .	. .	. .	. .	. .	. .	15	30.39	0.54	VII.	4	40.715	18 39.32	8.48	4.23	15	24 12.0
63	9	. .	. .	. .	. .	12.2	30.6	. .	16 53.98	30.37	0.45	V.	3	25.964	34 13.20	8.54	8.07	16 23.16	39 49.8
64	9	. .	. .	. .	. .	4.2	22.5	. .	17 46.01	30.36	0.54	V.	5	40.305	19 5.91	8.57	4.35	17 15.11	24 38.8
65	9	. .	. .	50.	8.2	. .	. .	. .	20 8.20	30.34	0.53	IV.	3	35.563	24 11.08	8.66	5.55	19 37.33	29 45.3
66	9	. .	. .	. .	. .	35.3	. .	. .	20 16.73	30.34	0.38	V.	2	11.094	49 40.90	8.67	12.00	19 46.01	55 21.6
67	9	. .	. .	. .	. .	. .	14.6	. .	20 38.11	30.34	0.47	VI.	3	23.841	36 26.20	8.68	8.62	20 7.30	42 3.5
68	9	. .	. .	. .	. .	45.3	3.	. .	22 26.79	30.32	0.51	IV.	3	32.317	27 34.82	8.73	6.40	21 55.96	33 10.0
69	9	. .	. .	. .	15.8	34.3	. .	. .	24 15.84	30.30	0.55	IV.	3	36.788	22 54.03	8.80	5.23	23 44.99	28 28.1
70	8	. .	7.	25.2	43.3	2.1	20.2	. .	26 43.60	30.28	0.53	IV.	3	33.112	26 44.81	8.87	6.19	26 12.79	32 19.9
71	9	. .	. .	48.3	6.5	. .	43.4	. .	28 6.67	30.27	0.47	IV.	3	23.361	36 56.69	8.91	8.76	27 35.93	42 34.4
72	8	. .	11.9	30.1	48.1	6.4	. .	. .	30 48.32	30.24	0.61	IV.	4	44.032	15 10.46	9.00	3.37	30 17.47	20 42.8
73	10	. .	. .	5.5	. .	. .	. .	. .	33 23.95	30.22	0.43	III.	2	12.794	47 53.28	9.05	11.56	32 53.30	53 33.9
74	8.9	. .	. .	. .	41.2	. .	. .	. .	33 41.12	30.22	0.42	IV.	2	16.018	44 31.64	9.05	10.70	33 10.48	50 11.4
75	9	. .	. .	. .	. .	. .	28.2	. .	33 51.77	30.21	0.54	VI.	3	34.380	25 25.25	9.06	5.85	33 21.02	31 0.2
76	9.10	. .	. .	. .	41.2	. .	. .	. .	35 41.06	30.20	0.57	IV.	3	40.588	18 55.75	9.09	4.25	35 10.29	24 29.1
77	9.10	. .	. .	. .	. .	29.8	. .	. .	36 11.55	30.19	0.56	V.	3	38.646	20 57.57	9.11	4.75	35 40.80	26 31.4
78	9	. .	. .	. .	. .	29.	. .	. .	37 10.71	30.18	0.54	V.	3	34.340	25 27.89	9.13	5.87	36 39.99	31 2.9
79	6	. .	. .	. .	. .	59.1	. .	. .	37 40.92	30.17	0.62	V.	4	47.658	11 23.32	9.14	2.40	37 10.13	16 54.9
80	10	. .	. .	. .	41.8	. .	. .	. .	39 41.68	30.15	0.50	IV.	3	25.619	34 34.92	9.18	8.17	39 11.03	40 12.3
81	9.10	. .	. .	32.6	. .	. .	. .	. .	13 40 50.93	−30.14	−0.53	III.	3	29.219	−30 48.94	− 9.21	− 7.20	13 40 20.26	− 32 36 25.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point,	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(224) 72. Time of transit over T. IV assumed as $48^s.1$ instead of $45^s.1$.

INSTRUMENT READINGS.

	Date.			CIRCLE.							Barom.	THERMOM.				
				A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1849.	h.	m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 225. FEBRUARY 15. C. $D_0 = -30° 49' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	27.	44.5	2.6	. .	. .	5 22 44.70	−30.19	−0.94	IV.	4	40.237	−19 8.74	−2.18	−3.60	5 22 13.6	−31 8 44.5
2	9	. .	. .	. .	26.7	44.3	. .	. .	23 26.42	30.20	0.94	IV.	4	36.581	22 58.10	2.25	4.45	22 55.3	12 34.8
3	9	. .	. .	. .	. .	31.6	49.6	. .	24 13.63	30.21	0.94	IV.	5	44.178	15 2.55	2.33	2.70	23 42.5	31 4 37.6
4	9.10	. .	48.7	6.8	. .	. .	. .	. .	26 24.94	30.23	0.95	III.	5	49.200	9 46.98	2.56	1.53	25 53.7	30 59 21.1
5	10	. .	. .	. .	50.4	9.	. .	. .	29 50.57	30.25	0.95	IV.	3	23.498	36 48.03	2.90	7.54	29 19.4	31 26 28.5
6	10	. .	. .	. .	. .	. .	. .	. .	30	30.25	0.95	VII.	2	18.915	41 31.55	3.00	8.63	30	31 13.2
7	9	. .	. .	3.3	21.8	39.3	. .	. .	32 21.47	30.27	0.95	IV.	3	39.928	19 36.98	3.17	3.65	31 50.2	9 13.8
8	10	. .	. .	. .	. .	. .	53.5	. .	32 17.54	30.27	0.95	V.	3	37.476	22 11.10	3.16	4.24	31 46.3	11 48.5
9	9	. .	22.2	. .	58.	16.2	. .	. .	34 58.15	30.29	0.95	IV.	3	29.968	30 2.00	3.43	6.01	34 26.9	19 41.4
10	9.10	. .	. .	. .	. .	59.3	. .	. .	35 41.11	30.30	0.96	V.	3	21.245	39 9.41	3.50	8.07	35 9.9	28 51.0
11	9	. .	. .	. .	. .	. .	20.3	. .	35 44.31	30.30	0.96	VI.	3	24.985	35 14.49	3.50	7.18	35 13.1	24 55.2
12	8	. .	. .	49.	. .	25.5	. .	. .	40 7.18	30.33	0.96	IV.	2	6.689	54 16.68	3.96	11.56	39 35.9	44 2.2
13	9	. .	. .	. .	. .	52.2	10.2	. .	40 34.03	30.33	0.96	V.	2	15.608	44 57.79	4.01	9.43	40 2.7	34 41.2
14	9.10	. .	. .	11.3	29.2	. .	. .	. .	42 29.23	30.34	0.96	IV.	2	28.468	31 30.85	4.21	6.37	41 57.9	31 21 11.4
15	9.10	. .	. .	. .	. .	. .	29.2	. .	42 53.23	30.34	0.96	VI.	5	50.188	8 45.65	4.25	1.29	42 21.9	30 58 21.2
16	9.10	. .	. .	. .	. .	. .	45.5	. .	44 9.54	30.35	0.96	VI.	4	40.523	18 51.43	4.39	3.54	43 38.2	31 8 29.4
17	10	. .	47.2	6.2	. .	. .	. .	. .	46 23.95	30.37	0.97	III.	2	17.599	42 52.04	4.62	8.96	45 52.6	32 35.6
18	10	. .	. .	. .	55.2	. .	. .	. .	46 55.11	30.38	0.97	IV.	2	17.968	42 29.33	4.67	9.87	46 23.8	32 13.9
19	9	. .	. .	57.3	. .	33.4	. .	. .	49 15.42	30.40	0.97	IV.	3	39.162	20 25.25	4.92	3.86	48 44.1	10 4.0
20	7.8	. .	16.3	34.3	52.3	. .	28.3	. .	50 52.39	30.40	0.97	IV.	2	16.801	43 42.47	5.09	9.15	50 21.0	33 26.7
21	7	. .	. .	. .	13.3	32.0	49.5	. .	51 13.52	30.41	0.97	IV.	3	25.528	34 40.69	5.13	7.06	50 42.1	24 22.9
22	9	. .	. .	. .	. .	. .	34.5	. .	52 58.55	30.41	0.97	VI.	3	32.976	26 53.15	5.32	5.28	52 27.2	16 33.8
23	9.10	. .	. .	. .	. .	. .	51.3	. .	53 15.33	30.42	0.97	VI.	4	46.573	12 31.74	5.35	2.10	52 43.9	2 9.2
24	8.9	. .	. .	58.3	16.	33.8	52.	. .	55 16.06	30.43	0.98	IV.	4	45.378	13 46.11	5.57	2.42	54 44.6	3 24.1
25	9	. .	. .	. .	. .	22.5	40.3	. .	56 4.14	30.44	0.98	V.	2	6.718	54 15.25	5.66	11.59	55 32.7	44 2.5
26	10	. .	. .	20.	38.	55.3	. .	. .	58 37.81	30.46	0.98	IV.	5	47.778	11 14.21	5.92	1.84	58 6.4	0 52.0
27	10	. .	. .	. .	29.2	46.2	. .	. .	5 59 28.65	30.47	0.98	IV.	4	42.714	16 33.17	6.03	3.02	5 58 57.2	6 12.2
28	10	. .	. .	. .	34.1	52.3	. .	. .	6 0 34.09	30.47	0.98	IV.	3	26.988	33 8.96	6.14	6.70	6 0 2.6	22 51.8
29	7.8	. .	. .	20.3	38.3	56.3	. .	. .	1 38.26	30.48	0.98	IV.	3	25.746	34 26.88	6.25	7.00	1 6.8	24 10.1
30	10	. .	. .	. .	. .	. .	22.	. .	1 45.97	30.48	0.98	VI.	2	20.046	40 19.62	6.27	8.38	1 14.5	30 4.3
31	9.10	. .	. .	. .	. .	. .	25.8	. .	2 49.85	30.49	0.98	VI.	3	29.126	30 54.84	6.39	6.21	2 18.4	31 20 37.4
32	9	. .	. .	. .	. .	38.8	57.	. .	4 20.95	30.49	0.98	V.	5	48.682	10 19.99	6.58	1.63	3 49.5	30 59 58.2
33	9	. .	. .	. .	. .	. .	33.3	. .	4 57.32	30.50	0.98	VI.	5	55.349	3 21.74	6.64	0.09	4 25.8	30 52 58.5
34	10	. .	. .	. .	44.5	. .	. .	. .	6 44.40	30.51	0.99	IV.	2	20.832	39 29.62	6.85	8.18	6 12.9	31 29 14.6
35	10	. .	. .	. .	. .	58.?	. .	. .	8 40.08	30.53	0.99	V.	5	50.503	8 25.82	7.07	1.21	8 8.6	30 58 4.1
36	9.10	. .	. .	21.5	39.5	. .	16.2	. .	11 39.74	30.54	0.99	IV.	2	13.611	47 2.73	7.42	9.93	11 8.2	31 36 50.1
37	9	. .	. .	. .	43.5	1.3	18.8	. .	11 43.08	30.54	0.99	IV.	2	18.969	41 26.54	7.43	8.63	11 11.5	31 31 12.6
38	8.9	. .	. .	. .	. .	0.3	18.4	. .	12 42.41	30.55	0.99	V.	5	51.246	7 39.18	7.54	1.03	12 10.9	30 57 17.7
39	9	. .	. .	46.3	. .	22.5	. .	. .	15 4.34	30.57	1.00	IV.	2	10.565	50 16.58	7.83	10.66	14 32.8	31 40 5.1
40	10	. .	. .	7.2	25.2	. .	. .	. .	17 25.18	30.58	1.00	IV.	3	33.962	25 51.41	8.11	5.08	16 53.6	15 34.6
41	8	. .	. .	. .	9.2	27.5	45.3	. .	18 9.15	30.59	1.00	IV.	2	7.782	53 7.96	8.20	11.33	17 37.6	42 57.5
42	9	. .	. .	59.3	16.8	. .	. .	. .	20 17.07	30.60	1.00	IV.	5	44.702	14 29.60	8.45	2.56	19 45.5	4 10.6
43	8	. .	. .	. .	. .	. .	6.3	. .	6 20 30.32	30.60	1.00	VI.	3	26.085	34 5.62	8.48	6.92	6 19 58.7	23 51.0
44	10	. .	. .	. .	41.3	. .	. .	. .	7 12 41.18	30.87	1.05	IV.	3	24.686	35 33.38	15.41	7.27	7 12 9.3	31 25 26.1
45	9	. .	. .	. .	. .	47.5	5.2	. .	13 29.41	30.87	1.05	V.	5	51.385	7 30.52	15.52	0.98	12 57.5	30 57 17.0
46	9.10	. .	. .	. .	11.8	29.8	47.5	. .	15 11.63	30.88	1.06	IV.	3	27.268	32 51.58	15.75	6.66	14 39.7	31 22 44.0
47	9	. .	47.5	5.7	. .	. .	. .	. .	17 23.80	30.89	1.06	III.	4	51.062	7 47.66	16.06	1.06	16 51.8	30 57 34.8
48	7	. .	. .	. .	48.3	6.6	24.8	. .	17 48.47	30.89	1.06	IV.	2	12.348	−48 21.99	−16.11	−10.25	17 16.5	−31 38 18.3
49	9	. .	. .	. .	51.5	8.3	. .	. .	7 19 51.	−30.90	−1.06	IV.	2	.238	. . .	. .	. .	7 19 19.	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

Barometer reading rejected.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 225	Feb. 15,	5 20	. .	. .	. .	. .	. .	. .	. .	29.992	27.5	18.5	36.7	23.5	28.
		5 30	90 9 61.7	66.1	71.8	59.6	61.2	48.2	61.43						
		5 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	18.			
		6 0	. .	. .	. .	. .	. .	. .	. .	29.996	26.5	17.7			
		6 20	59.8	67.1	71.9	59.2	62.1	46.8	61.15	29.982	25.2	17.5	. .	22.	23.2
		7 10	. .	. .	. .	. .	. .	. .	. .	30.008	23.	15.5			
		7 20	58.7	67.9	71.9	59.8	62.2	46.8	61.22	. .	. .	. .	. .	20.3	22.
		7 40	. .	. .	. .	. .	. .	. .	. .	30.008	22.8	14.9			
		8 32	. .	. .	. .	. .	. .	. .	. .	30.006	22.	13.6			

ZONE 225. FEBRUARY 15. C. $D_{\circ}=-30^{\circ}\ 49'\ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	28.2	. .	. .	. .	7 20 28.10	−30.90	−1.06	IV.	3	20.764	−36 31.12	−16.48	− 7.72	7 19 56.1	− 31 26 25.3
51	8	. .	. .	. .	. .	. .	6.3	. .	19 30.26	30.90	1.06	VI.	2	19.262	41 8.92	16.35	8.57	18 58.3	31 3.8
52	8	. .	. .	. .	. .	. .	32.3	. .	20 56.35	30.90	1.06	VI.	3	29.103	30 56.28	16.56	6.21	20 24.4	20 49.0
53	10	. .	. .	. .	. .	28.8	. .	. .	22 10.72	30.91	1.06	V.	3	28.762	31 17.67	16.72	6.30	21 38.7	21 10.7
54	8.9	. .	0.8	. .	37.3	55.3	13.8	. .	23 37.29	30.91	1.06	IV.	2	17.822	42 38.42	16.91	8.93	23 5.3	32 34.3
55	9.10	. .	. .	. .	38.2	56.3	14.3	. .	23 38.14	30.91	1.06	IV.	2	17.906	42 33.15	16.91	8.92	23 6.2	32 29.0
56	9	. .	4.8	. .	40.3	. .	16.5	. .	27 40.58	30.93	1.07	IV.	4	40.754	18 36.11	17.47	3.46	27 8.6	8 27.0
57	9.10	. .	. .	35.8	. .	. .	29.6	. .	28 53.78	30.94	1.07	IV.	4	38.317	21 9.23	17.63	4.04	28 21.8	31 11 0.9
58	9	. .	. .	58.	15.8	. .	. .	. .	31 15.94	30.95	1.07	IV.	5	49.488	9 29.34	17.97	1.40	30 44.0	30 59 18.7
59	10	. .	. .	. .	. .	53.2	. .	. .	31 35.27	30.95	1.07	V.	5	48.768	10 14.59	18.01	1.64	31 3.3	31 0 4.2
60	9	. .	. .	35.2	53.1	11.2	. .	. .	32 53.18	30.95	1.07	IV.	4	42.191	17 6.12	18.19	3.13	32 21.2	6 54.4
61	9.10	. .	. .	. .	. .	27.2	. .	. .	33 9.20	30.95	1.07	V.	4	38.631	20 49.84	18.23	3.96	32 37.2	31 10 42.0
62	9	. .	. .	. .	. .	18.7	36.5	. .	34 0.65	30.96	1.07	V.	5	51.068	7 50.61	18.36	1.05	33 28.6	30 57 40.0
63	9	. .	. .	12.2	. .	. .	. .	. .	35 30.34	30.96	1.08	III.	3	39.042	20 32.46	18.55	3.86	34 58.3	31 10 24.9
64	8	. .	. .	. .	. .	53.2	11.3	. .	35 35.25	30.96	1.08	V.	3	30.952	29 0.27	18.56	5.78	35 3.2	18 54.6
65	9	. .	. .	. .	. .	48.5	. .	. .	36 30.44	30.96	1.08	IV.	3	29.672	30 11.55	18.69	6.08	35 58.4	20 6.3
66	9.10	. .	. .	. .	. .	24.3	. .	. .	37 6.20	30.97	1.08	VI.	3	26.688	33 27.73	18.78	6.78	36 34.2	31 23 23.3
67	9	. .	. .	27.2	45.5	. .	. .	. .	38 45.39	30.97	1.08	IV.	5	50.238	8 42.26	19.00	1.23	38 13.3	30 58 32.5
68	9	. .	. .	. .	. .	. .	27.4	. .	38 51.46	30.97	1.08	VI.	3	30.456	29 31.45	19.02	5.90	38 19.4	31 19 26.4
69	8.9	. .	46.7	4.8	22.7	41.	58.9	. .	7 43 22.92	30.99	1.08	IV.	3	34.912	24 51.73	19.65	4.84	7 42 50.9	14 46.2
70	9	. .	9.5	27.3	45.6	3.7	. .	. .	8 34 45.59	31.08	1.13	IV.	2	12.605	48 5.82	26.78	10.21	8 34 13.4	38 12.8
71	9.10	. .	. .	. .	16.3	. .	52.7	. .	35 16.45	31.08	1.14	IV.	3	33.012	26 51.02	26.86	5.28	34 44.2	16 53.2
72	9.10	. .	. .	. .	34.	52.	. .	. .	36 33.90	31.08	1.14	IV.	3	37.018	22 39.66	27.04	4.35	36 1.7	12 41.1
73	9.10	. .	. .	. .	28.2	46.3	. .	. .	37 28.21	31.08	1.14	IV.	4	45.649	13 28.98	27.17	2.31	36 56.0	3 28.5
74	9	. .	. .	36.3	54.2	12.3	. .	. .	38 54.22	31.08	1.14	IV.	2	21.518	38 46.78	27.36	8.04	38 22.0	28 52.2
75	9.10	. .	. .	. .	35.5	. .	10.8	. .	39 35.10	31.08	1.14	IV.	4	45.731	13 23.83	27.47	2.29	39 2.9	31 3 23.6
76	9.10	. .	. .	21.5	39.2	. .	. .	. .	40 39.41	31.08	1.14	IV.	5	53.201	5 36.27	27.60	0.54	40 7.2	30 55 34.4
77	10	. .	54.2	. .	30.8	. .	. .	. .	43 30.72	31.09	1.15	IV.	2	7.626	53 18.00	27.98	11.41	42 58.5	31 43 27.4
78	10	. .	. .	18.9	36.4	54.3	. .	. .	47 36.48	31.09	1.15	IV.	3	26.261	33 54.76	28.54	6.89	47 4.2	24 0.2
79	8.9	. .	. .	15.2	. .	51.5	. .	. .	48 33.31	31.09	1.15	IV.	2	15.354	45 13.47	28.68	9.60	48 1.1	35 21.7
80	9.10	. .	. .	47.3	5.2	. .	. .	. .	50 5.30	31.09	1.15	IV.	2	14.228	46 24.03	28.89	9.80	49 33.1	36 32.7
81	9	. .	36.3	54.3	12.2	. .	. .	. .	52 12.34	31.09	1.15	IV.	4	43.647	15 34.62	29.18	2.76	51 40.1	5 36.6
82	9	. .	. .	. .	42.	59.7	. .	. .	52 41.68	31.09	1.15	IV.	2	16.908	43 35.75	29.23	9.17	52 9.4	33 44.2
83	9	. .	. .	. .	. .	. .	43.5	. .	53 7.53	31.09	1.15	VI.	3	27.078	33 3.32	29.30	6.70	52 35.3	23 9.3
84	9.10	. .	. .	53.5	10.8	29.3	. .	. .	57 11.16	31.09	1.16	IV.	3	31.459	28 28.65	29.84	5.66	56 38.9	18 34.2
85	9.10	. .	42.3	0.5	18.5	. .	. .	. .	8 58 18.49	31.09	1.16	IV.	3	30.923	29 2.02	30.00	5.78	8 57 46.2	31 19 7.8
86	9.10	. .	57.3	15.5	33.5	. .	. .	. .	9 0 33.52	31.09	1.16	IV.	5	49.354	9 37.80	30.30	1.50	9 0 1.3	30 59 39.6
87	9	. .	. .	16.6	34.3	52.7	. .	. .	1 34,50	31.09	1.16	IV.	3	31.228	28 43.08	30.43	5.71	1 2.3	31 18 49.2
88	9	. .	. .	. .	. .	26.	43.6	. .	9 2 7.73	−31.09	−1.16	IV.	3	24.288	−36 2.30	−30.52	− 7.36	9 1 35.5	− 31 26 10.2

ZONE 226. FEBRUARY 16. S. $D_{\circ}=-25^{\circ}\ 13'\ 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination 1850.0.
1	9	. .	45.	2.	19.	. .	. .	. .	4 58 19.25	−29.52	−1.39	IV.	.	8.465	−52 25.52	− 0.07	− 9.86	4 57 48.34	− 26 6 25.4
2	9	. .	. .	22.	. .	. .	. .	. .	4 59 39.15	29.52	1.30	.	3	30.960	28 59.58	0.19	5.83	4 59 8.33	25 42 55.6
3	9	. .	. .	. .	. .	. .	9.	. .	5 0 34.89	29.53	1.24	.	4	42.460	16 49.99	0.27	3.79	5 0 4.12	30 44.0
4	9	. .	. .	. .	. .	. .	23.	. .	1 48.86	29.54	1.33	.	3	23.202	37 6.60	0.37	7.20	1 17.99	51 4.2
5	9	. .	. .	. .	13.5	. .	. .	. .	3 13.36	29.55	1.31	.	3	31.978	27 55.90	0.50	5.64	2 42.50	41 52.0
6	8	. .	. .	. .	. .	7.5	. .	. .	5 3 50.43	−29.56	−1.27	.	3	38.848	−20 44.82	− 0.55	− 4.42	5 3 19.60	− 25 34 39.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 225	Feb. 15,	8 45	. .	. .	. .	. .	. .	. .	. .	. .	. .	13.1			
		9 0	90 9 58.1	68.5	72.5	60.1	62.2	45.5	61.15	30.004	22.	13.5	34.2	18.5	21.
Zone 226	Feb. 16,	4 50	84 34 60.	65.9	74.3	57.2	65.2	46.	61.43						
		6	60.	66.5	74.2	57.2	65.2	45.5	61.43						

REMARKS.

(225) 50. Micrometer reading assumed as $23^{r}.764$, not $20^{r}.764$, to agree with February 23 and Mer. Circle, January 23, 1849.

ZONE 226. FEBRUARY 16. S. $D_0 = -25° 13' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
7	9	. .	. .	35.	. .	. .	. .	. .	5 6 52.20	−29.58	−1.29	.	3	40.000	−19 32.34	− 0.80	− 4.21	5 6 21.35	− 25 33 27.4
8	10	. .	. .	43.	. .	. .	. .	. .	7 0.21	29.58	1.30	.	4	41.848	17 26.90	0.82	3.90	6 29.33	31 21.6
9	7	. .	25.	42.	59.	. .	. .	. .	10 59.15	29.61	1.34	IV.	4	43.116	16 8.01	1.15	3.67	10 28.20	30 2.8
10	8	. .	6.	. .	. .	. .	. .	. .	12 40.35	29.62	1.26	.	4	60.365	. . .	1.31	. .	12 9.47	
11	6	. .	. .	. .	39.	56.	. .	. .	12 38.94	29.62	1.32	IV.	4	48.114	10 54.32	1.30	2.82	12 8.00	24 48.4
12	8	. .	. .	49.	6.	. .	. .	. .	14 6.07	29.63	1.34	IV.	.	48.212	10 48.23	1.43	2.81	13 35.10	24 42.5
13	7	. .	25.5	41.	58.	. .	. .	. .	16 58.63	29.65	1.45	.	3	30.119	29 52.60	1.69	5.98	16 27.53	43 50.3
14	9	. .	. .	. .	. .	. .	6.	. .	18 31.83	29.66	1.52	.	2	18.880	41 32.74	1.82	7.98	18 0.65	55 32.5
15	7	. .	36.2	53.2	. .	27.2	. .	. .	22 10.33	29.69	1.51	V.	3	28.160	31 55.57	2.16	6.32	21 39.13	45 54.0
16	8	. .	7.	. .	41.2	. .	. .	. .	23 41.22	29.70	1.42	IV.	5	48.220	10 48.92	2.30	2.80	23 10.10	24 44.0
17	10	. .	28.	45.	. .	. .	. .	. .	26 2.30	29.71	1.56	III.	3	24.142	36 7.45	2.51	7.03	25 31.03	50 7.0
18	6	. .	52.	9.	26.	. .	. .	. .	27 26.16	29.72	1.47	.	4	44.560	14 37.44	2.64	3.43	26 54.97	28 33.5
19	9	. .	. .	. .	15.5	. .	. .	. .	28 15.39	29.73	1.46	.	4	47.963	11 3.68	2.72	2.85	27 44.20	24 59.3
20	9	. .	. .	. .	. .	. .	31.5	. .	28 57.41	29.73	1.53	.	3	34.690	25 5.74	2.78	5.16	28 26.15	39 3.7
21	7	. .	. .	. .	. .	31.	. .	. .	30 13.80	29.74	1.58	.	3	23.922	36 21.30	2.89	7.07	29 42.48	50 21.3
22	7	. .	. .	. .	. .	21.5	36.5	. .	31 2.28	29.75	1.61	.	2	18.806	41 37.14	2.97	7.99	30 30.92	55 38.1
23	7	. .	8.2	. .	. .	. .	. .	. .	33 42.56	29.77	1.53	.	3	37.842	21 47.39	3.23	4.60	33 11.26	35 45.2
24	7	. .	. .	. .	49.	. .	. .	. .	33 48.87	29.77	1.55	.	3	36.482	23 13.41	3.24	4.84	33 17.55	37 11.5
25	7	. .	. .	. .	. .	. .	44.	. .	34 9.92	29.77	1.56	.	3	31.488	28 26.76	3.26	5.73	33 38.59	42 25.7
26	6	. .	. .	. .	. .	45.	. .	. .	35 27.92	29.78	1.55	VI.	3	38.329	21 17.58	3.40	4.51	34 56.59	35 15.5
27	7	. .	21.	38.	55.	. .	. .	. .	37 55.13	29.80	1.60	VII.	3	32.372	27 31.18	3.63	5.57	37 23.73	41 30.4
28	9	. .	. .	. .	37.5	. .	. .	. .	40 37.42	29.82	1.76	IX.	2	18.182	42 16.04	3.89	8.10	40 5.09	56 18.0
29	8	. .	. .	. .	. .	42.8	0.	. .	41 25.77	29.82	1.66	.	3	28.199	31 53.19	3.97	6.31	40 54.30	45 53.5
30	9	. .	. .	37.	. .	. .	. .	. .	43 54.18	29.84	1.65	.	3	23.173	37 8.24	4.21	7.21	43 22.69	51 9.6
31	8	. .	. .	. .	. .	58.	. .	. .	44 40.80	29.84	1.65	.	3	24.496	35 45.49	4.29	6.98	44 9.31	49 46.8
32	8	. .	. .	. .	. .	32.3	. .	. .	45 35.17	29.85	1.67	.	3	29.752	30 15.56	4.35	6.04	45 3.65	44 16.0
33	6.5	. .	. .	. .	. .	50.5	8.	. .	46 33.50	29.86	1.77	V.	2	15.552	45 1.37	4.48	8.57	46 1.87	59 4.4
34	7	. .	11.	28.	. .	. .	. .	. .	48 45.28	29.87	1.63	III.	4	39.868	19 31.15	4.69	4.25	48 13.78	33 30.1
35	.	. .	. .	. .	15.5	33.	. .	. .	49 15.67	29.87	1.62	IV.	5	44.790	14 24.01	4.73	3.37	48 44.18	28 22.1
36	9	. .	43.5	. .	17.	. .	. .	. .	53 17.37	29.90	1.62	IV.	5	49.505	9 28.27	5.15	2.56	52 45.85	23 26.0
37	9	. .	5.5	. .	. .	. .	. .	. .	54 39.85	29.91	1.63	.	4	49.939	8 58.46	5.29	2.49	54 8.31	22 56.2
38	8	. .	. .	. .	14.5	. .	. .	. .	55 14.38	29.91	1.70	.	3	40.712	18 47.85	5.34	4.11	54 42.77	32 47.3
39	4	. .	. .	. .	. .	56.	13.	. .	55 38.93	29.91	1.67	V.	4	47.638	11 24.57	5.38	2.87	55 7.35	25 23.8
40	9	. .	35.	. .	. .	. .	. .	. .	5 58 9.36	−29.93	−1.75	.	3	38.175	−21 26.68	− 5.65	− 4.54	5 57 37.68	− 25 35 26.9

ZONE 227. FEBRUARY 16. S. $D_0 = -30° 49' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	25.	. .	1.	. .	. .	6 12 43.14	−30.22	− 1.73	III.	5	51.289	− 7 35.91	− 2.80	− 5.03	6 12 11.19	− 30 57 13.7
2	7	. .	. .	46.5	. .	23.	. .	. .	15 4.69	30.24	1.38	V.	2	10.576	50 13.45	3.07	14.65	14 33.07	31 40 1.2
3	9	. .	49.	. .	. .	. .	. .	. .	17 25.24	30.26	1.60	.	3	33.942	25 52.10	3.34	9.07	16 53.38	15 34.5
4	6	. .	. .	9.	28.	. .	. .	. .	18 27.59	30.26	1.37	.	2	7.780	53 8.21	3.45	15.34	17 55.96	42 57.0
5	7	. .	. .	51.	. .	. .	. .	. .	20 9.14	30.28	1.49	.	3	21.382	39 0.65	3.65	12.05	19 37.37	28 46.4
6	6	. .	. .	. .	. .	50.	7.	. .	20 31.45	30.28	1.54	.	3	26.089	33 59.16	3.69	10.94	19 59.63	23 43.8
7	7	. .	16.	34.	52.	. .	. .	. .	24 52.08	30.30	1.72	.	4	44.329	14 52.00	4.19	6.64	24 20.06	4 32.8
8	7	. .	13.	31.	49.	. .	. .	. .	29 49.07	30.34	1.69	IV.	3	38.786	20 48.64	4.77	7.96	29 17.04	10 31.4
9	8	. .	. .	. .	. .	. .	56.	. .	30 19.98	30.34	1.54	.	2	21.700	38 35.86	4.83	11.97	29 48.10	28 22.7
10	9	. .	. .	33.	. .	. .	. .	. .	33 51.10	30.36	1.66	.	3	33.208	26 38.91	5.25	9.23	33 19.08	16 23.4
11	9	. .	47.	. .	. .	. .	. .	. .	6 36 23.31	−30.37	− 1.57	.	2	22.330	−37 54.65	− 5.56	−11.82	6 35 51.37	− 31 27 42.0

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(226) 22. Time of transit over T. V assumed as 19s.5 instead of 21s.5.

(226) 32. Transit over T. V assumed as 52s.3, not 32s.3.

(226) 33. Time of transit over T. VI assumed to have been at 8s.0 instead of 0s.8

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 227	Feb. 16,	6 10	90 9 60.	66.6	71.6	56.9	64.3	44.3	60.62						
		6 20	. .	. .	. .	. .	. .	. .	. .	29.928	23.9	17.5			
		6 40	. .	. .	. .	. .	. .	. .	. .	. . .	. .	17.5			
		7 0	. .	. .	. .	. .	. .	. .	. .	. . .	. .	17.3			
		7 20	. .	. .	. .	. .	. .	. .	. .	29.936	23.	16.			
		7 25	60.	66.6	72.	56.9	64.3	44.3	60.68						

ZONE 227. FEBRUARY 16. S. $D_0 = -30° 49' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s	° ′ ″
12	7	. .	. .	54.	. .	. .	. .	. .	6 37 12.15	−30.38	−1.54	.	2	18.829	−41 34.75	− 5.65	−12.66	6 36 40.23	−31 31 23.1
13	9	. .	. .	. .	. .	57.	15.	. .	37 38.91	30.38	1.57	.	2	22.362	37 54.27	5.71	11.82	37 6.96	27 41.8
14	7	. .	23.5	. .	. .	. .	. .	. .	40 59.83	30.40	1.57	.	2	20.102	40 14.28	6.11	12.36	40 27.86	30 2.8
15	5	. .	. .	. .	18.	37.	54.	. .	40 18.18	30.40	1.51	.	2	12.993	47 41.36	6.02	14.07	39 46.27	37 32.4
16	7	. .	53.	. .	29.	. .	. .	. .	43 29.05	30.41	1.74	IV.	3	37.840	21 48.02	6.42	8.17	42 56.90	11 32.6
17	8	. .	. .	. .	31.	. .	. .	. .	44 30.87	30.42	1.79	.	4	43.550	15 40.84	6.54	6.83	43 58.66	5 24.2
18	7	. .	. .	. .	29.	. .	. .	. .	45 28.87	30.42	1.79	.	4	42.752	16 30.72	6.67	7.01	44 56.67	6 14.4
19	7	. .	9.2	. .	. .	. .	. .	. .	48 45.50	30.44	1.64	.	3	24.160	36 5.97	7.06	11.39	48 13.42	25 54.4
20	6	. .	. .	. .	12.	. .	. .	. .	49 11.93	30.44	1.54	.	2	13.532	47 7.68	7.12	13.94	48 39.95	31 36 58.7
21	9	. .	. .	. .	. .	. .	13.	. .	49 37.03	30.45	1.87	.	6	50.002	8 57.21	7.17	5.32	49 4.71	30 58 39.7
22	5	. .	. .	. .	. .	4.	23.	. .	50 46.32	30.45	1.57	.	2	14.546	46 4.46	7.31	13.69	50 14.30	31 35 55.5
23	8	. .	. .	. .	17.	34.5	. .	. .	52 16.68	30.46	1.69	.	4	37.708	21 47.33	7.50	8.20	51 44.53	11 33.0
24	8	. .	15.2	. .	. .	. .	. .	. .	54 51.40	30.47	1.88	.	4	47.385	11 38.88	7.82	5.93	54 19.05	31 1 22.6
25	5	. .	. .	. .	58.	. .	34.	. .	54 57.96	30.47	1.92	.	5	52.398	6 26.67	7.83	4.77	54 25.57	30 56 9.3
26	7	. .	. .	31.	. .	7.5	. .	. .	6 59 49.27	30.50	1.75	.	3	31.600	28 19.68	8.45	9.62	6 59 17.02	31 18 7.8
27	8	. .	37.5	. .	. .	. .	. .	. .	7 2 13.89	30.51	1.60	.	2	13.125	47 31.95	8.77	14.04	7 1 41.78	37 24.8
28	8	. .	. .	. .	. .	39.5	. .	. .	2 21.24	30.51	1.62	.	2	15.943	44 36.71	8.79	13.37	1 49.11	34 28.9
29	6	. .	. .	41.	59.5	. .	. .	. .	3 59.34	30.52	1.56	.	2	8.959	51 54.34	8.99	15.06	3 27.26	41 48.4
30	8	. .	. .	14.	32.	. .	. .	. .	5 32.00	30.53	1.85	.	4	39.922	19 28.33	9.18	7.66	5 59.62	9 15.2
31	7	. .	15.	33.5	51.	. .	. .	. .	8 51.24	30.54	1.74	.	3	26.783	33 21.76	9.60	10.77	8 18.96	23 12.1
32	7	. .	. .	. .	. .	41.5	58.	. .	9 22.76	30.54	1.83	.	4	35.250	24 22.06	9.64	8.76	8 50.39	14 10.5
33	8	. .	. .	. .	. .	15.	. .	. .	10 57.06	30.55	1.95	.	6	48.083	10 57.65	9.88	5.76	10 24.56	0 43.3
34	8	. .	. .	23.5	. .	. .	. .	. .	12 41.61	30.56	1.74	.	3	24.722	35 30.93	10.10	11.25	12 19.31	31 25 22.3
35	7	. .	. .	. .	30.	48.	. .	. .	13 29.98	30.56	1.99	.	5	51.403	7 29.14	10.21	4.98	12 57.43	30 57 14.3
36	8	. .	. .	54.	. .	. .	. .	. .	15 12.10	30.56	1.78	.	3	27.332	32 47.20	10.42	10.63	14 39.76	31 22 38.3
37	9	. .	14.	. .	. .	. .	. .	. .	16 50.22	30.57	1.89	.	3	39.056	20 31.26	10.63	7.87	16 17.76	31 10 19.8
38	7	. .	. .	6.5	24.	. .	. .	. .	17 24.29	30.57	2.00	.	4	51.043	7 50.42	10.71	5.06	16 51.72	30 57 16.2
39	6	. .	. .	. .	20.	38.	. .	. .	18 19.97	30.58	1.98	V.	4	48.120	10 54.32	10.83	5.74	17 47.41	31 0 40.9
40	5	. .	. .	. .	31.	. .	. .	. .	19 30.90	30.58	1.73	.	2	19.333	41 3.89	10.99	12.54	18 58.59	30 57.4
41	5	. .	. .	. .	30.	. .	. .	. .	20 29.88	30.59	1.76	.	3	23.603	36 41.39	11.11	11.52	19 57.53	26 34.0
42	6	. .	. .	. .	. .	14.5	32.5	. .	7 20 56.49	−30.59	−1.81	.	3	29.116	−30 55.59	−11.16	−10.21	7 20 24.09	−31 20 47.0

ZONE 228. FEBRUARY 16. S. $D_0 = -23° 19' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	3	. .	. .	. .	41.5	58.5	15.	. .	8 1 41.45	−30.39	−1.84	IV.	3	26.808	−33 20.20	− 1.73	− 4.52	8 1 9.2	−23 52 26.5
2	7	. .	. .	. .	0.2	17.	34.	. .	4 0.14	30.40	1.88	IV.	2	14.892	45 42.19	2.02	6.51	3 27.9	24 4 50.7
3	8	. .	. .	8.	. .	. .	. .	. .	6 24.91	30.40	1.77	.	3	35.123	24 38.44	2.32	3.15	5 52.7	23 43 43.9
4	7	. .	. .	. .	51.	. .	. .	. .	6 0.87	30.40	1.77	.	3	34.468	25 19.85	2.37	3.26	6 28.7	44 25.5
5	6	. .	. .	. .	. .	. .	56.8	. .	7 23.23	30.41	1.80	.	3	28.627	31 26.21	2.44	4.22	6 51.0	50 32.9
6	9	. .	19.	. .	. .	. .	. .	. .	11 52.90	30.41	1.81	. .	3	21.328	39 3.78	2.98	5.44	11 20.7	58 12.2
7	7	. .	. .	. .	11.	. .	. .	. .	12 10.87	30.41	1.78	.	3	28.680	31 22.82	3.03	4.23	11 38.7	50 30.1
8	8	. .	26.5	. .	. .	. .	. .	. .	14 0.34	30.42	1.76	.	3	29.508	30 30.55	3.26	4.09	13 28.2	49 37.9
9	8	. .	. .	. .	. .	32.	. .	. .	14 15.02	30.42	1.81	.	2	20.592	39 45.25	3.29	5.56	13 42.8	58 54.1
10	8	. .	. .	. .	. .	. .	19.	. .	14 45.41	30.42	1.71	.	3	41.100	18 23.56	3.35	2.17	14 13.3	37 29.1
11	9	. .	. .	58.	. .	. .	. .	. .	17 14.93	30.43	1.79	.	2	22.516	37 43.68	3.66	5.24	16 42.7	56 52.6
12	8	. .	. .	. .	. .	59.	16.	. .	17 42.29	30.43	1.74	V.	3	31.689	28 14.10	3.72	3.71	17 10.1	47 21.5
13	5	. .	. .	. .	. .	23.	40.	. .	19 6.32	30.43	1.67	V.	4	44.550	14 38.45	3.89	1.60	18 34.2	33 43.9
14	7	. .	. .	49.	. .	. .	. .	. .	8 21 5.99	−30.43	−1.65	.	4	47.253	−11 47.92	− 4.14	− 1.17	8 20 33.9	−23 30 53.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(228) 4. Transit over T. IV assumed as 1^s, not 51^s, and minutes as 7, not 6.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 228	Feb. 16, 8 0	82 39 60.	67.2	68.3	58.3	65.5	44.	60.55	29.934	23.4	16.3			
	8 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	16.2			
	8 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	15.3			
	9 0	60.	67.2	68.3	59.2	65.5	44.	60.70	29.934	23.5	15.			

ZONE 228. FEBRUARY 16. S. $D_0 = -23° 19' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	8	. .	. .	5.	. .	. .	. .	. .	8 24 21.91	−30.43	−1.75	.	3	24.152	−36 6.82	− 4.54	− 4.96	8 23 49.7	−23 55 16.3
16	9	. .	. .	55.	. .	. .	. .	. .	25 12.04	30.43	1.60	.	5	53.852	4 58.60	4.65	0.10	24 40.0	24 3.3
17	8	. .	44.5	. .	. .	. .	47.	. .	25 13.40	30.43	1.64	.	4	45.738	13 17.80	4.65	1.41	24 41.3	32 23.9
18	9	. .	. .	. .	. .	. .	. .	. .	27 18.34	30.44	1.63	.	4	46.820	12 13.47	4.95	1.24	26 46.3	31 19.7
19	7	. .	. .	. .	. .	40.	. .	. .	27 23.18	30.44	1.67	.	3	38.292	21 19.96	4.93	2.61	26 51.1	40 27.5
20	8	. .	55.	. .	. .	. .	. .	. .	29 28.84	30.44	1.67	.	3	36.538	23 9.46	5.20	2.91	28 56.7	42 17.6
21	8	. .	. .	37.	. .	. .	. .	. .	29 53.92	30.44	1.67	.	3	36.494	23 12.53	5.24	2.92	29 21.8	42 20.7
22	7	. .	47.	4.	21.	. .	. .	. .	31 20.87	30.45	1.68	IV.	3	32.203	27 41.91	5.43	3.63	30 48.7	23 46 51.0
23	8	. .	8.	25.	. .	. .	. .	. .	33 41.94	30.45	1.75	III.	2	16.992	43 30.04	5.73	6.15	33 9.7	24 2 41.9
24	8	. .	20.	. .	. .	. .	. .	. .	34 53.93	30.45	1.76	.	2	14.683	45 54.24	5.89	6.55	34 21.7	24 5 6.7
25	8	. .	. .	. .	. .	20.8	. .	. .	35 3.91	30.45	1.68	.	3	28.690	31 22.26	5.91	4.22	34 31.8	23 50 32.4
26	7	. .	. .	16.	. .	. .	. .	. .	36 32.93	30.45	1.63	.	4	38.064	21 24.48	6.08	2.65	36 0.8	40 33.2
27	8	. .	. .	. .	. .	. .	22.	. .	36 48.41	30.45	1.69	.	3	25.266	34 57.19	6.13	4.79	36 16.3	54 8.1
28	8	. .	. .	. .	. .	. .	9.	. .	37 35.38	30.45	1.72	.	3	20.312	40 7.96	6.23	5.64	37 3.2	59 19.8
29	9	. .	3.	. .	. .	. .	. .	. .	41 36.85	30.46	1.66	.	3	28.635	31 25.27	6.75	4.23	41 4.7	50 36.3
30	9	. .	. .	. .	. .	. .	59.	. .	41 25.41	30.46	1.60	.	4	39.878	19 31.84	6.73	2.37	40 53.4	23 38 40.9
31	8	. .	23.8	. .	. .	. .	. .	. .	43 57.71	30.46	1.70	.	2	18.210	42 13.15	7.06	5.95	43 25.5	24 1 26.2
32	.	. .	. .	. .	. .	12.5	29.	. .	43 55.57	30.46	1.48	VI.	.	.149	4 48.	7.	0.	43 23.6	23 23 55.0
33	9	. .	. .	47.	. .	. .	. .	. .	48 3.91	30.46	1.59	.	3	35.810	23 55.21	7.58	3.03	47 31.9	43 5.8
34	8	. .	. .	. .	57.3	14.5	. .	. .	48 57.39	30.46	1.62	.	3	29.428	30 36.07	7.70	4.10	48 25.3	49 47.9
35	8	. .	37.5	. .	13.	. .	. .	. .	52 10.84	30.46	1.61	.	3	28.292	31 47.35	8.17	4.27	51 38.77	23 50 59.8
36	8	. .	. .	59.	. .	. .	. .	. .	53 15.99	30.46	1.69	.	2	11.325	49 25.65	8.26	7.10	52 43.8	24 8 41.0
37	7	. .	. .	. .	. .	. .	8.5	. .	53 34.91	30.46	1.55	.	4	39.330	20 6.42	8.30	2.45	53 2.9	23 39 17.2
38	5	. .	. .	. .	48.	5.	22.	. .	54 48.17	30.46	1.52	.	5	44.278	14 56.33	8.46	1.65	54 16.2	34 6.4
39	7	. .	13.	30.3	47.	. .	. .	. .	56 46.99	30.46	1.54	.	4	39.660	19 44.83	8.70	2.41	56 15.0	38 56.0
40	7	. .	. .	. .	7.	. .	. .	. .	58 6.88	30.46	1.53	.	4	39.765	19 38.17	8.92	2.39	57 34.9	38 49.5
41	7	. .	. .	. .	58.	. .	. .	. .	8 58 57.88	30.46	1.51	.	4	42.830	16 25.82	8.99	1.89	58 25.9	35 35.7
42	6	. .	50.	7.	24.	. .	. .	. .	9 0 23.90	−30.46	−1.50	.	4	44.836	−14 19.93	− 9.18	− 1.56	8 59 51.9	−23 33 30.7

ZONE 229. FEBRUARY 19. C. $D_0 = -28° 54' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7	. .	. .	26.3	43.5	. .	19.5	. .	5 46 43.88	−31.33	−0.55	IV.	3	25.381	−34 49.98	− 2.71	− 6.99	5 46 12.0	−29 29 19.7
2	9.10	. .	10.5	33.5	. .	. .	. .	. .	48 51.17	31.35	0.48	III.	5	45.401	13 45.50	2.92	2.75	48 19.3	8 11.2
3	7	. .	. .	39.7	56.7	14.9	32.6	. .	48 57.17	31.35	0.49	IV.	4	43.072	16 10.71	2.95	3.24	48 25.3	10 36.9
4	9	. .	. .	. .	22.	39.7	57.5	. .	50 22.05	31.36	0.49	IV.	4	43.925	15 17.11	3.11	3.05	49 50.2	9 43.3
5	8.9	. .	. .	39.3	8.5	16.3	. .	. .	53 58.07	31.38	0.50	IV.	4	45.961	13 9.33	3.50	2.63	53 26.2	7 35.5
6	8.9	. .	10.5	28.2	45.9	3.5	. .	. .	54 45.91	31.38	0.51	IV.	4	40.718	18 38.44	3.58	3.73	54 14.0	13 5.7
7	9	. .	. .	. .	51.	8.5	. .	. .	5 58 50.79	31.42	0.58	IV.	3	24.222	25 35.22	4.01	5.12	5 58 19.0	20 4.4
8	7	. .	15.5	33.5	50,8	9.4	. .	. .	6 0 51.18	31.43	0.65	IV.	2	10.595	50 11.88	4.26	10.18	6 0 19.1	44 46.3
9	10	. .	. .	. .	. .	39.2	. .	. .	1 21.32	31.44	0.62	VII.	3	18.001	42 32.40	4.30	8.59	0 49.2	37 5.3
10	9.10	. .	54.	12.1	29.3	. .	. .	. .	4 29.53	31.46	0.59	IV.	3	28.472	31 36.05	4.65	6.34	3 57.5	26 7.0
11	9	. .	. .	. .	53.2	11.5	28.8	. .	4 53.34	31.46	0.67	IV.	2	7.941	52 58.18	4.69	10.74	4 21.2	47 33.6
12	9.10	. .	35.5	53.3	. .	. .	. .	. .	7 11.05	31.48	0.58	III.	3	29.204	30 49.88	4.95	6.17	6 39.0	29 25 21.0
13	8.9	. .	. .	. .	14.2	31.7	. .	. .	7 14.11	31.48	0.49	IV.	5	54.362	4 23.45	4.95	0.86	6 42.1	28 58 49.3
14	9	. .	. .	. .	. .	14.	. .	. .	7 56.28	31.49	0.58	V.	3	30.576	29 23.99	5.02	5.88	7 24.2	29 23 54.9
15	7.8	. .	. .	. .	. .	. .	. .	. .	8	31.49	0.57	VI.	3	32.935	26 55.72	5.08	5.38	8	21 26.2
16	8	. .	. .	. .	45.3	3.3	. .	. .	9 45.39	31.50	0.57	IV.	3	35.024	24 44.77	5.23	4.94	9 13.3	19 14.9
17	7.8	. .	. .	. .	43.	0.8	. .	. .	6 10 42.89	−31.51	−0.67	IV.	2	10.885	−49 53.50	− 5.33	−10.11	6 10 10.7	−29 44 28.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 229	Feb. 19, 5 10	88 14 62.2	68.8	73.8	59.4	65.9	49.0	63.18						
	5 50	. .	. .	. .	. .	. .	. .	. .	. .	. .	21.	32.2		
	5 58	. .	. .	. .	. .	. .	. .	. .	30.572	28.	20.5	25.5		
	6 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	20.3	27.2		
	6 40	. .	. .	. .	. .	. .	. .	. .	30.568	27.5	19.8			

REMARKS.

(228) 16. Declination differs 1′ from Arg. Z. 368, 44.

(228) 18. Transit over T. II assumed as recorded over T. I.

(228) 19. Right ascension differs 10^s from Arg. Z. 368, 48.

(228) 32. Micrometer reading assumed as $54^r.149$.

(228) 35. Transits 2^s discordant.

(229) 2. Time of transit over T. II assumed as $15^s.5$ instead of $10^s.5$.

(229) 5. Time of transit over T. IV assumed as $58^s.5$ instead of $8^s.5$.

(229) 7. Micrometer reading assumed as $34^r.222$, not $24^r.222$.

ZONE 229. FEBRUARY 19. C. $D_0 = -28° 54' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
18	10	. .	19.2	. .	54.8	. .	. .	. .	6 12 54.70	−31.52	−0.53	IV.	6	45.938	−13 11.96	− 5.59	− 2.63	6 12 22.7	− 29 7 40.2
19	10	. .	. .	. .	. .	52.2	. .	. .	13 34.42	31.53	0.61	V.	3	25.570	34 38.04	5.66	6.95	13 2.3	29 10.6
20	9	. .	. .	46.2	. .	21.5	. .	. .	15 3.83	31.54	0.63	IV.	2	21.776	38 30.40	5.83	7.77	14 31.6	33 4.0
21	8.9	. .	. .	. .	. .	58.3	16.5	. .	15 40.79	31.54	0.64	V.	2	18.868	41 33.18	5.90	8.41	15 8.6	36 7.5
22	9	. .	. .	. .	. .	. .	50.?	. .	16 14.70	31.55	0.53	VI.	5	48.441	10 35.37	5.96	2.11	15 42.6	5 3.4
23	9	. .	. .	58.3	16.2	. .	. .	. .	18 16.09	31.56	0.55	IV.	4	42.028	17 16.23	6.19	3.46	17 44.0	11 45.9
24	8.9	. .	. .	. .	. .	. .	50.8	. .	18 15.36	31.56	0.69	VI.	2	8.302	52 36.37	6.19	10.66	17 43.1	47 13.2
25	8	. .	49.5	. .	25.5	43.2	. .	. .	20 25.30	31.57	0.66	IV.	2	17.829	42 37.98	6.43	8.62	19 53.1	37 13.0
26	10	. .	. .	0.5	. .	36.3	. .	. .	23 18.48	31.59	0.57	IV.	4	42.058	17 13.22	6.76	3.45	22 46.3	11 43.4
27	8.9	. .	. .	21.5	39.1	56.8	. .	. .	26 39.15	31.61	0.57	IV.	4	41.642	17 40.51	7.14	3.54	26 7.0	12 11.2
28	10	. .	. .	. .	. .	27.3	. .	. .	27 9.47	31.62	0.66	V.	3	21.682	38 41.89	7.20	7.79	26 37.2	33 16.9
29	10	. .	. .	. .	. .	. .	58.	. .	27 22.71	31.62	0.64	VI.	3	26.279	33 53.57	7.22	6.80	26 50.5	28 27.6
30	9	. .	. .	. .	52.	9.8	27.4	. .	28 51.99	31.63	0.66	IV.	3	23.015	36 15.47	7.40	7.14	28 19.7	30 50.0
31	9.10	. .	12.9	. .	48.	. .	. .	. .	33 48.15	31.65	0.56	IV.	5	51.649	7 13.57	8.00	1.44	33 15.9	1 43.0
32	8.9	. .	12.2	30.	47.7	5.3	23.	. .	37 47.71	31.68	0.57	IV.	4	48.032	10 59.41	8.49	2.20	37 15.5	5 30.1
33	9.10	. .	. .	. .	. .	. .	49.2	. .	38 13.90	31.69	0.67	VI.	3	25.476	34 43.95	8.54	6.97	37 41.5	29 19.5
34	8.9	. .	24.2	. .	59.2	16.5	34.4	. .	40 59.18	31.70	0.65	IV.	3	30.306	29 40.99	8.88	5.94	40 26.9	24 15.8
35	10	. .	. .	. .	. .	55.2	12.5	. .	6 41 37.34	−31.70	−0.66	V.	3	28.032	−32 3.54	− 8.96	− 6.42	6 41 5.0	− 29 26 38.9

ZONE 230. FEBRUARY 19. C. $D_0 = -30° 49' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	. .	59.2	. .	. .	7 27 41.21	−30.02	−2.95	V.	5	40.862	−18 30.72	− 2.83	− 3.42	7 27 8.24	− 31 8 27.0
2	9.10	. .	28.2	. .	54.5	12.4	. .	. .	29 54.40	30.03	2.94	IV.	4	38.386	21 4.90	3.12	4.02	29 21.43	31 11 2.0
3	9	. .	40.5	48.3	16.8	. .	. .	. .	31 16.62	30.04	2.95	IV.	5	49.542	9 25.95	3.30	1.36	30 43.63	30 59 20.6
4	10	. .	. .	. .	. .	51.5	. .	. .	31 33.57	30.04	2.95	V.	5	48.810	10 11.89	3.34	1.53	31 0.58	31 0 6.8
5	8.9	. .	. .	36.1	54.	11.8	. .	. .	32 53.96	30.05	2.93	IV.	5	42.252	17 3.48	3.51	3.09	32 20.98	7 0.1
6	9	. .	. .	. .	. .	28.3	. .	. .	33 10.30	30.05	2.93	V.	3	38.905	20 41.24	3.55	3.86	32 37.32	10 38.7
7	9	. .	. .	. .	. .	19.5	. .	. .	34 1.55	30.05	2.93	IV.	4	46.114	12 59.85	3.67	2.17	33 28.57	2 55.7
8	9	. .	. .	12.5	. .	48.6	. .	. .	35 30.62	30.06	2.91	IV.	3	39.168	20 24.87	3.87	3.81	34 57.65	10 22.6
9	8	. .	. .	. .	. .	. .	11.8	. .	35 35.86	30.06	2.89	VI.	3	31.041	28 54.62	3.88	5.75	35 2.91	18 54.3
10	9.10	. .	. .	. .	. .	48.2	. .	. .	36 30.14	30.06	2.89	V.	3	29.752	30 15.56	4.00	6.06	35 57.19	20 15.6
11	9.10	. .	. .	. .	. .	23.8	42.5	. .	37 6.12	30.07	2.88	V.	3	26.742	33 24.39	4.09	6.79	36 33.17	23 25.3
12	8.9	. .	. .	34.5	52.3	. .	. .	. .	38 52.37	30.07	2.87	IV.	3	30.542	29 26.12	4.32	5.87	38 19.43	19 26.3
13	10	. .	. .	. .	. .	30.7	. .	. .	39 12.62	30.07	2.86	V.	3	28.566	31 30.09	4.38	6.34	38 39.69	21 30.8
14	10	. .	. .	. .	. .	22.1	39.5	. .	40 3.66	30.07	2.85	V.	2	17.723	42 45.08	4.49	8.96	39 30.74	32 48.5
15	8	. .	46.8	. .	23.5	41.6	59.6	. .	43 23.40	30.09	2.84	IV.	3	34.985	24 47.22	4.95	4.80	42 50.47	31 14 47.0
16	10	. .	. .	. .	45.5	. .	. .	. .	44 45.39	30.09	2.85	IV.	5	52.958	5 51.34	5.15	0.50	44 12.45	30 55 47.0
17	9	. .	. .	41.2	9.3	27.	35.2	. .	46 9.16	30.10	2.82	IV.	3	34.565	25 13.71	5.34	4.90	45 36.24	31 15 14.0
18	9	. .	. .	. .	38.5	56.4	14.1	. .	46 38.29	30.10	2.82	IV.	3	34.542	25 15.15	5.42	4.90	46 5.37	15 15.5
19	9	. .	. .	. .	54.3	12.6	30.5	. .	47 54.39	30.11	2.80	IV.	3	24.966	35 15.81	5.59	7.22	47 21.48	25 18.6
20	9	. .	. .	. .	47.2	5.3	. .	. .	48 47.15	30.11	2.80	IV.	3	29.984	30 1.00	5.72	6.00	48 14.24	20 2.7
21	8.9	. .	. .	. .	31.	49.2	6.5	. .	49 30.87	30.11	2.80	IV.	4	40.761	18 32.29	5.81	3.79	48 57.96	8 31.9
22	9.10	. .	. .	. .	. .	. .	53.?	. .	49 17.05	30.11	2.79	VI.	3	35.500	24 14.97	5.77	4.68	48 44.15	14 15.4
23	9	. .	50.	7.9	26.2	44.4	. .	. .	52 26.17	30.12	2.76	IV.	2	21.121	39 11.62	6.23	8.15	51 53.29	29 16.0
24	9.10	. .	. .	. .	. .	10.5	. .	. .	52 52.56	30.12	2.78	V.	4	47.217	11 51.06	6.30	1.92	52 19.66	1 49.3
25	10	. .	. .	17.5	. .	. .	. .	. .	54 35.70	30.13	2.73	III.	2	10.965	49 47.98	6.54	10.63	54 2.84	39 55.2
26	10	. .	. .	. .	45.8	. .	21.8	. .	54 45.75	30.13	2.75	IV.	3	27.951	32 8.49	6.56	6.49	54 12.87	22 11.6
27	10	. .	. .	. .	. .	5.	22.5	. .	7 54 46.64	−30.13	−2.74	V.	3	20.216	−40 13.96	− 6.56	− 8.38	7 54 13.77	− 31 30 18.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 230	Feb. 19, 7 26	90 9 62.7	70.7	74.5	61.7	68.3	49.8	64.62	30.566	26.5	18.	. .	24.8	26.
	7 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	17.8			
	8 0	. .	. .	. .	. .	. .	. .	. .	30.570	26.	17.			
	8 40	62.5	71.2	75.2	62.	68.8	49.1	64.80	30.560	25.5	16.2	. .	24.5	25.

REMARKS.

(229) 30. Micrometer reading assumed as 24r.015 instead of 23r.015.

(230) 2. Time of transit over T. II assumed as 18s.2 instead of 28s.2.

(230) 3. Time of transit over T. III assumed as 58s.3 instead of 48s.3.

(230) 17. Time of transit over T. III assumed as 51s.2 instead of 41s.2.

ZONE 230. FEBRUARY 19. C. $D_0 = -30° \ 49' \ 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
28	9.10	. .	. .	. .	. .	. .	25.2	. .	7 55 49.23	−30.13	−2.76	VI.	3	44.366	−14 58.65	− 6.72	− 2.58	7 55 16.34	− 31 4 58.0
29	9.10	. .	. .	. .	. .	4.5	22.3	. .	56 46.45	30.13	2.76	V.	5	47.825	11 13.71	6.85	1.78	56 13.56	1 12.3
30	9	. .	. .	50.5	8.3	. .	. .	. .	58 8.38	30.14	2.73	IV.	3	33.748	26 4.84	7.04	5.10	57 35.51	16 7.0
31	9.10	. .	. .	. .	. .	49.8	7.9	. .	7 58 31.88	30.14	2.74	V.	4	41.565	17 45.78	7.10	3.23	7 57 59.00	7 46.1
32	10	. .	. .	47.2	5.1	. .	. .	. .	8 2 5.20	30.15	2.69	IV.	2	15.923	44 37.53	7.61	9.42	8 1 32.36	34 44.6
33	10	. .	. .	. .	. .	52.3	. .	. .	2 34.36	30.15	2.73	V.	5	47.906	11 8.63	7.68	1.72	2 1.48	1 8.0
34	8.9	. .	. .	27.8	. .	4.	21.9	. .	3 45.95	30.16	2.71	IV.	3	37.167	22 30.44	7.85	4.28	3 13.08	12 32.6
35	10	. .	. .	25.3	. .	1.5	. .	. .	5 43.36	30.16	2.66	IV.	2	14.951	45 38.56	8.14	9.66	5 10.54	35 46.4
36	9	. .	. .	. .	34.4	. .	. .	. .	7 34.36	30.17	2.64	IV.	2	8.628	52 15.16	8.40	11.23	7 1.55	42 24.8
37	8	. .	. .	55.2	13.5	31.8	. .	. .	8 13.47	30.17	2.66	IV.	3	32.508	27 22.77	8.49	5.40	7 40.64	17 26.7
38	10.11	. .	. .	. .	. .	. .	54.5	. .	8 18.53	30.17	2.67	VI.	4	43.404	15 50.68	8.50	2.79	7 45.69	5 52.0
39	9.10	. .	. .	48.2	. .	25.	. .	. .	10 6.56	30.17	2.64	V.	2	19.186	41 13.43	8.76	8.63	9 33.75	31 20.8
40	10	. .	. .	. .	. .	1.	18.6	. .	10 42.83	30.18	2.65	V.	4	42.725	16 32.86	8.85	2.97	10 10.00	6 34.7
41	10	. .	. .	. .	. .	18.3	. .	. .	12 0.06	30.18	2.63	V.	2	17.068	43 26.22	9.03	9.14	11 27.25	33 34.4
42	10	. .	. .	. .	. .	59.	. .	. .	12 40.67	30.18	2.60	V.	2	10.443	50 21.84	9.13	10.79	12 7.89	40 31.8
43	9.10	. .	. .	54.2	11.9	29.8	. .	. .	14 11.93	30.18	2.62	IV.	3	28.870	31 10.84	9.35	6.27	13 39.13	21 16.5
44	9.10	. .	. .	. .	54.8	13.1	. .	. .	14 54.80	30.19	2.61	IV.	2	18.779	41 38.40	9.45	8.73	14 22.00	31 46.6
45	9.10	. .	49.6	8.1	26.	. .	. .	. .	16 26.05	30.19	2.58	III.	2	16.487	44 1.84	9.66	9.29	15 53.28	34 10.8
46	8.9	. .	. .	31.3	49.2	7.4	. .	. .	16 49.26	30.19	2.59	IV.	3	23.735	36 33.03	9.72	7.51	16 16.48	26 40.3
47	9	. .	. .	. .	. .	. .	53.8	. .	17 17.84	30.19	2.61	VI.	4	41.644	17 41.01	9.78	3.99	16 45.04	7 44.8
48	8	. .	. .	25.7	43.2	1.1	. .	. .	19 43.28	30.20	2.57	IV.	3	23.161	37 9.18	10.14	7.67	19 10.51	27 17.0
49	9	. .	. .	4.2	. .	. .	58.2	. .	21 22.27	30.20	2.56	IV.	3	18.421	42 6.56	10.36	8.81	20 49.51	32 15.7
50	8.9	. .	. .	. .	37.2	55.3	. .	. .	21 37.06	30.20	2.54	IV.	2	9.489	51 21.36	10.40	11.02	21 4.32	41 32.8
51	8	. .	. .	. .	. .	. .	14.3	. .	21 38.27	30.20	2.56	VI.	2	20.451	39 54.40	10.40	8.33	21 5.51	30 3.1
52	10	. .	. .	47.2	. .	24.3	. .	. .	24 5.80	30.20	2.56	IV.	3	36.232	23 29.10	10.74	4.50	23 33.04	13 34.3
53	7	. .	. .	. .	. .	18.3	36.8	. .	25 0.34	30.21	2.51	V.	2	11.410	49 21.20	10.86	10.55	24 27.62	39 32.6
54	9	. .	. .	. .	. .	28.3?	. .	. .	26 10.24	30.21	2.54	V.	3	29.975	30 1.56	11.02	6.01	25 37.49	20 8.6
55	9	. .	. .	. .	. .	40.3	8.5	. .	26 22.42	30.21	2.55	V.	3	37.402	22 15.76	11.05	4.23	25 49.66	12 21.0
56	7.8	. .	. .	. .	. .	. .	9.	. .	27 33.03	30.21	2.56	VI.	4	47.652	11 23.97	11.22	1.73	27 0.26	1 26.9
57	9	. .	36.5	54.8	. .	31.2	. .	. .	30 12.93	30.22	2.48	IV.	2	9.155	51 42.18	11.59	11.12	29 40.23	41 55.0
58	8	. .	. .	. .	52.8	11.2	. .	. .	30 52.79	30.22	2.46	IV.	2	6.464	54 30.99	11.67	11.78	30 20.11	44 44.4
59	8.9	. .	. .	. .	. .	. .	1.8	. .	31 25.84	30.22	2.51	VI.	4	37.425	22 5.90	11.75	4.22	30 53.11	12 11.9
60	9	. .	9.5	28.2	46.2	. .	. .	. .	34 46.14	30.23	2.45	IV.	2	12.677	48 1.24	12.21	10.23	34 13.46	31 38 13.7
61	9	. .	. .	. .	17.2	35.	. .	. .	35 17.09	30.23	2.50	IV.	3	53.118	5 49.27	12.27	0.50	34 44.36	30 55 52.0
62	9	. .	. .	16.7	34.2	. .	. .	. .	36 34.44	30.23	2.47	IV.	3	37.102	22 34.45	12.44	4.30	36 1.74	31 12 41.2
63	9	. .	. .	11.2	28.3	. .	. .	. .	37 28.77	30.23	2.47	IV.	4	45.722	13 24.39	12.57	2.23	36 56.07	3 29.2
64	8.9	. .	18.5	36.7	54.8	. .	. .	. .	38 54.78	30.23	2.44	IV.	2	21.616	38 40.57	12.75	8.05	38 22.11	28 51.4
65	10	. .	. .	36.2	54.2	. .	. .	. .	8 39 54.22	−30.23	−2.46	IV.	4	45.808	−13 18.92	−12.90	− 2.22	8 39 21.53	− 31 3 24.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(230) 55. Time of transit over T. VI assumed as $58^s.5$ instead of $8^s.5$.

(230) 56. Micrometer reading assumed as $47^r.652$, not $46^r.652$.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 231. FEBRUARY 23. S. $D_0 = -30° 49' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7.8	. .	. .	2.2	. .	. .	. .	. .	6 1 20.31	−31.70	+0.02	.	3	25.670	−34 31.47	− 1.68	− 7.01	6 0 48.63	− 31 14 10.2
2	9	. .	. .	. .	. .	23.	. .	. .	2 4.80	31.71	+0.04	.	3	20.119	40 19.99	1.78	8.32	1 33.13	31 30 0.1
3	8	. .	45.5	. .	21.	. .	. .	. .	4 21.29	31.72	−0.03	IV.	5	48.618	10 23.88	2.08	1.70	3 49.54	30 59 56.7
4	9	. .	. .	. .	. .	26.5	. .	. .	5 8.41	31.73	−0.00	.	3	27.985	32 6.42	2.19	6.48	4 36.68	31 21 45.1
5	10	. .	. .	. .	. .	. .	32.	. .	5 55.99	31.73	+0.01	.	3	22.388	37 57.66	2.28	7.80	5 24.27	31 27 37.7
6	10	. .	5.	. .	. .	. .	. .	. .	8 41.19	31.75	−0.06	.	4	50.448	8 26.64	2.66	1.29	8 9.38	30 58 0.6
7	7	. .	8.	26.	43.	. .	. .	. .	11 43.80	31.77	0.01	.	2	18.885	41 31.74	3.07	8.64	11 12.02	31 31 13.4
8	7	. .	. .	. .	. .	1.	19.	. .	12 43.06	31.78	0.08	.	4	51.228	7 39.30	3.20	1.11	12 11.20	30 57 13.6
9	8	. .	. .	. .	5.	23.	41.	. .	15 4.84	31.80	0.01	V.	2	10.510	50 17.65	3.51	10.61	14 33.03	31 40 1.8
10	6	. .	. .	52.	10.	. .	. .	. .	18 10.09	31.82	0.01	IV.	2	7.718	53 12.18	3.92	11.31	17 38.26	42 57.4
11	9	. .	32.5	. .	. .	. .	. .	. .	20 8.82	31.83	0.05	.	3	21.320	39 4.16	4.18	8.05	19 36.94	28 46.4
12	8.7	. .	. .	. .	31.2	. .	. .	. .	20 31.07	31.84	0.07	.	3	26.068	34 6.75	4.22	6.93	19 59.16	23 47.9
13	7.8	. .	16.2	.33	52.	. .	. .	. .	24 51.81	31.86	0.13	.	4	44.336	14 51.56	4.78	2.69	24 19.82	4 29.0
14	9.8	. .	13.	31.	. .	. .	. .	. .	26 49.18	31.87	0.13	III.	4	40.343	19 1.59	5.03	3.60	26 17.18	8 40.2
15	8	. .	13.	31.5	49.	. .	. .	. .	29 49.24	31.89	0.15	IV.	4	38.628	20 49.66	5.42	4.01	29 17.20	10 29.1
16	8	. .	. .	. .	20.	38.	. .	. .	30 19.86	31.90	0.10	IV.	3	21.703	38 40.50	5.48	7.96	29 47.86	28 23.9
17	9	. .	. .	. .	. .	40.	58.	. .	32 22.00	31.91	0.14	.	3	30.109	29 53.29	5.73	5.98	31 49.95	19 35.0
18	8	. .	. .	. .	9.	27.	. .	. .	34 8.80	31.92	0.10	.	2	8.440	52 27.08	5.96	11.14	33 36.78	42 14.2
19	8	. .	35.8	54.	12.	. .	. .	. .	37 12.06	31.94	0.14	.	2	18.763	41 39.46	6.35	8.67	36 39.98	31 31 24.5
20	5	. .	42.5	59.8	. .	. .	. .	. .	39 18.35	31.95	0.23	.	4	54.242	5 31.91	6.62	1.00	38 46.17	30 55 9.5
21	9	. .	. .	. .	. .	18.	. .	. .	40 59.80	31.96	0.15	.	2	20.072	40 17.80	6.82	8.33	40 27.69	31 30 3.0
22	6	. .	. .	. .	. .	. .	54.	. .	41 17.90	31.96	0.14	.	2	12.910	47 47.13	6.75	10.06	39 45.80	37 33.9
23	9	. .	53.5	. .	29.	. .	. .	. .	43 29.30	31.98	0.22	IV.	3	37.839	21 48.08	7.13	4.34	42 57.10	11 29.6
24	5	. .	39.5	. .	. .	. .	. .	. .	45 15.85	31.99	0.18	.	2	18.148	42 16.91	7.35	8.78	44 43.68	32 3.0
25	8	. .	. .	. .	29.2	. .	. .	. .	45 29.07	31.99	0.23	.	4	42.719	16 32.86	7.37	3.06	44 56.85	6 13.3
26	9	. .	10.	. .	. .	. .	. .	. .	48 46.30	32.01	0.20	.	3	24.083	36 10.71	7.78	7.39	48 14.09	25 55.9
27	6	. .	. .	. .	12.5	. .	. .	. .	49 12.43	32.01	0.19	.	2	13.518	47 8.56	7.84	9.92	48 40.23	36 56.3
28	10	. .	. .	. .	. .	18.5	. .	. .	50 0.29	32.01	0.20	.	2	19.328	41 4.58	7.94	8.51	49 28.08	30 51.0
29	6	. .	. .	. .	. .	5.	23.	. .	50 46.82	32.02	0.19	V.	2	14.529	46 5.53	8.03	8.66	50 14.61	35 52.2
30	9	. .	. .	. .	. .	34.2	. .	. .	52 16.19	32.03	0.25	.	4	37.692	21 48.71	8.21	4.22	51 43.91	11 31.1
31	9	. .	16.	. .	. .	. .	. .	. .	54 52.20	32.04	0.28	.	4	47.332	11 42.21	8.53	1.99	54 19.88	31 1 22.7
32	6	. .	. .	. .	58.2	16.	. .	. .	54 58.09	32.04	0.30	IV.	5	52.362	6 29.00	8.55	0.85	54 25.75	30 56 8.4
33	7.8	. .	13.5	32.	50.	. .	. .	. .	6 59 49.90	32.07	0.27	.	3	31.543	28 23.32	9.14	5.65	6 59 17.56	31 18 8.1
34	9	. .	37.	. .	. .	. .	. .	. .	7 2 13.39	32.08	0.25	.	2	13.099	47 33.52	9.44	10.02	7 1 41.06	37 23.0
35	9	. .	. .	. .	21.	. .	. .	. .	2 20.92	32.08	0.25	.	2	15.883	44 40.04	9.45	9.34	1 48.59	34 28.8
36	6	. .	. .	. .	. .	17.	. .	. .	2 58.99	32.09	0.30	.	3	37.888	21 45.07	9.53	4.18	2 26.60	11 28.8
37	7	. .	. .	. .	. .	17.	. .	. .	3 58.65	32.09	0.25	.	2	8.883	51 59.42	9.66	11.06	3 26.31	41 50.1
38	7	. .	. .	14.3	. .	. .	. .	. .	5 32.44	32.10	0.32	.	4	39.908	19 28.64	9.84	3.70	5 0.02	9 12.2
39	8	. .	. .	33.	51.	. .	. .	. .	8 50.99	32.12	0.30	IV.	3	26.719	33 25.84	10.30	6.78	8 18.57	23 12.9
40	8	. .	. .	. .	. .	. .	58.5	. .	9 22.55	32.12	0.33	.	4	35.180	24 26.71	10.33	4.80	8 50.10	14 11.8
41	9	. .	. .	23.8	. .	. .	. .	. .	12 41.91	32.14	0.32	.	3	24.731	35 30.37	10.75	7.23	12 9.45	31 25 18.3
42	9	. .	. .	. .	. .	48.	. .	. .	13 30.09	32.14	0.38	.	5	51.353	7 32.52	10.86	1.06	12 57.57	30 57 14.4
43	10	. .	. .	. .	. .	. .	21.	. .	14 45.02	32.15	0.39	.	5	52.785	6 2.44	11.03	0.73	14 12.48	55 44.2
44	9	. .	48.	. .	24.	. .	. .	. .	17 24.03	32.16	0.40	IV.	5	51.048	7 51.30	11.36	1.13	16 51.47	30 57 33.8
45	8	. .	2.	20.	. .	. .	. .	. .	18 38.19	32.16	0.40	.	4	48.068	10 56.58	11.52	1.81	18 5.63	31 0 39.9
46	6	. .	. .	13.5	. .	. .	. .	. .	19 31.64	32.17	0.35	.	2	20.228	41 9.93	11.64	8.60	18 59.12	31 0.2
47	9	. .	. .	. .	. .	. .	. .	5.	19 10.59	32.17	0.35	.	2	20.725	39 37.09	11.60	8.18	18 38.07	29 26.9
48	5	. .	. .	. .	. .	48.	. .	. .	20 29.85	32.17	0.36	.	3	23.519	36 46.78	11.76	7.54	19 57.32	26 36.1
49	7	. .	. .	. .	. .	. .	33.	. .	7 20 57.05	−32.17	−0.37	.	3	28.985	−31 3.55	−11.83	− 6.23	7 20 24.51	− 31 20 51.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(231) 20. Micrometer reading assumed as 53r.242, not 54r.242.
(231) 22. Minutes assumed as 40, not 41.
(231) 46. Micrometer reading assumed as 19r.228, not 20r.228.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
			° ′ ″						″	in.	°	°	°	°	°
Zone 231	1849. Feb. 23,	h. m. 6 0	90 9 60.	65.	70.3	54.9	63.8	46.8	60.13	30.406	39.2	32.4	38.	39.	
		6 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	31.			
		6 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	30.4			
		7 0	60.	65.	70.5	54.9	65.	46.8	60.37	30.398	37.	30.0			
		7 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.8			
		7 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	29.4			
		8 0	. .	. .	. .	. .	. .	. .	. .	30.391	36.	29.			
		8 30	60.	65.6	71.0	54.9	65.	46.8	60.55	30.384	35.2	28.5			

ZONE 231. FEBRUARY 23. S. $D_0 = -30° 49' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	6	. .	2.	20.	. .	. .	. .	. .	7 23 38.25	−32.19	−0.36	.	2	17.765	−42 41.50	−12.17	− 8.90	7 23 5.70	− 31 32 32.6
51	9	. .	. .	. .	. .	. .	14.3	. .	23 38.25	32.19	0.36	.	2	17.835	42 28.33	12.17	8.89	23 5.70	32 19.4
52	8	. .	5.3	. .	41.5	59.	. .	. .	27 41.30	32.20	0.43	V.	4	40.678	18 40.39	12.69	3.52	27 8.67	8 26.6
53	10	. .	18.	. .	. .	. .	. .	. .	29 54.23	32.21	0.44	.	4	38.263	21 11.36	12.99	4.09	29 21.58	31 10 58.4
54	9	. .	40.5	. .	. .	. .	. .	. .	31 16.69	32.22	0.47	.	5	49.438	9 31.59	13.16	1.49	30 44.00	30 59 16.2
55	10	. .	. .	. .	36.	. .	. .	. .	31 35.88	32.22	0.47	.	5	48.709	10 18.11	13.20	1.66	31 3.19	31 0 3.0
56	8	. .	. .	35.8	. .	. .	. .	. .	32 53.95	32.23	0.45	.	4	42.133	17 9.13	13.37	3.19	32 21.27	31 6 55.7
57	10	. .	. .	43.5	. .	. .	. .	. .	33 1.71	32.23	0.48	.	5	50.982	7 55.00	13.39	1.13	32 29.00	30 57 39.5
58	10	. .	54.8	. .	. .	. .	. .	. .	35 31.02	32.24	0.47	.	3	39.000	20 34.72	13.72	3.91	34 58.31	31 10 22.3
59	6	. .	. .	. .	. .	54.	. .	. .	35 35.94	32.24	0.45	.	3	30.898	29 3.66	13.73	5.79	35 3.25	18 53.2
60	8	. .	. .	. .	. .	48.	. .	. .	36 29.94	32.24	0.45	.	3	29.608	30 24.72	13.85	6.09	35 57.25	20 14.7
61	9	. .	. .	. .	. .	. .	42.	. .	37 6.03	32.24	0.45	.	3	26.612	33 32.56	13.93	6.79	36 33.34	23 23.3
62	7	. .	. .	34.5	. .	. .	. .	. .	38 10.75	32.25	0.46	.	3	30.394	29 34.90	14.06	5.91	37 38.04	31 19 24.9
63	8	. .	. .	. .	. .	. .	22.	. .	38 46.03	32.25	0.50	.	6	50.139	8 48.72	14.14	1.33	38 13.28	30 58 34.2
64	10	. .	. .	. .	29.	. .	. .	. .	41 28.89	32.26	0.54	.	5	54.108	4 39.27	14.50	0.42	40 56.09	30 55 24.2
65	7	. .	47.	. .	. .	41.5	. .	. .	43 23.35	32.27	0.50	V.	3	34.823	24 56.79	14.75	4.88	43 50.58	31 14 46.4
66	7.8	. .	23.	41.	. .	. .	. .	. .	45 59.17	32.28	0.51	III.	3	34.442	25 21.29	15.10	4.97	45 26.38	15 11.4
67	7	. .	2.	20.2	38.	. .	. .	. .	46 38.13	32.28	0.51	IV.	3	34.425	25 22.55	15.18	4.98	46 5.34	15 12.7
68	7	. .	18.	36.5	. .	. .	. .	. .	47 54.45	32.28	0.50	III.	3	24.830	35 24.10	15.34	7.21	47 21.67	25 16.7
69	8	. .	. .	. .	46.	. .	. .	. .	48 45.85	32.29	0.51	.	3	29.793	30 12.92	15.46	6.05	48 13.05	20 4.4
70	7.6	. .	. .	. .	31.	. .	. .	. .	49 30.86	32.29	0.54	.	4	40.650	18 42.70	15.57	3.52	48 58.03	8 31.8
71	9	. .	. .	8.	. .	. .	. .	. .	52 26.10	32.30	0.52	.	2	26.059	34 1.29	15.94	6.93	51 53.28	23 54.2
72	9	. .	. .	. .	. .	10.8	. .	. .	52 52.86	32.30	0.56	.	4	47.092	11 58.84	15.99	2.02	52 20.00	1 46.9
73	8	. .	. .	17.	. .	. .	. .	. .	54 35.17	32.31	0.51	.	2	15.820	44 43.49	16.23	9.35	54 2.35	34 39.1
74	8	. .	. .	. .	. .	. .	5.	. .	54 28.97	32.31	0.52	.	2	20.112	40 15.54	16.22	8.33	53 56.14	30 10.1
75	8	. .	. .	49.	. .	. .	. .	. .	56 7.17	32.31	0.58	.	4	44.200	14 59.47	16.43	2.71	55 34.28	4 58.6
76	8	. .	. .	46.5	. .	. .	. .	. .	57 4.64	32.31	0.54	.	6	20.447	39 51.26	16.56	8.25	56 31.79	29 46.1
77	8	. .	. .	8.8	. .	. .	. .	. .	58 26.90	32.32	0.57	.	3	33.540	26 17.83	16.72	5.19	57 54.01	16 9.7
78	9	. .	. .	. .	. .	. .	8.	. .	7 58 32.04	32.32	0.58	.	4	41.432	17 54.45	16.74	3.35	7 57 59.14	7 44.5
79	8	. .	29.	47.	. .	. .	. .	. .	8 2 5.27	32.33	0.53	.	2	15.739	44 48.57	17.23	9.38	8 1 32.41	34 45.2
80	9	. .	. .	. .	34.8	. .	. .	. .	2 34.68	32.33	0.60	.	4	47.773	11 15.59	17.29	1.87	2 1.75	1 4.8
81	6	. .	. .	. .	. .	4.	21.	. .	3 45.52	32.34	0.59	.	2	37.028	22 34.01	17.44	4.38	3 12.59	12 25.8
82	8	. .	. .	. .	. .	. .	19.	. .	5 42.92	32.34	0.55	.	2	14.894	45 42.69	17.72	9.58	5 10.03	35 40.0
83	6	. .	16.	. .	. .	. .	. .	. .	7 52.42	32.35	0.55	.	2	8.416	52 27.34	17.99	11.19	7 19.52	42 26.5
84	5	. .	. .	56.	14.	. .	. .	. .	8 13.97	32.35	0.60	IV.	3	32.360	27 32.12	18.04	5.48	7 41.02	17 25.6
85	5	. .	. .	. .	48.	6.2	24.	. .	8 47.90	32.35	0.55	.	2	9.473	51 22.30	18.11	10.89	8 15.00	41 21.3
86	8	. .	. .	. .	. .	24.5	. .	. .	10 6.29	32.35	0.58	.	3	19.072	41 25.61	18.29	8.62	9 33.36	31 22.5
87	9	. .	. .	. .	. .	. .	19.	. .	10 43.03	32.35	0.63	.	6	42.518	16 47.11	18.37	3.18	10 10.05	6 38.7
88	10	. .	. .	. .	. .	. .	59.	. .	12 22.88	32.36	0.57	.	2	10.208	50 36.77	18.60	10.72	11 49.95	40 36.1
89	9	. .	. .	54.	. .	. .	. .	. .	14 12.09	32.36	0.63	.	3	28.779	31 16.35	18.83	6.29	13 39.10	21 11.5
90	9	. .	. .	. .	55.	13.	. .	. .	14 54.84	32.37	0.63	.	2	18.658	41 46.11	18.93	8.71	14 21.84	31 43.7
91	9	. .	. .	8.	. .	. .	. .	. .	16 26.17	32.37	0.60	.	2	16.360	44 9.87	19.13	9.25	15 53.20	34 8.3
92	8	. .	. .	. .	49.	. .	. .	. .	16 48.88	32.37	0.62	.	3	23.599	36 41.63	19.17	7.52	16 15.89	26 38.3
93	7	. .	. .	. .	. .	. .	53.5	. .	17 17.54	32.37	0.67	.	4	41.495	17 50.44	19.26	3.32	16 44.50	7 43.0
94	9	. .	. .	. .	54.	. .	. .	. .	18 53.86	32.37	0.67	.	4	39.679	19 43.64	19.45	3.74	18 20.82	9 36.8
95	6	. .	. .	. .	43.	. .	. .	. .	19 42.89	32.38	0.64	.	3	23.002	37 19.02	19.58	7.67	19 9.87	27 16.3
96	6	. .	. .	. .	35.	. .	. .	. .	20 34.95	32.38	0.61	.	2	9.843	50 58.85	19.68	10.81	20 1.96	40 59.3
97	6	. .	. .	. .	36.	. .	. .	. .	21 35.95	32.38	0.62	.	2	9.190	51 39.98	19.81	10.98	21 2.95	41 40.8
98	5	. .	. .	. .	. .	. .	23.	. .	8 21 47.04	−32.38	−0.69	.	4	38.332	−21 8.98	−19.83	− 4.07	8 21 13.97	− 31 11 2.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(231) 97. Right ascension 2^s discordant from Mural February 19, 1849, and Transit March 23, 1849; perhaps T. IV should be 38^s.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 231. FEBRUARY 23. S. $D_o = -30° 49' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	3.4	..	..	24.	42.5	..	19.	..	8 24 42.51	−32.39	−0.63	.	2	11.265	−49 29.93	−20.24	−10.48	8 24 9.49	− 31 39 30.7
100	6	..	57.	15.	..	..	..	..	26 33.18	32.39	0.70	.	4	37.095	22 25.29	20.48	4.36	26 0.09	11 20.1
101	8.9	..	..	15.	33.	..	..	..	8 27 33.03	−32.40	−0.73	IV.	4	47.518	−11 31.80	−20.61	− 1.91	8 26 59.90	− 31 1 24.3

ZONE 232. MARCH 7. C. $D_o = -34° 35' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	6	..	22.3	41.5	49.5	19.1	37.9	..	7 48 0.24	−21.47	−1.80	IV.	2	7.124	−53 49.47	− 6.84	−16.78	7 47 37.0	− 35 29 13.1
2	8.9	..	15.3	34.3	..	..	30.5	..	51 53.10	21.48	1.26	III.	5	45.262	13 54.20	7.39	5.61	51 30.4	34 49 7.2
3	8.9	..	20.8	39.2	57.8	16.3	35.5	..	51 57.97	21.48	1.39	IV.	3	36.274	23 26.53	7.40	8.18	51 35.1	58 42.1
4	8.9	..	..	..	48.5	7.3	26.3	..	53 48.56	21.49	1.30	IV.	4	40.689	18 40.26	7.65	6.91	53 25.8	34 53 54.8
5	9	..	..	..	..	4.2	23.	..	54 45.41	21.50	1.45	V.	3	29.843	30 9.79	7.78	10.05	54 22.4	35 5 27.6
6	9	..	..	..	..	..	47.2	..	55 9.68	21.50	1.30	VI.	4	39.524	19 54.13	7.84	7.26	54 46.9	34 55 9.2
7	8.9	..	..	..	14.	32.5	51.5	..	56 13.84	21.50	1.37	IV.	3	36.974	22 42.42	7.98	7.98	55 51.0	57 58.4
8	9	..	..	..	..	..	19.2	..	56 41.68	21.51	1.30	VI.	4	41.238	18 6.56	8.05	6.75	56 18.9	53 21.4
9	9	..	..	..	..	8.5	26.5	..	7 57 49.40	21.52	1.10	V.	5	53.784	4 59.67	8.21	3.16	7 57 26.8	40 11.0
10	7	..	4.4	23.1	42.1	0.4	..	..	8 2 41.98	21.53	1.19	IV.	4	47.651	11 23.31	8.89	4.88	8 2 19.3	34 46 37.1
11	6.7	..	15.1	33.5	52.5	11.4	..	..	3 52.56	21.54	1.35	IV.	3	34.024	25 47.52	9.06	8.84	3 29.7	35 1 5.4
12	9.10	..	..	..	53.5	..	..	..	4 53.38	21.54	1.50	IV.	3	23.262	37 2.90	9.19	11.96	4 30.3	12 24.1
13	9.10	..	..	..	..	27.2	..	..	5 8.28	21.55	1.46	V.	3	26.368	33 48.05	9.23	11.08	4 45.3	9 8.4
14	7	..	..	..	36.2	55.3	14.5	..	6 36.40	21.55	1.60	IV	2	16.270	44 16.02	9.42	14.05	6 13.3	19 39.5
15	8	..	..	..	..	9.5	..	..	6 50.48	21.55	1.58	V.	2	18.561	41 52.64	9.47	13.36	6 27.3	35 17 15.5
16	9	..	..	..	..	55.2	..	..	7 36.40	21.56	1.28	V.	3	38.185	21 26.55	9.57	7.63	7 13.6	34 56 43.8
17	9.10	..	..	..	..	..	42.3	..	8 4.78	21.56	1.24	VI.	3	39.665	19 53.50	9.62	7.21	7 42.0	35 55 10.3
18	7	..	..	..	..	..	7.3	..	8 29.77	21.56	1.12	VI.	4	48.908	10 4.93	9.69	4.55	8 7.1	34 45 19.2
19	7	..	..	..	..	..	..	..	9	21.57	1.34	VII.	3	32.874	26 59.18	9.8	9.16	9	35 2 18.2
20	8	..	..	..	..	..	..	..	10	21.57	1.51	VII.	2	21.536	38 46.22	10.0	12.48	10	14 8.6
21	8	..	..	..	..	..	32.	..	10 54.28	21.57	1.65	VI.	2	10.673	50 7.48	10.03	15.74	10 31.1	35 25 33.3
22	6.7	..	..	..	56.2	15.2	33.5	..	12 56.14	21.58	1.29	IV.	3	35.854	23 52.64	10.31	8.30	12 33.3	34 59 11.2
23	9	..	..	..	..	40.5	59.3	..	14 21.76	21.59	1.16	V.	4	43.699	15 32.74	10.50	6.06	13 59.0	34 50 49.3
24	9.10	..	56.1	15.3	34.	53.1	..	..	17 34.10	21.60	1.53	IV.	2	16.766	43 44.72	10.96	13.93	17 11.0	35 19 9.6
25	8.9	..	9.	28.	46.2	5.3	..	..	18 46.56	21.60	1.28	IV.	3	33.606	26 13.82	11.12	8.96	18 23.7	1 33.9
26	9	..	..	..	30.3	49.3	..	..	19 30.28	21.61	1.36	IV.	3	28.154	31 55.95	11.21	10.55	19 7.3	7 17.7
27	9.10	..	..	..	10.2	29.1	48.	..	20 10.21	21.61	1.42	IV.	3	23.278	37 1.89	11.31	11.99	19 47.2	12 25.2
28	9.10	..	55.3	..	33.4	52.3	..	..	24 30.28	21.63	1.27	IV.	3	32.318	27 34.95	11.91	9.32	24 10.4	2 56.2
29	10	..	..	..	..	..	25.3	..	24 47.67	21.63	1.46	VI.	2	18.877	41 32.81	11.95	13.27	24 24.6	35 16 58.0
30	9	..	..	..	..	..	10.5	..	25 32.97	21.63	1.01	VI.	5	49.778	9 11.19	12.04	4.30	25 10.3	34 44 27.5
31	10	..	..	..	..	..	47 ?	..	26 9.47	21.64	0.98	VI.	5	52.531	6 18.52	12.12	3.52	25 46.8	41 34.2
32	9	..	..	41.3	0.	18.7	..	..	32 0.03	21.65	1.03	IV.	4	46.361	12 44.48	12.92	5.26	31 37.4	48 2.7
33	2	..	59.2	18.2	36.3	55.5	14.1	..	34 36.73	21.66	1.00	IV.	4	47.672	11 22.01	13.28	4.87	34 14.1	34 46 40.2
34	9	..	..	..	54.5	..	32.3	..	35 54.51	21.66	1.51	IV.	2	10.829	49 57.01	13.45	15.70	35 31.3	35 24 26.2
35	8	..	..	10.5	29.1	..	7.3	..	37 29.39	21.67	1.49	IV.	2	11.767	48 58.25	13.66	15.41	37 6.2	24 27.3
36	10	..	..	48.8	7.	..	..	..	41 7.27	21.68	1.18	IV.	3	32.778	27 5.63	14.15	9.19	40 44.4	35 2 9.0
37	10	..	..	..	..	52.7	11.2	..	41 33.80	21.68	1.06	V.	4	40.434	18 56.82	14.21	6.98	41 11.1	34 54 18.0
38	9.10	..	..	..	..	44.7	..	..	42 25.77	21.68	1.27	V.	3	25.079	35 8.79	14.33	11.45	42 2.8	35 10 34.6
39	9.10	..	..	..	37.2	..	15.	..	43 37.27	21.68	1.03	IV.	5	44.185	15 2.17	14.48	5.89	43 14.6	34 50 22.5
40	7.8	..	..	..	52.5	11.6	30.2	..	44 52.48	21.69	1.45	IV.	2	13.725	46 55.46	14.65	14.83	44 29.3	35 22 24.9
41	10	..	..	59.2	..	..	..	..	46 18.16	21.69	0.97	III.	5	45.932	13 11.96	14.84	5.38	45 55.5	34 48 32.2
42	10	..	..	..	..	53.	11.5	..	8 46 34.16	−21.69	−0.86	V.	5	54.598	− 4 8.70	−14.87	− 2.92	8 46 11.6	− 34 39 26.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(232) 1. Time of transit over T. IV assumed as 59s.5 instead of 49s.5.

(232) 22. Declination differs 10′ from B. A. C. 2794.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 232	Mar. 7, 7 0	93 54 58.5	61.6	66.5	51.4	60.4	46.6	57.50	..	..	..	44.3	38.0	45.7
	7 45	..	..	..	..	..	..	..	29.988	48.4	46.7			
	8 0	..	..	..	..	..	..	..	..	..	46.2			
	8 20	..	..	..	..	..	..	..	30.010	48.	45.1			
	8 38	..	..	..	..	..	..	..	30.012	47.6	45.2			
	9 0	..	..	..	..	..	..	..	30.018	47.4	44.4			
	9 20	..	..	..	..	..	..	..	..	..	44.0			
	9 40	58.1	61.4	66.6	51.6	60.4	46.6	57.45	..	..	43.7			
	9 53	..	..	..	..	..	..	..	30.026	46.5	43.	..	46.3	45.

[(232) 19. Precedes 18. 20s.]

ZONE 232. MARCH 7. C. $D_0 = -34°\ 35'.0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
43	9.10	. .	. .	. .	. .	2.8	21.3	. .	8 47 43.90	−21.70	−1.04	V.	3	40.026	−19 30.96	−15.02	− 7.10	8 47 21.2	− 34 54 53.1
44	8.9	. .	. .	. .	. .	47.2	. .	. .	48 28.34	21.70	1.18	V.	3	30.046	29 57.18	15.13	9.99	48 5.5	35 5 22.3
45	9	. .	. .	. .	. .	. .	49.2	. .	49 11.68	21.70	1.00	VI.	4	38.656	20 48.46	15.24	7.50	48 49.0	34 56 11.2
46	9.10	. .	. .	55.4	14.2	33.3	. .	. .	52 14.25	21.71	1.42	IV.	2	11.125	49 38.57	15.63	15.62	51 51.1	35 25 9.8
47	9.10	. .	20.3	. .	39.	7.2	. .	. .	53 38.32	21.71	0.86	IV.	5	50.527	8 24.13	15.82	4.07	53 15.75	34 43 44.0
48	8.9	. .	. .	29.5	. .	7.	25.2	. .	55 48.12	21.72	0.94	IV.	4	44.125	15 4.68	16.10	5.89	55 25.5	34 50 26.7
49	8	. .	. .	. .	. .	44.	2.8	. .	8 56 25.20	21.72	1.15	V.	3	29.414	30 36.95	16.18	10.17	56 2.3	35 6 3.3
50	8.9	. .	. .	. .	. .	. .	57.8	. .	9 0 20.03	21.73	1.45	VI.	2	6.636	54 20.52	16.70	16.96	8 59 56.9	29 54.2
51	9.10	. .	18.8	. .	56.4	. .	. .	. .	2 56.45	21.73	1.13	IV.	3	28.678	31 22.95	17.03	10.40	9 2 33.6	35 6 50.4
52	8	. .	. .	. .	. .	27.3	. .	. .	3 8.61	21.73	0.82	V.	5	49.684	9 17.10	17.07	4.31	2 46.1	34 44 38.5
53	8.9	. .	. .	. .	. .	. .	52.5	. .	3 14.97	21.73	0.80	VI.	5	51.718	7 9.43	17.08	3.72	2 52.4	34 42 30.2
54	9.10	. .	. .	. .	. .	3.	21.5	. .	4 43.91	21.74	1.28	V.	2	17.572	42 54.67	17.27	13.67	4 20.9	35 18 25.6
55	8.9	. .	. .	. .	45.2	4.2	23.1	. .	5 45.31	21.74	1.13	IV.	3	27.456	32 39.78	17.40	10.75	5 22.4	8 7.9
56	9	. .	. .	. .	49.3	8.4	27.3	. .	6 49.49	21.74	1.07	IV.	3	31.278	28 40.00	17.55	9.62	6 26.7	4 7.2
57	10	. .	. .	. .	. .	59.2	. .	. .	7 40.11	21.75	1.31	V.	2	14.467	46 9.48	17.66	14.63	7 17.1	21 41.8
58	8.9	. .	. .	46.	4.8	24.2	42.5	. .	9 4.91	21.75	1.28	IV.	2	15.610	44 57.35	17.85	14.27	8 41.9	35 20 29.5
59	10	. .	. .	. .	. .	. .	45.2	. .	10 7.67	21.75	0.78	VI.	5	50.757	8 9.75	17.93	4.00	10 45.1	34 43 31.7
60	8	. .	25.2	44.	3.1	. .	. .	. .	12 2.95	21.75	1.04	IV.	3	31.568	28 1.75	18.17	9.55	11 40.2	35 3 29.5
61	9	. .	. .	. .	. .	27.3	46.2	. .	12 8.64	21.75	0.77	V.	5	50.292	8 39.40	18.19	4.10	11 46.1	34 44 1.7
62	9	. .	. .	. .	. .	. .	22.	. .	12 44.47	21.75	1.06	VI.	3	29.364	30 39.97	18.26	10.20	12 21.7	35 6 8.4
63	8	. .	. .	53.3	12.3	31.1	49.4	. .	15 12.16	21.75	0.87	IV.	4	42.598	16 40.52	18.59	6.32	14 49.5	34 52 5.4
64	8	. .	. .	. .	24.3	43.	1.5	. .	15 24.15	21.75	0.75	V.	5	50.970	7 56.38	18.61	3.93	15 1.7	43 18.9
65	8	. .	. .	45.1	3.3	22.5	41.2	. .	17 3.65	21.76	0.87	IV.	4	41.946	17 21.31	18.84	6.53	16 41.0	34 52 46.7
66	8.9	. .	. .	55.5	. .	33.2	51.8	. .	19 14.27	21.76	1.15	IV.	2	20.206	40 9.07	19.19	12.90	18 51.4	35 15 41.1
67	9	. .	. .	. .	32.2	51.	. .	. .	19 32.04	21.76	1.20	IV.	2	18.395	42 2.73	19.22	13.45	19 9.1	17 35.4
68	8.9	. .	. .	. .	15.7	34.9	53.5	. .	20 15.77	21.76	1.20	IV.	2	16.725	43 47.29	19.31	13.96	19 52.8	35 19 20.5
69	9	. .	. .	. .	. .	22.2	41.	. .	21 3.22	21.76	1.23	V.	2	14.851	45 45.14	19.42	14.52	20 40.2	34 21 19.1
70	8.9	. .	. .	35.2	53.8	. .	. .	. .	22 53.89	21.76	0.92	IV.	3	37.462	22 11.98	19.65	7.82	22 31.2	34 57 39.4
71	3	. .	. .	. .	26.3	45.2	4.2	. .	23 26.31	21.77	1.18	IV.	2	18.184	42 15.91	19.72	13.50	23 3.4	35 17 49.1
72	9	. .	43.2	2.	. .	39.5	. .	. .	25 20.86	21.77	1.13	IV.	2	19.808	40 33.86	19.97	13.02	24 58.0	16 6.9
73	6.7	. .	. .	21.5	40.2	59.2	17.5	. .	25 40.19	21.77	0.96	IV.	3	32.465	27 25.53	20.01	9.29	25 17.5	2 54.8
74	9	. .	. .	. .	. .	. .	4.2	. .	26 26.52	21.77	1.20	VI.	2	14.705	47 54.55	20.12	14.57	26 3.6	35 23 29.2
75	9.10	. .	. .	. .	44.8	. .	22.	. .	27 44.57	21.77	0.93	IV.	3	33.406	26 26.48	20.29	9.01	27 21.9	34 51 55.8
76	7	. .	. .	1.8	20.8	38.7	58.3	. .	29 20.47	21.77	1.03	IV.	3	26.305	33 52.01	20.51	11.09	28 57.7	35 9 23.6
77	10	. .	. .	. .	38.7	. .	16.3	. .	29 38.65	21.77	1.03	IV.	3	26.778	33 22.07	20.54	10.96	29 15.9	8 53.6
78	9	. .	. .	. .	. .	. .	58.2	. .	30 20.51	21.77	1.19	VI.	2	14.343	46 17.44	20.63	14.68	29 57.5	21 52.8
79	7	. .	. .	. .	36.3	. .	14.2	. .	31 36.37	21.77	1.23	IV.	2	10.963	49 48.67	20.79	15.68	31 13.4	35 25 25.1
80	9	. .	. .	. .	. .	40.2	58.9	. .	32 21.44	21.77	0.69	V.	5	49.061	9 56.28	20.89	4.58	31 59.0	34 45 21.7
81	9.10	. .	. .	35.2	54.2	. .	. .	. .	33 54.19	21.78	1.21	IV.	2	11.446	49 18.57	21.09	15.54	33 31.2	35 24 55.2
82	9	. .	. .	. .	44.8	3.5	. .	. .	34 44.60	21.78	1.07	IV.	3	21.192	39 12.69	21.18	12.61	34 21.8	15 46.5
83	8.9	. .	. .	. .	. .	36.3	54.8	. .	35 17.17	21.78	1.15	V.	2	15.123	45 28.21	21.28	14.44	34 54.2	35 21 3.9
84	9	. .	. .	14.4	12.2	. .	20.3	. .	36	21.78	. .	IV.	5	41.041	18 19.36	21.4	6.79	35	34 53 47.6
85	8	. .	. .	. .	24.6	43.6	22.4	. .	36 24.73	21.78	0.73	IV.	5	45.494	13 40.02	21.42	5.49	36 2.2	49 6.9
86	9	. .	. .	. .	. .	. .	. .	. .	37	21.78	. .	VII.	4	36.884	22 39.60	21.4	7.97	37	34 58 9.1
87	8	. .	. .	43.8	2.5	21.5	40.4	. .	40 2.61	21.78	0.99	IV.	3	25.545	34 39.62	21.90	11.31	39 39.8	35 10 12.8
88	10	. .	. .	. .	35.2	. .	. .	. .	42 35.05	21.78	0.96	IV.	3	27.985	32 6.42	22.22	10.60	42 12.3	7 39.2
89	9	. .	. .	. .	20.	38.8	57.4	. .	43 19.82	21.78	1.04	IV.	2	20.078	40 17.05	22.32	12.95	42 57.0	16 52.3
90	10	. .	. .	. .	2.8	21.3	. .	. .	47 2.50	21.78	1.02	IV.	2	20.117	40 14.59	22.81	12.94	46 39.7	35 15 50.3
91	9	. .	16.8	36.	54.8	13.3	32.3	. .	9 48 54.70	−21.78	−0.74	IV.	3	39.664	−19 53.69	−23.04	− 7.18	9 48 32.2	− 34 55 23.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(232) 47. Transits over T.'s III and V assumed as $0^s.3$ and 57^s, not $20^s.3$ and 7^s, to agree with Transit Z., March 7, 1849.

(232) 84. The only means of harmonizing these transits is to suppose transit over T. II recorded over T. III, and as $34^s.4$, not $14^s.4$; and transit over T. VI as $50^s.3$ and not $20^s.3$.

(232) 85. Time of transit over T. VI assumed as $2^s.4$ instead of $22^s.4$.

ZONE 232. MARCH 7. C. $D_0 = -34° 35' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
92	10	. .	. .	31.3	50.5	. .	. .	. .	9 48 50.29	−21.78	−0.74	V.	3	39.869	−19 40.69	−23.03	− 7.13	9 48 27.8	− 34 55 10.9
93	9.10	. .	. .	. .	56.2	. .	34.	. .	50 56.27	21.78	0.79	IV.	3	36.376	23 20.13	23.30	8.13	50 33.7	58 51.6
94	9.10	. .	. .	59.3	. .	. .	. .	. .	52 18.28	21.78	1.07	III.	2	15.595	44 57.73	23.49	14.29	51 55.4	35 20 35.5
95	7	. .	. .	30.2	49.2	8.2	26.4	. .	9 52 49.12	−21.78	−0.93	IV.	3	25.309	−34 51.11	−23.55	−11.38	9 52 26.4	− 35 10 26.0

ZONE 233. MARCH 12. S. $D_0 = -26° 24' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	37.	. .	. .	. .	. .	. .	8 26 11.75	−22.94	−2.55	.	3	25.149	−35 3.96	− 2.20	− 8.83	8 25 46.3	− 26 59 15.0
2	10	. .	. .	. .	. .	. .	28.	. .	25 53.56	22.94	2.52	.	3	28.272	31 48.54	2.16	8.31	25 28.1	55 59.0
3	8	. .	0.5	17.	. .	. .	. .	. .	28 34.81	22.95	2.24	.	4	47.972	11 2.61	2.50	4.93	28 9.6	26 35 10.0
4	10	. .	. .	. .	. .	23.	. .	. .	32 5.53	22.97	2.54	.	2	16.772	43 44.72	2.93	10.31	31 40.0	27 7 58.0
5	9	. .	. .	23.	. .	57.8	. .	. .	33 40.38	22.98	2.42	.	3	23.810	36 28.27	3.13	9.08	33 15.0	27 0 40.5
6	8	. .	. .	. .	. .	47.5	. .	. .	34 30.26	22.98	2.21	.	5	39.888	19 31.90	3.22	6.27	34 5.1	26 43 41.8
7	8	. .	. .	. .	. .	. .	51.	. .	35 16.57	22.99	2.36	.	3	29.668	30 20.83	3.32	8.06	34 51.3	26 54 32.2
8	9	. .	55.	12.5	. .	. .	4.8	. .	37 30.00	23.00	2.50	.	2	9.079	51 47.51	3.59	11.67	37 4.5	27 16 2.8
9	10	. .	. .	. .	53.2	10.5	. .	. .	38 53.14	23.00	2.20	.	4	33.345	26 21.27	3.79	7.43	38 27.9	26 50 32.5
10	11	. .	40.	. .	15.	. .	. .	. .	41 14.78	23.01	2.13	.	3	36.290	23 25.52	4.05	6.92	40 49.6	26 47 36.5
11	9	. .	. .	. .	. .	. .	58.	. .	41 23.44	23.01	2.41	.	2	11.930	48 44.65	4.07	11.13	40 58.0	27 12 59.9
12	9	. .	. .	. .	. .	3.	. .	. .	42 45.49	23.02	2.37	.	2	13.612	47 3.04	4.22	10.85	42 20.1	11 18.1
13	.	. .	. .	. .	. .	12.	. .	. .	43 54.60	23.02	2.25	.	2	21.958	38 19.43	4.37	9.40	43 29.3	2 33.2
14	4	. .	. .	. .	. .	52.	9.5	. .	44 34.73	23.02	2.33	.	2	15.498	45 4.81	4.45	10.53	44 9.4	9 19.8
15	8	. .	. .	. .	0.	. .	. .	. .	46 59.90	23.03	2.21	.	2	19.802	40 34.23	4.73	9.77	46 34.7	4 48.7
16	9	. .	26.	. .	. .	. .	35.5	. .	47 0.89	23.03	2.27	.	2	15.048	45 32.54	4.73	10.60	46 35.6	9 47.9
17	5	. .	56.	13.5	31.	. .	. .	. .	49 30.87	23.04	2.17	IV.	2	18.292	42 9.20	5.03	10.05	49 5.7	6 24.3
18	7	. .	. .	. .	32.5	50.	. .	. .	51 32.48	23.05	2.16	.	2	16.488	44 2.28	5.27	10.36	51 7.3	8 17.9
19	6	. .	7.8	25.	42.	. .	. .	. .	53 42.35	23.06	2.19	. .	2	11.078	49 1.52	5.52	11.31	53 17.1	27 13 18.4
20	9	. .	. .	. .	. .	21.2	. .	. .	55 3.88	23.06	1.96	.	3	28.503	31 34.11	5.68	8.26	54 38.9	26 55 48.0
21	9	. .	. .	. .	. .	. .	37.8	. .	56 3.23	23.06	2.14	.	2	11.540	49 13.30	5.80	11.22	55 38.0	27 13 30.3
22	8	. .	55.5	13.	. .	. .	. .	. .	58 30.32	23.07	1.59	.	5	53.303	5 29.56	6.09	3.99	58 5.7	26 29 39.6
23	9	. .	. .	29.8	. .	4.	. .	. .	8 59 46.97	23.07	1.72	.	4	39.508	19 54.50	6.23	6.35	8 59 22.2	26 44 7.1
24	9	. .	. .	44.5	. .	. .	. .	. .	9 2 1.91	23.08	1.97	.	2	15.833	44 42.95	6.49	10.48	9 1 36.9	27 8 59.9
25	9	. .	. .	. .	. .	. .	32.	. .	1 57.54	23.08	1.66	.	4	41.417	17 55.45	6.49	6.03	1 32.8	26 42 8.0
26	9	. .	. .	. .	0.5	17.	. .	. .	5 0.04	23.09	1.68	.	3	34.210	25 35.98	6.84	7.30	4 35.3	49 50.1
27	7	. .	. .	32.3	50.	8.	. .	. .	9 50.15	23.10	1.43	IV.	4	48.833	10 9.07	7.40	4.75	9 25.6	34 21.2
28	7	. .	25.	43.	. .	. .	. .	. .	12 0.05	23.11	1.44	.	4	44.178	15 0.85	7.65	5.56	11 35.5	26 39 14.1
29	9	. .	. .	33.	. .	8.5	. .	. .	13 50.72	23.11	1.74	.	2	16.193	44 20.79	7.86	10.42	13 25.9	27 8 39.1
30	8	. .	. .	. .	. .	. .	27.	. .	13 52.55	23.11	1.61	.	3	26.792	33 21.32	7.86	8.55	13 27.8	26 57 37.8
31	9	. .	. .	. .	. .	. .	57.2	. .	15 22.66	23.12	1.72	.	2	14.598	46 1.45	8.05	10.69	14 57.8	27 10 20.2
32	9	. .	. .	. .	. .	. .	24.5	. .	16 50.02	23.12	1.26	.	5	50.978	7 56.00	8.21	4.39	16 25.6	26 32 8.6
33	9	. .	. .	56.	. .	. .	. .	. .	9 19 13.31	−23.13	−1.45	.	3	31.353	−28 35.11	− 8.48	− 7.77	9 18 48.7	− 26 52 51.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.			B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	°	′	″						″	in.	°	°	°	°	°
Zone 233	Mar. 12,	8 20	85	44	58.2	60.1	66.2	53.3	59.5	46.8	57.35	29.834	51.4	43.3	49.5	48.8	50.
		8 40			. .	. .	. .	. .	. .	. .	. .	. .	. .	42.			
		9 0			. .	. .	. .	. .	. .	. .	. .	29.826	50.	42.			
		9 10			. .	. .	. .	. .	. .	. .	. .	. .	. .	42.1			
		9 19			58.2	60.1	67.0	53.3	59.5	46.2	57.38						

ZONE 234. MARCH 16. S. $D_0 = -37° 5' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7	. .	15.	35.	54.8	. .	. .	. .	7 32 54.44	−25.42	−2.41	IV.	3	25.468	−34 44.51	− 2.66	−10.68	7 32 26.6	− 37 40 37.8
2	6	. .	57.8	. .	. .	. .	. .	. .	34 37.11	25.43	2.46	.	2	8.868	51 58.67	2.89	17.02	34 9.2	57 58.6
3	6	. .	. .	38.2	. .	. .	. .	. .	34 57.85	25.43	2.46	.	2	11.635	49 6.02	2.94	15.98	34 30.0	55 4.9
4	5	. .	. .	. .	. .	13.	32.5	. .	34 53.49	25.43	2.43	VI.	3	18.636	41 52.77	2.93	13.29	34 25.6	47 49.0
5	8	. .	57.	. .	. .	. .	. .	. .	38 36.03	25.46	2.33	.	4	41.358	17 57.08	3.42	4.84	38 8.2	23 45.3
6	6	. .	. .	32.2	. .	. .	. .	. .	38 51.82	25.46	2.43	.	2	15.723	44 49.58	3.45	14.39	38 23.9	50 47.4
7	6	. .	. .	22.	. .	. .	. .	. .	39 41.49	25.47	2.36	.	3	30.790	29 10.18	3.58	8.71	39 13.7	35 2.5
8	5	. .	. .	. .	22.	. .	. .	. .	40 21.84	25.48	2.36	.	3	29.440	30 35.32	3.66	9.20	39 54.0	36 28.2
9	7	. .	. .	. .	. .	. .	50.	. .	40 11.25	25.48	2.34	.	3	33.988	25 49.59	3.65	7.52	39 43.4	31 40.8
10	6	. .	. .	. .	. .	37.	. .	. .	41 17.53	25.49	2.35	.	3	31.592	28 20.24	3.80	8.41	40 49.7	34 12.5
11	6	. .	. .	. .	. .	. .	18.	. .	41 39.26	25.49	2.31	.	4	40.878	18 28.89	3.86	5.00	41 11.5	24 17.7
12	7	. .	. .	. .	. .	. .	57.5	. .	42 18.75	25.49	2.34	.	3	29.668	30 20.71	3.94	9.12	41 50.9	36 13.8
13	7	. .	. .	38.	57.2	. .	. .	. .	43 57 38	25.50	2.41	.	2	16.719	43 47.67	4.16	14.01	43 29.5	49 45.8
14	10	. .	23.	42.	. .	. .	. .	. .	51 1 79	25.55	2.27	.	3	37.705	21 56.36	5.14	6.16	50 34.0	27 47.7
15	8	. .	32.	52.	11.	. .	49.5	. .	7 54 11.05	25.57	2.30	IV.	3	27.220	32 54.53	5.60	10.05	7 53 43.2	38 50.2
16	10	. .	20.2	40.	59.5	. .	. .	. .	8 2 59.37	25.60	2.26	IV.	3	31.409	28 31.78	6.86	8.48	8 2 31.5	34 27.1
17	7	. .	. .	. .	35.	55.	. .	. .	3 35.29	25.61	2.17	IV.	5	49.974	8 58.65	6.95	1.67	3 7.5	14 47.3
18	10	. .	. .	. .	. .	. .	48.	. .	4 9.26	25.62	2.19	.	4	43.416	15 49.87	7.02	4.09	3 41.5	21 41.0
19	9	. .	. .	. .	. .	. .	50.2	. .	5 11.37	25.62	2.27	.	2	22.820	37 25.48	7.17	11.72	4 43.5	43 24.4
20	9	. .	. .	. .	. .	. .	26.	. .	5 47.11	25.63	2.30	.	2	16.875	43 38.38	7.26	13.94	5 19.2	49 39.6
21	7	. .	. .	30.	49.	. .	. .	. .	7 49.22	25.64	2.16	.	3	47.002	12 13.10	7.56	2.77	7 21.4	18 3.4
22	9	. .	. .	. .	43.	. .	. .	. .	8 42.87	25.64	2.16	.	4	48.454	10 33.05	7.69	2.27	8 15.1	16 23.0
23	10	. .	. .	. .	. .	. .	29.	. .	8 50.26	25.64	2.15	.	4	51.093	7 47.91	7.71	1.28	8 22.5	13 36.9
24	10	. .	. .	. .	. .	. .	20.	. .	9 41.26	25.65	2.16	.	4	47.738	11 18.37	7.84	2.50	9 13.4	17 8.7
25	11	. .	36.	56.	. .	. .	. .	. .	13 15.29	25.67	2.20	.	3	36.935	22 44.61	8.36	6.45	12 47.4	28 39.4
26	9	. .	. .	. .	. .	24.	44.	. .	14 4.80	25.68	2.23	V.	2	23.655	36 33.03	8.49	11.41	13 36.9	42 32.9
27	10	. .	58.	18.	37.5	. .	. .	. .	16 37.36	25.69	2.23	IV.	2	22.814	37 25.30	8.87	11.72	16 9.4	43 25.9
28	11	. .	. .	39.5	. .	. .	. .	. .	17 59.08	25.70	2.23	.	2	20.373	39 58.10	9.08	12.63	17 31.2	45 59.8
29	7	. .	. .	. .	. .	31.6	. .	. .	18 11.94	25.70	2.24	.	2	18.153	42 18.16	9.11	13.48	17 44.0	48 20.8
30	11	. .	58.	. .	. .	55.5	. .	. .	20 36.58	25.71	2.12	.	4	45.672	13 27.53	9.47	3.25	20 8.8	19 20.3
31	7	. .	. .	35.5	56.	. .	. .	. .	21 55.45	25.71	2.13	IV.	3	38.365	21 15.32	9.67	5.91	21 27.6	27 10.9
32	10	. .	. .	. .	3.	. .	. .	. .	23 2.87	25.72	2.08	.	4	50.662	8 14.33	9.85	1.43	22 35.1	14 5.6
33	8	. .	27.	47.	. .	. .	. .	. .	27 6.29	25.74	2.11	III.	4	40.586	18 46.22	10.45	5.10	26 38.4	24 41.8
34	7	. .	. .	. .	45.	. .	. .	. .	27 44.86	25.74	2.17	.	3	26.218	33 57.40	10.55	10.42	27 17.0	39 58.4
35	6	. .	. .	. .	. .	31.	. .	. .	28 11.29	25.74	2.20	.	2	15.053	45 32.54	10.62	14.66	27 43.3	51 37.8
36	8	. .	. .	. .	. .	9.	. .	. .	28 49.44	25.75	2.16	.	3	25.029	35 11.86	10.71	10.86	28 21.5	41 13.4
37	8	. .	. .	24.5	. .	. .	. .	. .	30 44.08	25.76	2.17	.	3	19.696	40 46.21	11.01	12.88	30 16.2	46 50.1
38	7	. .	. .	. .	13.8	33.	. .	. .	31 13.49	25.76	2.22	.	2	10.580	50 12.82	11.09	16.38	30 45.5	56 20.3
39	9	. .	. .	. .	. .	15.5	. .	. .	31 56.12	25.76	2.09	.	5	41.872	17 27.33	11.19	4.60	31 28.3	23 23.1
40	6	. .	. .	. .	53.	13.	. .	. .	32 53.21	25.77	2.11	V.	4	36.407	23 9.52	11.35	6.65	32 25.3	29 7.5
41	10	. .	13.5	32.	52.	. .	. .	. .	35 52.10	25.78	2.17	IV.	2	14.692	45 54.80	11.79	14.79	35 24.2	52 1.4
42	11	. .	. .	. .	. .	59.	19.	. .	36 39.98	25.78	2.03	V.	5	51.422	7 28.20	11.91	1.16	36 12.2	13 21.3
43	7	. .	40.	. .	. .	. .	. .	. .	39 19.03	25.80	2.05	.	3	40.112	19 24.94	12.33	5.26	38 51.2	25 22.5
44	10	. .	. .	. .	29.2	. .	. .	. .	39 29.06	25.80	2.06	.	3	37.972	21 39.78	12.35	6.05	39 1.2	27 38.2
45	8	. .	. .	. .	. .	14.2	. .	. .	39 54.82	25.80	2.05	.	3	41.410	18 4.23	12.41	4.81	39 27.0	24 1.5
46	6	. .	. .	. .	. .	54.2	13.8	. .	40 34.96	25.80	2.03	V.	4	45.143	14 1.16	12.52	3.44	40 7.1	19 57.1
47	8	. .	. .	. .	0.2	. .	. .	. .	42 0.04	25.81	2.09	.	3	31.683	28 14.41	12.73	8.39	41 32.1	34 15.5
48	8	. .	. .	. .	. .	. .	15.8	. .	42 37.06	25.81	2.05	.	4	39.082	20 21.73	12.82	5.64	42 9.2	26 20.2
49	7	. .	. .	. .	. .	. .	5.	. .	8 43 26.26	−25.82	−2.06	. .	4	38.402	−21 4.53	−12.95	− 5.90	8 42 58.4	− 37 27 3.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

Ex. therm. assumed as 45.0.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 234	Mar. 16, 7 30	96 24 60.	63.9	69.	55.5	61.6	50.	60.00						
	7 40	. .	. .	. .	. .	. .	. .	. .	29.962	52.3	49.2	52.5	. .	50.8
	8 0	61.6	63.9	70.3	55.5	62.	50.	60.55	. .	. .	49.			
	8 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.8			
	8 40	. .	. .	. .	. .	. .	. .	. .	29.984	51.8	46.2			
	9 0	. .	. .	. .	. .	. .	. .	. .	29.988	51.6	45.5	. .	. .	. .
	9 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	43.9			
	9 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	42.8			
	10 0	61.6	64.2	69.5	55.5	62.5	50.	60.55	29.994	50.	42.2	49.5	50.3	50.

ZONE 234. MARCH 16. S. $D_0 = -37° 5' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	10	..	..	..	..	10.3	..	..	8 44 50.98	−25.82	−2.01	.	5	48.203	−10 50.18	−13.17	− 2.33	8 44 23.1	− 37 16 25.7
51	8	..	..	13.5	33.	..	..	..	47 32.93	25.83	2.07	.	3	28.082	30 57.66	13.57	9.73	47 5.0	37 1.0
52	7	..	52.8	12.	..	..	..	..	49 31.82	25.84	2.11	III.	2	16.328	44 11.81	13.88	14.17	49 3.9	50 19.9
53	6	..	..	..	0.	19.8	39.	..	50 0.07	25.84	2.09	IV.	2	20.962	39 20.27	13.95	12.41	49 32.1	45 26.6
54	8	..	..	..	..	10.2	30.	..	53 50.95	25.85	2.04	.	3	27.286	32 50.45	14.52	10.01	53 23.1	38 55.0
55	8	..	..	53.	..	..	..	..	54 12.52	25.85	2.01	.	3	35.607	24 8.07	14.58	6.93	53 44.7	30 9.6
56	9	..	41.2	..	20.	..	..	..	58 20.06	25.87	2.01	IV.	3	30.385	29 36.04	15.19	8.86	57 52.2	35 40.1
57	10	..	..	..	..	59.6	19.5	..	8 58 40.45	25.87	2.00	V.	3	33.475	26 22.15	15.24	7.71	8 58 12.6	32 25.1
58	8	..	..	..	..	47.5	..	..	9 0 27.98	25.88	2.02	V.	3	27.346	32 46.69	15.51	9.99	9 0 0.1	38 52.2
59	9	..	..	..	..	..	58.5	..	1 19.52	25.88	2.08	.	2	9.681	51 9.64	15.63	16.76	0 51.6	57 22.0
60	9	..	14.8	34.	54.	..	..	..	8 53.88	25.90	2.04	IV.	2	12.258	48 27.64	16.76	15.78	8 25.9	54 40.2
61	5.6	..	30.8	50.3	10.	29.	..	..	10 9.80	25.91	2.04	IV.	2	10.180	50 37.90	16.94	16.57	9 41.8	56 51.4
62	11	..	..	..	44.	..	..	..	11 43.86	25.91	1.92	.	4	41.962	17 20.31	17.17	4.58	10 16.0	23 22.1
63	9	..	26.8	46.2	..	..	..	..	14 5.79	25.92	1.93	III.	3	34.929	24 50.48	17.52	7.18	13 37.9	30 55.2
64	10	..	..	33.2	..	12.	..	..	14 52.75	25.92	1.87	III.	5	51.185	7 42.38	17.63	1.23	14 25.0	13 41.2
65	9	..	22.8	42.5	..	..	..	..	17 2.05	25.93	2.00	III.	2	17.209	43 16.50	17.95	13.84	16 34.1	49 28.3
66	9	..	..	30.2	..	..	..	..	17 49.74	25.93	1.96	.	3	25.300	34 54.80	18.07	10.75	17 21.8	41 3.6
67	9	..	..	13.	..	..	11.3	..	19 32.55	25.93	1.88	.	4	39.370	20 3.22	18.32	5.54	19 4.7	26 7.1
68	9.8	..	4.8	24.2	..	..	..	..	22 43.79	25.94	1.90	III.	3	32.150	27 44.99	18.78	8.20	22 16.0	33 52.0
69	9	..	..	..	..	9.	28.5	..	22 49.68	25.94	1.87	V.	4	39.135	20 18.21	18.30	5.62	22 21.9	26 22.6
70	9	..	..	39.8	..	..	..	..	24 59.34	25.94	1.92	.	3	24.203	36 3.62	19.11	11.16	24 31.5	42 13.9
71	10.9	..	..	..	..	..	50.	..	25 11.15	25.94	1.94	.	3	21.148	39 15.26	19.14	12.35	24 43.3	44 26.7
72	8	..	..	..	53.	..	..	..	26 52.86	25.95	1.90	.	3	27.058	33 4.63	19.39	10.10	26 25.0	39 14.1
73	7	..	..	..	42.5	..	..	..	27 42.46	25.95	1.97	.	2	8.538	52 20.88	19.51	17.19	27 14.5	58 37.6
74	9	..	..	..	40.5	..	..	..	28 40.36	25.95	1.84	.	4	40.182	19 12.19	19.65	5.23	28 12.6	25 17.1
75	10	..	..	..	..	43.5	..	..	29 24.11	25.96	1.84	.	4	39.735	19 40.50	19.75	5.39	28 56.3	25 45.6
76	10	..	..	3.	..	..	..	..	31 22.50	25.96	1.87	.	3	29.203	30 49.94	20.03	9.30	30 54.7	36 59.3
77	10	..	..	..	..	..	12.5	..	31 33.76	25.96	1.80	.	4	47.032	12 2.75	20.06	2.75	31 6.0	18 5.6
78	11	..	34.2	..	..	..	..	..	34 13.27	25.97	1.84	.	3	33.638	26 11.18	20.44	7.65	33 45.5	32 19.3
79	7	..	16.2	36.	55.3	..	..	..	35 55.41	25.97	1.90	IV.	2	17.592	42 53.04	20.69	13.69	35 27.5	49 7.4
80	8.7	..	42.	1.5	21.	..	..	..	39 21.11	25.98	1.90	IV.	2	13.038	47 38.60	21.16	15.43	38 53.2	53 55.2
81	9	..	..	..	..	..	20.	..	39 41.26	25.98	1.75	.	5	51.380	7 30.83	21.21	1.16	39 13.5	13 33.2
82	6	..	10.5	29.	49.	..	..	..	41 48.98	25.98	1.80	IV.	3	36.103	23 37.14	21.50	6.74	41 21.2	29 45.4
83	7	..	..	..	..	35.	54.5	..	42 15.58	25.98	1.84	V.	2	25.630	34 29.13	21.57	10.62	41 47.8	40 41.3
84	8	..	..	..	..	..	16.2	..	43 37.42	25.98	1.83	.	3	27.208	32 55.10	21.76	10.05	43 9.6	39 6.9
85	8	..	..	..	26.	..	..	..	45 25.86	25.99	1.74	.	4	44.740	14 25.96	22.01	3.56	44 58.1	20 31.5
86	6	..	..	..	..	8.8	..	..	45 49.37	25.99	1.79	.	3	36.593	23 6.45	22.06	6.57	45 21.6	29 15.1
87	7	..	..	..	58.	..	..	..	46 57.86	25.99	1.77	.	3	39.293	20 17.08	22.21	5.53	46 30.1	26 24.8
88	6	..	..	..	..	54.	13.3	..	47 34.46	25.99	1.83	V.	3	24.183	36 5.07	22.30	11.17	47 6.6	42 18.5
89	8	..	..	..	..	59.	..	..	48 39.57	25.99	1.78	.	4	36.825	22 43.04	22.45	6.47	48 11.8	28 52.0
90	7	..	..	..	25.8	45.2	..	..	50 25.63	25.99	1.84	IV.	2	18.813	41 36.26	22.70	13.27	49 57.8	47 52.2
91	8	..	51.	10.8	30.	..	..	..	55 30.08	26.00	1.73	IV.	4	42.710	16 33.42	23.38	4.32	55 2.3	22 41.1
92	10	..	..	..	..	55.5	15.	..	9 55 36.19	26.00	1.73	.	4	43.088	16 16.42	23.39	4.19	9 55 8.5	22 24.0
93	11	..	54.	..	..	..	..	..	10 0 33.06	26.00	1.73	.	3	36.180	23 31.74	24.06	6.71	10 0 5.3	29 42.5
94	9	..	19.5	39.	..	..	..	..	1 58.54	26.01	1.75	III.	3	28.572	31 29.47	24.26	9.53	1 30.8	37 43.3
95	10	..	..	30.5	50.	..	..	..	2 49.95	26.01	1.70	IV.	4	39.028	20 24.49	24.36	5.66	2 22.2	26 34.5
96	8	..	31.	50.6	..	..	..	..	6 10.09	26.01	1.68	III.	4	39.912	19 28.39	24.81	5.32	5 42.4	25 38.5
97	8	..	..	..	..	34.8	54.	..	10 6 15.30	−26.01	−1.72	V.	3	29.442	−30 35.19	−24.82	− 9.20	10 5 47.6	− 37 36 49.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

ZONE 235. MARCH 16. S. $D_0 = -34° \ 35' \ 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r	′ ″	″	″	h. m. s.	° ′ ″
1	5.4	. .	3.5	22.	41.5	. .	. .	. .	11 18 41.26	−25.84	−1.93	.	3	21.722	−38 39.31	− 4.16	−12.49	11 18 13.5	− 35 14 26.0
2	6	. .	27.5	46.3	5.2	. .	. .	. .	21 5.21	25.83	1.92	.	5	51.043	7 51.61	4.38	3.82	20 37.5	34 43 29.8
3	9	. .	. .	. .	8.	27.	. .	. .	22 8.06	25.83	1.92	.	4	44.312	14 53.00	4.48	5.78	21 40.3	50 33.3
4	7	. .	42.2	. .	20.2	. .	. .	. .	24 20.02	25.82	1.92	.	4	45.542	13 35.82	4.68	5.43	23 52.3	34 49 15.9
5	6	. .	22.	41.	. .	18.8	. .	. .	25 59.90	25.82	1.94	.	2	13.608	47 2.92	4.84	14.94	25 32.1	35 22 52.7
6	7	. .	48.5	8.	26.	. .	. .	. .	27 26.47	25.82	1.94	.	2	13.923	46 42.97	4.97	14.85	26 58.7	35 22 32.8
7	6	. .	. .	. .	19.	37.5	. .	. .	28 18.84	25.81	1.92	.	4	47.705	11 19.94	5.05	4.80	27 51.1	34 46 59.8
8	7	. .	. .	. .	39.	. .	. .	. .	29 38.90	25.81	1.94	.	2	19.733	40 38.63	5.18	13.09	29 11.2	35 16 26.9
9	8	. .	. .	. .	. .	27.2	46.	. .	30 8.48	25.81	1.92	VI.	5	49.302	9 41.26	5.22	4.29	29 40.7	34 45 20.8
10	7	. .	46.	5.	23.4	. .	. .	. .	34 23.67	25.80	1.93	.	4	48.350	10 39.63	5.60	4.60	33 56.0	34 46 19.8
11	9	. .	56.5	15.5	.	. .	. .	. .	35 34.39	25.79	1.94	.	3	26.320	33 50.88	5.71	11.10	35 6.7	35 9 37.7
12	10	. .	. .	. .	. .	. .	40.5	. .	36 2.93	25.79	1.94	.	3	24.61	35 37.46	5.75	11.60	35 35.2	11 24.8
13	9	. .	. .	. .	. .	. .	38.	. .	37 0.25	25.79	1.95	.	2	8.729	52 9.34	5.84	16.46	36 32.5	35 28 1.6
14	8	. .	. .	. .	35.5	54.	. .	. .	38 35.33	25.78	1.93	.	5	48.389	10 38.32	5.98	4.59	38 7.6	34 46 18.9
15	7.6	. .	. .	45.	4.	22.	. .	. .	40 3.62	25.78	1.94	V.	3	31.340	28 36.12	6.11	9.60	39 35.9	35 4 21.8
16	7	. .	. .	16.8	35.2	. .	. .	. .	41 35.37	25.77	1.94	.	3	26.743	33 24.33	6.25	10.99	41 7.7	9 11.6
17	7	. .	25.	44.	2.8	. .	. .	. .	47 2.81	25.76	1.95	.	3	26.573	33 35.13	6.72	11.02	46 35.1	9 22.9
18	9	. .	28.	47.	6.	. .	. .	. .	53 6.00	25.74	1.96	.	2	9.753	51 4.56	7.24	16.15	52 38.3	35 26 57.9
19	10	. .	. .	. .	28.	. .	. .	. .	54 27.88	25.73	1.95	.	5	49.778	9 10.94	7.36	4.18	54 0.2	34 44 52.5
20	10	. .	. .	. .	. .	54.	. .	. .	55 35.15	25.73	1.96	.	3	31.243	28 42.20	7.45	9.63	55 7.4	35 4 29.3
21	10.9	. .	9.	. .	. .	. .	. .	. .	57 46.78	25.72	1.95	.	5	46.072	13 2.68	7.63	5.26	57 19.1	34 48 45.6
22	6.7	. .	4.8	23.8	42.4	. .	. .	. .	11 58 42.53	25.72	1.95	.	4	43.412	15 49.62	7.70	6.02	11 58 14.9	34 51 33.3
23	6.7	. .	2.	20.8	39.8	58.6	. .	. .	12 7 39.74	25.70	1.97	.	2	13.355	47 18.84	8.42	15.05	12 7 12.1	35 23 12.3
24	5	. .	47.8	7.	. .	. .	. .	. .	10 25.84	25.68	1.97	.	2	20.601	39 43.74	8.64	12.84	9 58.2	35 15 35.2
25	8	. .	. .	. .	33.	. .	. .	. .	10 32.85	25.68	1.97	.	3	35.823	23 44.58	8.65	8.26	10 5.2	34 59 41.5
26	8	. .	31.	49.5	. .	. .	. .	. .	12 8.61	25.67	1.96	III.	4	42.453	16 49.12	8.77	6.30	11 41.0	34 52 34.2
27	9	. .	. .	52.	. .	. .	. .	. .	13 10.90	25.66	1.97	.	3	24.328	35 55.84	8.85	11.71	12 43.3	35 11 46.4
28	8	. .	. .	. .	. .	. .	2.5	. .	13 24.81	25.66	1.98	.	2	14.262	46 22.53	8.87	13.26	12 57.2	35 22 14.7
29	7	. .	. .	. .	. .	3.	21.5	. .	14 44.26	25.66	1.97	.	.	.745	5 13.	9.	3.	14 16.6	34 40 55.0
30	9	. .	8.5	27.2	. .	. .	23.7	. .	16 46.20	25.65	1.96	III.	4	46.700	12 22.44	9.13	5.07	16 18.6	34 48 6.6
31	11	. .	. .	. .	27.	46.5	. .	. .	18 27.18	25.64	1.99	IV.	2	17.069	43 25.78	9.26	13.91	17 59.5	35 19 19.0
32	10	. .	32.	50.8	. .	. .	. .	. .	21 9.75	25.63	1.98	.	3	29.789	30 12.99	9.46	10.07	20 42.1	6 2.5
33	9	. .	. .	27.2	. .	. .	. .	. .	21 46.10	25.63	1.98	.	3	26.075	34 6.12	9.51	11.19	21 18.5	9 56.8
34	10	. .	. .	. .	23.2	42.8	. .	. .	22 23.52	25.62	1.98	.	3	35.520	24 13.78	9.56	8.35	21 55.9	0 1.7
35	11	. .	. .	45.5	. .	. .	. .	. .	26 4.43	25.61	1.98	.	2	21.672	38 36.55	9.82	12.52	25 36.8	35 14 28.9
36	9.10	. .	26.8	46.	. .	. .	. .	. .	28 4.76	25.60	1.98	III.	3	35.743	23 59.41	9.96	8.29	27 37.2	34 59 47.7
37	11	. .	. .	14.5	33.8	. .	. .	. .	28 33.53	25.60	1.98	IV.	3	35.705	24 2.05	10.00	8.28	28 6.0	34 59 50.3
38	7.8	. .	57.8	16.5	35.6	. .	. .	. .	35 35.52	25.57	1.99	IV.	3	24.900	35 19.89	10.49	11.54	35 8.0	35 11 11.9
39	8.9	. .	14.	32.8	52.	. .	. .	. .	36 51.91	25.56	2.00	IV.	2	12.752	47 56.47	10.58	15.22	36 24.4	35 23 52.3
40	8.9	. .	48.2	. .	27.5	. .	. .	. .	12 40 25.96	−25.54	−1.98	IV.	4	41.852	−17 27.20	−10.82	− 6.49	12 39 58.4	− 34 53 14.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(235) 28. Right ascension differs $4^s.4$ from Mural Z. April 2, 1849.

(235) 29. Micrometer reading assumed as $53^r.745$.

(235) 40. Transit over T. IV rejected.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 235	March 16, 11 15	93 54 60.	62.8	66.8	54.3	60.5	47.8	58.70	30.000	49.	39.	49.8	50.	
	11 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	38.9			
	12 0	60.	62.8	66.8	54.3	60.8	47.2	58.65	29.990	49.3	38.2			
	12 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	38.			
	12 40	60.	62.8	66.8	54.3	60.8	46.9	58.60	. .	. .	37.4			

ZONE 236. MARCH 19. C. $D_0 = -30° 14' 50''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	54.5	12.8	. .	48.	. .	11 2 12.49	−26.50	−0.61	IV.	5	43.264	−16 6.25	− 0.55	− 2.16	11 1 45.4	− 30 30 59.0
2	9.10	. .	33.4	. .	9.2	27.	. .	. .	4 9.17	26.50	0.60	IV.	3	25.215	35 0.31	0.74	− 6.05	3 42.1	49 57.1
3	9	. .	7.5	26.	43.8	. .	. .	. .	5 43.76	26.50	0.62	IV.	5	54.465	4 17.35	0.90	+ 0.23	5 16.6	19 8.0
4	9	. .	44.2	2.8	20.7	38.3	. .	. .	7 20.50	26.50	0.60	IV.	3	40.948	18 32.97	1.06	− 2.64	6 53.4	30 33 26.7
5	10	. .	. .	. .	45.2	. .	22.	. .	8 45.63	26.50	0.57	IV.	2	14.533	46 4.90	1.21	8.38	8 18.6	31 1 4.5
6	9	. .	43.4	1.6	19.6	. .	. .	. .	11 19.50	26.50	0.59	III.	5	44.531	14 40.09	1.47	1.87	10 52.4	30 29 33.4
7	9	. .	. .	. .	. .	37.8	. .	. .	11 19.71	26.50	0.57	V.	2	19.474	40 55.43	1.47	7.29	10 52.6	55 54.2
8	9	. .	. .	. .	. .	14.2	. .	. .	11 56.33	26.50	0.59	V.	4	41.925	17 23.00	1.52	2.44	11 29.2	32 17.0
9	10	. .	21.2	. .	57.	. .	. .	. .	13 57.03	26.49	0.59	IV.	4	44.788	14 22.94	1.72	1.82	13 29.9	29 16.5
10	9	. .	. .	22.8	40.	. .	. .	. .	14 40.36	26.49	0.58	IV.	4	44.645	14 31.99	1.80	1.84	14 13.3	29 25.6
11	8.9	. .	. .	. .	. .	1.3	19.4	. .	14 43.52	26.49	0.57	V.	3	32.737	27 8.27	1.80	4.40	14 16.4	42 4.5
12	10	. .	23.	. .	59.1	. .	. .	. .	16 59.02	26.49	0.57	IV.	3	25.661	34 32.29	2.02	5.95	16 32.0	49 30.3
13	9.10	. .	. .	. .	20.	37.8	56.	. .	17 19.93	26.49	0.55	IV.	2	18.535	41 53.90	2.05	7.50	16 52.9	56 53.5
14	9.10	. .	. .	56.9	14.6	. .	. .	. .	21 14.73	26.48	0.57	IV.	5	49.188	9 48.11	2.43	0.90	20 47.7	30 24 41.4
15	9	. .	. .	. .	35.3	53.2	11.4	. .	21 35.26	26.48	0.53	IV.	2	13.757	46 53.45	2.46	8.58	21 8.3	31 1 54.5
16	10	. .	. .	54.?	11.8	. .	47.3	. .	25 11.75	26.48	0.55	IV.	4	39.763	19 38.30	2.80	2.89	24 44.7	30 34 34.0
17	10	. .	42.8	. .	. .	36.2	54.3	. .	25 18.56	26.48	0.55	V.	4	41.099	18 14.96	2.81	2.61	24 51.5	30 33 10.4
18	3	. .	. .	. .	. .	. .	41.3	. .	26 5.42	26.48	0.52	VI.	2	13.971	46 40.65	2.88	8.52	25 38.4	31 1.42.2
19	10	. .	19.3	37.3	55.2	. .	. .	. .	29 55.28	26.47	0.52	IV.	2	19.888	40 28.83	3.24	7.21	29 28.3	30 55 29.3
20	8	. .	. .	29.8	47.3	5.	23.2	. .	30 47.42	26.47	0.55	IV.	5	50.649	8 16.64	3.31	0.55	30 20.4	23 10.5
21	9.10	. .	. .	. .	. .	11.	29.	. .	32 53.22	26.46	0.54	IV.	5	51.182	7 42.95	3.49	0.44	32 26.2	22 36.9
22	9	. .	40.5	58.2	16.2	34.2	. .	. .	37 16.25	26.46	0.51	IV.	3	27.508	32 36.47	3.91	5.54	36 49.3	47 35.9
23	8.9	. .	. .	. .	0.1	18.3	. .	. .	38 0.10	26.45	0.50	IV.	2	18.820	41 35.82	3.98	7.44	37 33.1	56 37.2
24	10	. .	. .	. .	. .	. .	57.2	. .	38 21.41	26.45	0.50	VII.	3	22.604	37 43.74	4.01	7.62	37 54.5	52 45.4
25	8.9	. .	. .	3.3	21.	39.2	. .	. .	40 21.21	26.45	0.53	IV.	5	48.664	10 20.93	4.19	0.97	39 54.2	25 16.1
26	10	. .	. .	. .	. .	. .	58.2	. .	40 22.43	26.45	0.53	VI.	5	52.708	6 7.35	4.19	0.12	39 55.4	21 1.7
27	9.10	. .	45.	3.	21.	. .	. .	. .	44 20.96	26.44	0.50	IV.	3	27.511	32 36.29	4.53	5.54	43 54.0	47 36.4
28	9.10	. .	. .	14.3	32.	50.2	. .	. .	46 32.13	26.44	0.49	IV.	3	27.222	32 54.41	4.72	5.61	46 5.2	47 54.7
29	9	. .	2.3	20.5	38.2	56.3	. .	. .	47 38.30	26.43	0.48	IV.	3	25.266	34 57.19	4.81	6.05	47 11.4	49 58.0
30	9.10	. .	37.4	. .	13.2	. .	49.	. .	49 13.25	26.43	0.50	IV.	5	52.486	6 21.16	4.95	0.17	48 46.3	21 16.3
31	8	. .	18.2	35.8	54.2	. .	30.1	. .	50 54.11	26.42	0.48	IV.	3	26.316	33 51.31	5.10	5.80	50 27.2	48 52.2
32	8	. .	12.2	30.2	48.2	6.7	. .	. .	55 48.31	26.41	0.45	IV.	3	23.964	36 18.66	5.51	6.32	55 21.4	51 20.5
33	8.9	. .	. .	. .	. .	30.2	48.2	. .	56 12.38	26.41	0.46	VI.	3	34.288	25 31.08	5.54	4.08	55 45.5	40 30.7
34	9	. .	. .	. .	. .	37.2	55.3	. .	57 19.47	26.41	0.46	V.	5	52.633	6 12.05	5.63	0.13	56 52.6	21 7.8
35	10	. .	. .	. .	8.	26.1	. .	. .	11 59 8.00	26.40	0.45	IV.	3	31.262	28 41.01	5.78	4.72	58 41.2	43 41.5
36	7	. .	. .	3.	21.	39.1	56.5	. .	12 0 20.97	26.40	0.45	IV.	4	40.098	19 17.41	5.88	2.81	11 59 54.1	34 16.1
37	9	. .	. .	17.3	. .	3.3	. .	. .	5 35.41	26.39	0.44	IV.	5	45.856	13 17.11	6.30	1.58	12 5 8.6	28 15.0
38	8.9	. .	. .	. .	. .	14.	. .	. .	5 46.08	26.38	0.43	V.	3	33.792	26 2.08	6.32	4.18	5 19.3	41 2.6
39	8.9	. .	38.5	56.5	14.3	. .	. .	. .	8 14.42	26.38	0.42	IV.	3	23.965	36 18.60	6.51	6.32	7 47.6	51 21.4
40	10	. .	. .	. .	. .	56.	13.8	. .	8 37.94	26.38	0.42	V.	3	19.384	41 6.16	6.54	7.33	8 11.1	56 10.0
41	9	. .	49.8	7.8	25.3	. .	. .	. .	10 25.62	26.37	0.43	IV.	5	51.670	7 12.25	6.68	0.32	9 58.8	22 9.2
42	8.9	. .	. .	. .	. .	23.2	41.2	. .	12 11 5.38	−26.37	−0.42	V.	3	35.224	−24 32.41	− 6.74	− 3.87	12 10 38.6	− 30 39 33.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	ϵ	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(236) 37. Time of transit over T. V assumed as $53^s.3$ instead of $3^s.3$.
(236) 38. Time of transit over T. V assumed as $4^s.0$ instead of 14^s.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 236	Mar. 19, 11 0	89 34 60.0	62.8	64.8	57.3	54.3	51.4	58.43	30.190	48.2	40.2	52.2	48.8	48.5
	11 20	. .	. . .	. . .	. . .	. . .	. . .	. .	. .	. .	40.			
	11 40	. .	. . .	. . .	. . .	. . .	. . .	. .	30.180	46.5	39.5			
	12 0	. .	. . .	. . .	. . .	. . .	. . .	. .	. .	. .	39.7			
	12 10	60.2	63.2	64.9	51.	54.2	58.4	58.65	30.168	45.5	39.6	. .	43.5	46.2

ZONE 237. MARCH 22. S. $D_0 = -35° 10' 20''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	..	36.3	55.2	..	..	..	..	8 11 14.33	−26.49	−3.30	III.	3	26.091	−34 5.12	−2.28	−11.23	8 10 44.5	−35 44 38.6
2	7	..	56.5	15.3	34.2	..	..	..	12 34.32	26.50	3.23	IV.	3	34.041	25 46.46	2.48	8.73	12 4.6	35 36 17.7
3	4.5	..	32.	51.	..	..	..	..	16 10.22	26.52	3.30	.	2	10.809	49 57.77	2.98	16.13	15 40.4	36 0 36.9
4	9	..	..	..	..	..	53.8	..	16 15.89	26.52	3.27	.	2	18.015	42 26.95	2.99	13.78	15 46.1	35 53 3.7
5	9	..	..	9.	27.	..	..	..	23 28.02	26.56	3.20	IV.	2	9.368	51 28.89	4.02	16.56	22 58.3	36 2 9.5
6	9	..	..	..	8.	..	..	..	26 7.85	26.58	3.08	.	3	28.748	31 18.55	4.38	10.39	25 38.2	35 41 53.3
7	7	..	13.5	34.	52.5	..	..	..	30 52.34	26.60	3.05	IV.	3	25.992	34 11.45	5.07	11.26	30 22.7	44 47.8
8	6.7	..	..	45.3	5.	..	..	..	32 4.59	26.60	2.98	IV.	3	33.552	26 17.26	5.23	8.76	31 35.0	36 51.3
9	9	..	7.2	26.	..	..	..	..	33 45.16	26.61	2.89	III.	5	51.560	7 18.84	5.48	3.35	33 15.7	17 47.7
10	9	..	..	..	..	39.	..	..	35 20.08	26.62	2.92	.	3	38.029	21 36.27	5.70	7.50	34 50.6	32 9.5
11	7	..	..	..	..	..	39.	..	36 1.21	26.62	2.88	.	3	44.552	14 46.86	5.79	5.49	35 31.7	25 18.1
12	6.5	..	..	..	35.5	54.5	..	..	37 35.51	26.63	2.86	IV.	4	45.372	13 46.54	6.01	5.24	37 6.0	24 17.8
13	8	..	..	0.	18.	..	..	..	39 18.43	26.64	2.89	.	3	32.735	27 8.39	6.26	9.16	38 48.9	37 43.8
14	11.10	..	..	..	43.	..	..	..	40 42.87	26.64	2.82	.	4	44.120	15 5.00	6.46	5.61	40 13.4	25 37.1
15	10	..	52.8	11.5	..	..	..	..	43 30.71	26.65	2.77	III.	5	49.392	9 34.98	6.85	4.00	43 1.3	20 5.8
16	10	..	..	49.	..	..	..	..	44 8.11	26.66	2.75	.	5	51.420	7 27.70	6.94	3.40	43 38.7	17 58.0
17	6	..	..	40.2	58.8	18.	..	..	44 59.05	26.66	2.75	V.	4	47.209	11 51.57	7.06	4.68	44 29.6	22 23.3
18	6.5	..	37.	56.8	..	..	..	..	47 15.60	26.67	2.87	III.	2	12.508	48 11.41	7.39	15.60	46 46.1	58 54.4
19	8	..	40.2	..	..	..	..	..	48 18.25	26.67	2.73	.	5	42.722	16 32.86	7.54	6.04	47 48.8	27 6.4
20	7	..	48.8	7.8	..	..	..	..	49 26.86	26.68	2.73	III.	4	40.602	18 45.21	7.69	6.70	48 57.4	29 19.6
21	8	..	42.8	2.	20.8	..	..	..	52 20.86	26.69	2.67	IV.	4	44.620	14 33.62	8.09	5.46	51 51.5	25 7.3
22	8	..	25.	44.	3.5	..	..	..	54 3.20	26.70	2.74	IV.	3	23.005	37 18.83	8.32	12.19	53 33.8	47 59.3
23	11	..	47.	6.	..	..	..	..	56 25.06	26.71	2.63	III.	5	40.895	18 28.01	8.65	6.60	55 55.7	29 3.3
24	10	..	..	..	12.	..	..	..	8 57 11.88	26.71	2.57	.	5	51.829	7 2.20	8.76	3.26	56 42.6	17 34.2
25	11	..	33.	..	..	..	..	..	9 0 11.09	26.72	2.62	.	3	32.963	26 59.74	9.18	9.08	59 41.7	37 38.0
26	7	..	..	..	26.	45.2	..	..	0 26.08	26.72	2.58	V.	3	40.285	19 14.83	9.21	6.78	8 59 56.8	29 50.8
27	8	..	..	..	..	..	19.	..	1 41.17	26.73	2.63	.	2	25.540	34 35.05	9.38	11.41	9 1 11.8	45 15.8
28	10	..	..	..	39.5	..	..	..	3 39.36	26.74	2.55	.	3	38.134	21 29.69	9.65	7.46	3 10.1	32 6.8
29	8	..	41.2	..	..	..	..	..	5 19.25	26.74	2.50	.	4	41.720	17 34.17	9.88	6.36	4 50.0	28 10.4
30	8	..	..	..	28.8	..	..	..	5 28.66	26.74	2.51	.	4	40.362	19 0.96	9.90	6.76	4 59.4	29 37.6
31	9	..	..	..	..	..	21.	..	5 43.22	26.74	2.53	.	3	34.579	25 12.64	9.93	8.56	5 14.0	35 51.1
32	9	..	..	..	..	..	30.5	..	6 52.72	26.75	2.52	.	3	35.122	24 38.57	10.08	8.39	6 23.5	35 17.0
33	10	..	..	..	..	..	23.	..	7 45.21	26.75	2.45	.	4	48.012	11 1.23	10.21	4.44	7 16.0	21 35.9
34	5.6	..	..	..	11.5	30.5	..	..	9 11.53	26.75	2.42	IV.	4	49.070	9 54.25	10.43	4.10	8 42.4	20 28.8
35	9	..	..	38.8	..	..	..	..	11 57.84	26.76	2.49	.	3	26.093	34 4.99	10.80	11.26	11 28.6	44 47.0
36	9	..	..	..	55.2	..	..	..	12 55.08	26.77	2.38	.	4	48.278	10 44.09	10.91	4.28	12 25.9	21 19.3
37	8	..	..	..	30.	49.	..	..	14 29.86	26.77	2.50	IV.	2	15.380	45 11.83	11.15	15.66	14 0.6	35 55 58.6
38	9	..	33.2	52.	..	..	..	..	18 11.32	26.78	2.47	.	2	10.099	50 42.35	11.65	16.38	17 42.1	36 1 30.4
39	7	..	1.8	20.8	..	..	..	..	19 39.89	26.79	2.40	.	3	26.137	34 2.23	11.85	11.22	19 10.7	35 44 55.3
40	8	..	..	..	13.	..	..	..	20 12.85	26.79	2.37	.	3	28.410	31 39.94	11.92	10.52	19 43.7	42 22.4
41	8	..	..	..	10.	..	..	..	21 9.88	26.79	2.27	.	5	48.325	10 42.33	12.04	4.32	20 40.8	21 18.7
42	7	..	..	..	53.5	12.	..	..	21 53.21	26.80	2.31	IV.	3	37.132	22 32.58	12.14	7.77	21 24.1	33 12.5
43	7	..	..	..	48.8	..	..	..	22 48.66	26.80	2.30	.	3	38.593	21 0.89	12.26	7.30	22 19.6	31 40.5
44	4.3	..	..	..	..	51.8	10.8	..	23 33.00	26.80	2.22	.	4	51.632	7 13.88	12.36	3.31	23 4.0	17 49.6
45	9	..	..	..	..	..	39.5	..	25 1.52	26.81	2.37	.	2	12.275	48 27.14	12.56	15.69	24 32.3	59 15.4
46	7	..	..	..	..	51.5	..	..	26 32.66	26.81	2.20	.	5	48.210	10 49.65	12.75	4.33	26 3.7	21 26.7
47	6	..	..	..	..	..	5.	..	27 27.18	26.81	2.29	.	3	26.398	33 46.04	12.87	11.14	26 57.1	44 30.0
48	6	..	..	..	..	38.	46.8	..	28 9.06	26.82	2.21	V.	5	41.413	17 56.39	12.98	6.43	27 40.0	28 35.8
49	7	..	48.8	..	..	..	..	..	9 30 26.83	−26.82	−2.15	.	5	47.778	−11 15.47	−13.27	−4.48	9 29 57.8	−35 21 53.2

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 237	Mar. 22, 8 0	94 29 60.	64.	66.2	60.9	59.3	53.6	60.67						
	8 20	..	..	..	..	..	..	..	30.318	49.	40.	48.5	..	49.
	8 40	..	..	..	..	..	..	..	..	..	39.			
	9 20	..	..	..	..	..	..	..	30.334	47.5	37.8			
	9 40	62.5	64.2	67.8	60.5	61.5	52.8	61.55	..	..	37.2			
	10 0	..	..	..	..	..	..	..	30.338	46.5	36.8			
	10 20	..	..	..	..	..	..	..	..	..	36.2			
	10 40	..	..	..	..	..	..	..	..	..	35.8			
	11 0	62.5	65.2	67.8	61.0	61.2	52.8	61.75	30.340	45.	35.	43.5	51.	46.

REMARKS.

(237) 5. Transit over T. IV rejected; declination differs 1′ from Mer. Circle Z. March 19, 1849.

(237) 20. Declination differs about 15″ from Mer. Circle Z. March 19, 1849, and Transit Z. March 12, 1849.

(237) 48. Time of transit over T. V assumed as 28^s instead of 38^s.

ZONE 237. MARCH 22. S. $D_0 = -35° 10' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	..	..	..	..	..	..	58.	9 30 1.04	−26.82	−2.22	.	3	32.778	−27 5.19	−13.22	− 9.14	9 29 32.0	− 35 37 57.5
51	5	..	..	..	..	..	20.	..	31 42.21	26.83	2.14	.	4	44.420	14 46.86	13.43	5.50	31 13.2	25 25.8
52	7	..	..	..	..	..	38.	..	34 0.21	26.83	2.11	.	4	44.943	14 13.85	13.74	5.34	33 31.3	24 52.9
53	6	..	..	..	..	42.8	1.	..	35 23.59	26.83	2.08	V.	4	48.638	10 21.80	13.93	4.21	34 54.7	20 59.9
54	10	..	55.	..	..	..	..	..	43 33.10	26.85	2.05	.	3	31.260	28 40.51	14.98	9.61	43 4.2	39 25.1
55	5	..	..	41.	59.5	..	..	..	43 59.69	26.85	2.03	IV.	3	36.168	23 33.12	15.04	8.07	43 30.8	34 16.2
56	6	..	..	..	40.	59.	..	..	44 39.96	26.85	2.01	.	3	36.606	23 5.58	15.12	7.93	44 11.1	33 48.6
57	8	..	..	30.	..	..	..	..	47 49.00	26.86	1.99	.	3	29.555	30 27.86	15.57	10.14	47 20.2	41 13.6
58	9	..	47.	6.8	..	..	..	..	52 25.46	26.87	1.85	III.	4	49.013	9 57.28	16.11	4.09	51 56.7	20 37.5
59	6	..	32.8	52.	..	..	..	..	54 10.96	26.87	1.82	III.	4	49.914	9 0.65	16.33	3.81	53 42.3	35 19 40.8
60	8	..	..	..	..	..	59.	..	54 21.00	26.87	1.99	.	2	10.433	50 22.66	16.35	16.29	53 52.1	36 1 15.3
61	11	..	..	..	..	..	36.	..	56 58.22	26.88	1.82	.	5	41.133	18 13.89	16.69	6.55	56 29.5	35 28 57.1
62	8	..	..	..	9.	..	..	..	59 8.93	26.88	1.91	.	2	14.973	45 37.18	16.96	14.80	58 40.1	56 29.0
63	5.	..	..	..	..	..	53.	..	9 59 15.22	26.88	1.84	.	3	31.289	28 39.19	16.97	9.60	58 46.5	39 25.8
64	7	..	..	..	..	..	49.5	..	10 0 11.72	26.88	1.83	.	3	31.343	28 35.80	17.09	9.59	9 59 43.0	39 22.5
65	7	..	..	..	..	39.2	..	..	1 19.99	26.88	1.89	.	2	15.049	45 32.85	17.23	14.80	10 0 51.2	56 24.9
66	9	..	48.	..	..	..	..	..	3 26.10	26.89	1.79	.	3	31.088	28 51.17	17.49	9.66	2 57.4	35 39 38.3
67	6	..	..	33.	..	..	..	..	3 52.16	26.89	1.87	.	2	9.582	51 14.84	17.54	16.54	3 23.4	36 2 8.9
68	7	..	..	..	36.	..	..	..	4 35.90	26.89	1.81	.	3	19.809	40 39.25	17.64	13.24	4 7.2	35 51 30.1
69	7	..	..	..	..	48.	..	..	5 28.69	26.89	1.86	.	2	8.118	52 47.52	17.73	16.94	4 59.9	.36 3 42.2
70	8	..	..	..	..	52.5	..	..	6 33.60	26.89	1.70	.	4	40.630	18 44.40	17.88	6.71	6 5.0	35 29 29.0
71	7	..	..	..	..	..	38.	..	7 0.21	26.89	1.65	.	5	49.860	9 5.98	17.94	3.82	6 31.7	19 47.7
72	8	..	..	..	35.8	..	..	..	8 35.72	26.89	1.78	.	2	17.018	43 28.92	18.13	14.15	8 7.1	54 21.2
73	6.5	..	..	..	..	35.	53.8	..	9 15.95	26.89	1.73	V.	3	24.623	35 37.46	18.22	11.69	8 47.3	46 27.4
74	8	..	..	..	54.	..	32.	..	10 54.00	26.90	1.76	.	2	16.482	44 2.72	18.42	14.30	10 25.3	35 54 55.4
75	5	..	..	..	32.	..	..	..	12 31.96	26.90	1.76	.	2	8.530	52 21.38	18.61	16.88	12 3.3	36 3 16.9
76	8	..	..	..	..	..	29.	..	12 51.22	26.90	1.66	.	3	31.402	28 32.10	18.65	9.57	12 22.7	35 39 20.3
77	7	..	..	..	13.	32.	..	..	14 13.00	26.90	1.58	IV.	4	43.023	16 13.79	18.83	5.93	13 44.5	26 58.5
78	7	..	13.2	32.	..	..	..	..	15 51.16	26.90	1.56	.	4	41.963	17 19.68	19.02	6.27	15 22.7	28 5.0
79	8	..	..	22.	..	..	..	..	16 41.00	26.90	1.61	.	3	30.570	29 24.11	19.12	9.82	16 12.5	40 13.0
80	7	..	..	57.2	..	..	54.3	..	17 16.37	26.90	1.59	.	3	33.023	26 50.33	19.19	9.06	16 47.9	37 38.6
81	9	..	..	..	14.	..	..	..	19 13.92	26.91	1.64	.	2	16.978	43 31.42	19.44	14.17	18 45.4	54 25.0
82	7.6	..	23.5	42.5	1.5	..	..	..	22 1.49	26.91	1.48	IV.	4	43.772	15 26.70	19.77	5.67	21 33.1	26 12.1
83	8	..	..	46.	..	..	..	..	23 5.10	26.91	1.58	.	2	18.232	42 12.40	19.90	13.73	22 36.6	53 6.0
84	8	..	..	..	58.	..	..	..	23 57.92	26.91	1.58	.	2	16.003	44 32.57	20.01	14.49	23 29.4	55 27.1
85	7	..	..	..	..	55.	..	..	24 36.10	26.91	1.45	.	4	40.579	18 47.66	20.10	6.68	24 7.7	29 34.4
86	7	..	..	..	..	..	36.	..	25 58.21	26.91	1.43	.	4	42.800	16 28.33	20.26	6.0[illegible]	25 29.9	27 14.6
87	9	..	..	..	26.	..	..	..	26 25.84	26.91	1.48	.	3	29.693	30 19.27	20.31	10.09	25 57.4	41 9.7
88	9	..	..	..	..	..	5.2	..	26 27.39	26.91	1.49	.	3	27.132	32 59.87	20.31	10.91	25 59.0	43 51.1
89	7	..	..	..	..	..	50.	..	27 12.21	26.91	1.37	.	5	51.893	6 58.54	20.40	3.20	26 44.0	17 42.1
90	9	..	..	15.	..	..	..	..	29 34.03	26.91	1.43	.	3	33.958	25 51.41	20.69	8.75	29 5.7	36 40.8
91	7	..	..	..	..	14.	..	..	29 55.06	26.91	1.41	.	3	35.108	24 39.57	20.73	8.40	29 26.7	35 28.7
92	8	..	..	48.6	7.	..	..	..	32 7.26	26.91	1.35	IV.	4	39.769	19 37.92	20.99	6.94	31 39.0	30 25.8
93	5	..	..	39.	58.	17.	..	..	32 57.95	26.91	1.45	IV.	2	17.510	42 58.18	21.10	14.01	32 29.6	53 53.3
94	8	..	..	11.2	..	..	..	..	34 30.26	26.91	1.41	.	2	22.668	37 33.94	21.28	12.36	34 1.9	48 27.6
95	6	..	..	..	37.	..	..	..	35 36.88	26.91	1.38	.	3	22.748	37 41.23	21.41	12.32	35 8.6	48 35.0
96	8	..	..	..	..	17.5	37.	..	36 58.92	26.91	1.27	V.	4	44.778	14 23.94	21.59	5.39	36 30.7	35 25 10.9
97	9	..	..	..	..	..	41.2	..	37 3.21	26.91	1.38	.	2	10.692	50 6.23	21.60	16.21	36 34.9	36 1 4.0
98	8	..	..	..	..	..	33.	..	10 38 55.00	−26.91	−1.40	.	2	9.328	−51 32.06	−21.82	−16.63	10 38 26.7	− 36 2 30.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 237. MARCH 22. S. $D_0 = -35° 10' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	8	. .	32.5	. .	. .	. .	. .	. .	10 40 10.56	−26.91	−1.25	.	4	40.762	−18 34.29	−21.97	− 6.62	10 39 42.4	− 35 29 22.9
100	8	. .	. .	16.5	. .	54.	. .	. .	40 35.40	26.91	1.21	V.	5	51.220	7 40.81	22.02	3.41	40 7.3	18 26.2
101	6.7	. .	. .	. .	. .	. .	48.5	. .	41 10.71	26.91	1.19	.	5	49.595	9 22.81	22.09	3.90	40 42.6	20 8.8
102	10	. .	. .	7.8	. .	. .	. .	. .	46 26.91	26.91	1.29	.	2	16.112	44 25.30	22.73	14.44	45 58.7	55 22.5
103	6	. .	. .	11.8	30.5	49.	. .	. .	47 30.38	26.91	1.19	IV.	3	31.208	28 44.33	22.86	9.63	47 2.3	35 39 36.8
104	8	. .	. .	34.	. .	. .	. .	. .	48 53.16	26.91	1.27	.	2	9.713	51 6.51	23.04	16.51	48 25.0	36 2 6.1
105	8	. .	. .	52.	. .	. .	. .	. .	50 11.04	26.91	1.18	.	3	24.112	36 9.27	23.19	11.84	49 43.0	35 47 4.3
106	7	. .	. .	. .	. .	. .	20.5	. .	50 42.71	26.91	1.09	.	5	45.140	14 2.43	23.25	5.28	50 14.7	24 51.0
107	7.6	. .	. .	20.	39.	. .	. .	. .	52 38.93	26.91	1.13	IV.	3	28.658	31 24.26	23.50	10.41	52 10.9	42 38.2
108	9	. .	14.8	. .	. .	. .	. .	. .	54 52.84	26.91	1.04	.	4	43.869	15 19.24	23.78	5.65	54 24.9	26 8.7
109	8	. .	. .	42.	. .	. .	. .	. .	56 1.08	26.91	1.12	.	2	19.922	40 26.20	23.91	13.22	55 43.0	51 23.3
110	6	. .	. .	. .	43.	. .	. .	. .	57 42.92	26.91	1.13	.	2	16.611	43 54.51	24.12	14.29	57 14.9	35 54 52.9
111	9	. .	. .	. .	. .	. .	19.5	. .	10 57 41.50	−26.91	−1.16	.	2	9.832	−51 0.10	−24.12	−16.49	10 57 13.4	− 36 2 0.7

ZONE 238. MARCH 22. S. $D_0 = -34° 0' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	42.	59.	. .	. .	. .	. .	12 25 19.72	−27.66	−0.91	III.	3	21.902	−38 27.76	− 0.67	−17.35	12 24 51.1	− 34 39 15.8
2	8	. .	42.2	1.	. .	. .	. .	. .	29 19.79	27.65	0.90	III.	3	24.830	35 24.10	0.88	16.51	28 51.2	36 11.5
3	9	. .	. .	. .	. .	1.	. .	. .	29 42.38	27.65	0.67	.	4	43.450	15 47.55	0.90	11.12	29 14.1	16 29.6
4	7	. .	. .	48.6	7.	. .	. .	. .	31 7.12	27.64	0.72	IV.	4	39.788	19 36.73	0.98	12.18	30 38.8	20 19.9
5	10	. .	. .	. .	28.	. .	. .	. .	33 27.88	27.63	0.60	.	5	51.202	7 41.75	1.10	8.93	32 59.7	8 21.8
6	7.8	. .	26.2	45.2	. .	. .	. .	. .	36 3.89	27.62	0.91	III.	3	25.569	34 37.87	1.25	16.30	35 35.3	35 25.4
7	9	. .	. .	. .	23.	41.	. .	. .	36 22.62	27.62	0.71	IV.	4	42.300	16 59.27	1.27	11.45	35 54.3	17 42.0
8	8	. .	49.2	8.	27.	. .	. .	. .	40 26.94	27.60	1.11	IV.	2	8.559	52 19.56	1.49	21.33	39 58.2	53 12.4
9	7	. .	38.5	57.3	16.	. .	. .	. .	44 15.99	27.58	0.72	IV.	5	44.032	15 11.65	1.71	10.96	43 47.6	15 54.3
10	10	. .	1.	19.2	. .	. .	. .	. .	46 38.26	27.57	0.74	III.	5	43.053	16 12.72	1.84	11.26	46 10.0	16 55.8
11	9	. .	. .	. .	. .	33.	. .	. .	47 14.36	27.57	0.76	.	4	40.528	18 50.86	1.88	11.97	46 46.0	19 34.7
12	7	. .	. .	30.	48.3	. .	. .	. .	48 48.48	27.56	0.76	IV.	4	41.722	17 35.43	1.97	11.63	48 20.2	18 19.0
13	8	. .	10.2	29.5	. .	. .	. .	. .	51 48.16	27.55	1.13	III.	2	11.310	49 26.53	2.14	20.52	51 19.5	50 19.2
14	10	. .	. .	. .	. .	. .	27.	. .	51 49.57	27.55	1.22	.	2	12.240	48 29.28	2.14	20.25	51 20.8	49 21.7
15	9	. .	8.5	27.2	. .	. .	. .	. .	54 46.01	27.53	0.79	.	4	41.580	17 43.84	2.31	11.65	54 17.7	18 27.8
16	9	. .	11.	30.	. .	. .	. .	. .	57 48.65	27.51	0.86	.	3	36.320	23 23.46	2.48	13.18	57 20.3	24 9.1
17	7	. .	. .	. .	57.5	16.8	35.	. .	12 57 57.76	27.51	0.82	IV.	4	41.702	17 36.68	2.49	11.63	57 29.4	18 20.8
18	8	. .	. .	45.8	4.	22.5	. .	. .	13 0 3.76	27.50	0.85	IV.	4	37.998	21 29.12	2.61	12.69	12 59 35.4	22 14.4
19	8	. .	. .	. .	. .	. .	30.	. .	0 52.62	27.50	1.11	.	2	17.170	43 20.06	2.66	18.77	13 0 24.0	44 11.5
20	8	. .	. .	. .	49.	. .	. .	. .	2 48.87	27.49	0.78	.	5	45.442	13 43.28	2.77	10.55	2 20.6	14 26.6
21	5	. .	. .	. .	. .	56.8	. .	. .	3 38.16	27.48	0.84	.	4	40.342	19 2.78	2.81	12.03	3 9.8	19 47.6
22	9	. .	. .	. .	19.2	. .	. .	. .	5 19.08	27.48	0.76	IV.	5	47.760	11 17.61	2.91	9.90	4 50.8	12 0.4
23	8	. .	. .	. .	. .	23.	41.5	. .	6 4.29	27.47	0.86	V.	4	38.892	20 33.34	2.94	12.43	5 36.0	21 18.7
24	9	. .	. .	51.	. .	. .	. .	. .	8 9.80	27.46	0.86	.	4	41.302	18 1.34	3.06	11.74	7 41.5	18 46.9
25	8	. .	5.5	24.	42.8	. .	. .	. .	13 42.85	27.45	0.73	IV.	5	53.026	5 47.14	3.36	8.40	13 14.7	6 18.9
26	9	. .	. .	44.	. .	. .	40.	. .	16 2.72	27.43	1.19	III.	2	15.236	45 20.31	3.48	19.34	15 34.1	46 13.1
27	7.6	. .	. .	38.5	57.	. .	. .	. .	17 57.08	27.42	0.87	IV.	4	42.479	16 48.05	3.58	11.40	17 28.8	17 33.0
28	9	. .	. .	. .	59.	. .	. .	. .	18 58.92	27.41	1.19	.	2	16.380	44 9.11	3.64	18.99	18 30.3	45 1.7
29	9	. .	. .	. .	. .	57.5	. .	. .	19 38.75	27.41	1.06	.	3	27.703	32 24.11	3.67	15.68	19 10.3	33 13.5
30	5.6	. .	. .	1.2	19.3	. .	57.	. .	21 19.63	27.40	1.22	IV.	2	14.190	46 26.41	3.76	19.66	20 51.0	47 19.8
31	10	. .	. .	. .	4.	23.	. .	. .	26 4.04	27.37	1.11	IV.	3	26.472	33 41.46	4.00	16.03	25 35.6	34 31.5
32	7	. .	50.	9.	27.3	. .	. .	. .	13 29 27.49	−27.35	−0.91	IV.	4	43.140	−16 6.50	− 4.18	−11.20	13 28 59.2	− 34 16 51.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(238) 1. Time of transit over T. III assumed as 1ˢ instead of 59ˢ.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 238	Mar. 22, 12 20	93 19 60.	65.3	65.8	59.3	57.8	50.5	59.78						
	12 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	32.9			
	13 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	33.8			
	13 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	33.4			
	14 20	60.	65.3	65.8	60.2	58.	50.5	59.97	. .	. .	. .	. .	42.8	43.5

ZONE 238. MARCH 22. S. $D_\circ = -34° 0' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	7	..	..	..	..	0.	18.5	..	13 29 41.31	−27.35	−0.92	V.	4	42.239	−17 3.48	− 4.19	−11.48	13 29 13.0	− 34 17 49.2
34	9	..	..	..	12.8	31.	50.2	..	31 12.61	27.34	1.11	IV.	3	27.102	33 1.88	4.27	15.85	30 44.2	33 52.0
35	10	..	1.	..	..	..	..	..	34 38.49	27.32	0.85	.	5	49.595	9 21.62	4.44	9.36	34 10.3	10 5.4
36	7	..	..	..	2.3	..	..	..	35 2.15	27.31	1.10	.	3	29.018	31 1.61	4.46	15.29	34 33.7	31 51.4
37	.	..	..	..	..	8.	27.	..	35 49.48	27.31	1.12	VI.	3	27.386	32 44.06	4.50	15.77	35 21.1	33 34.3
38	8	..	22.	41.	..	..	..	..	37 59.65	27.30	1.03	.	3	35.420	24 19.93	4.61	13.44	37 31.3	25 8.0
39	9	..	59.	18.	36.2	..	..	..	39 36.46	27.29	1.01	IV.	3	38.663	20 56.50	4.69	12.49	39 8.2	21 43.7
40	10	..	..	46.	..	..	..	..	42 4.76	27.28	1.19	.	2	24.240	35 55.53	4.80	16.67	41 36.3	36 47.0
41	8	..	41.	59.	18.	..	..	..	44 18.06	27.26	1.00	IV.	3	40.752	18 45.34	4.91	11.90	43 49.8	19 32.1
42	4	..	1.	20.	..	..	..	..	45 38.68	27.25	1.17	.	3	26.802	33 20.38	4.97	15.94	45 10.3	34 11.3
43	8	..	..	..	..	22.	..	..	46 3.16	27.24	1.23	.	3	21.975	38 23.43	4.99	17.36	45 34.7	39 15.8
44	8	..	28.5	..	6.	..	..	..	48 5.94	27.23	1.08	IV.	4	35.278	24 19.93	5.08	13.48	47 37.6	25 8.5
45	7	..	..	..	51.	..	..	..	48 50.88	27.23	0.92	.	5	49.685	9 16.85	5.13	9.34	48 22.7	10 1.3
46	8	..	..	5.	24.	..	..	..	50 23.85	27.22	0.97	IV.	4	46.565	12 31.61	5.19	10.25	49 55.6	13 17.1
47	9	..	..	45.	..	..	..	..	52 3.75	27.21	1.18	.	3	27.943	32 8.80	5.25	15.61	51 35.4	32 59.7
48	8	..	56.5	..	34.	..	..	..	54 33.95	27.20	1.14	IV.	3	33.392	26 27.37	5.35	14.02	54 5.6	27 16.7
49	7.6	..	30.2	49.	8.2	..	..	..	58 7.87	27.17	0.95	IV.	5	49.050	9 56.71	5.51	9.55	57 39.7	10 41.8
50	7	..	..	..	43.5	..	..	..	58 43.43	27.17	1.37	.	2	15.136	45 27.07	5.53	19.39	58 14.9	46 22.0
51	6	..	..	..	..	43.	..	..	59 24.41	27.16	1.00	.	5	46.005	13 8.02	5.56	10.38	58 56.2	13 54.0
52	8	..	..	..	..	..	33.2	..	13 59 55.94	27.16	1.01	.	5	44.642	14 33.68	5.58	10.77	13 59 27.8	15 20.0
53	7	..	..	..	..	20.2	..	..	14 1 1.64	27.15	0.95	.	5	49.710	9 15.47	5.62	9.31	14 0 33.5	10 0.4
54	9	..	29.2	..	..	..	..	..	4 6.86	27.12	1.34	.	2	19.208	41 10.42	5.73	18.18	3 38.4	42 4.3
55	9	..	..	..	21.8	..	..	..	4 21.69	27.12	1.30	.	2	21.493	38 48.41	5.74	17.50	3 53.3	39 41.6
56	9	..	..	..	5.5	..	..	..	6 5.35	27.10	1.13	.	3	36.772	22 55.03	5.80	13.05	5 37.1	23 43.9
57	8.7	..	37.2	56.	15.	..	..	..	8 14.79	27.09	1.08	IV.	4	41.636	17 40.89	5.89	11.72	7 46.6	18 28.5
58	10	..	28.	..	..	..	..	..	11 5.57	27.08	1.24	.	3	29.178	30 51.07	5.98	15.25	10 37.2	31 42.3
59	10	..	..	..	8.	..	..	..	11 7.85	27.08	1.15	.	4	36.768	22 46.24	5.99	13.05	10 39.6	23 35.3
60	8	..	..	..	..	..	23.5	..	11 46.15	27.07	1.36	.	3	19.513	40 57.87	6.01	18.05	11 17.7	41 51.9
61	10	..	13.5	..	51.	..	..	..	14 50.95	27.05	1.22	IV.	3	32.801	27 4.20	6.10	14.19	14 22.7	27 54.5
62	10	..	11.	29.5	48.	..	..	..	14 16 48.28	−27.04	−1.35	IV.	2	21.689	−38 35.92	− 6.17	−17.45	14 16 19.9	− 34 39 29.5

ZONE 239. MARCH 23. C. $D_\circ = -32° 42' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	..	..	42.	2.2	..	39.3	..	9 33 2.39	−28.14	−1.03	III.	3	37.606	−22 2.64	− 2.79	− 4.10	9 32 33.2	− 33 4 39.5
2	10	..	..	46.5	4.5	..	41.7	..	33 4.79	28.14	1.03	IV.	3	37.945	21 41.41	2.79	4.02	32 35.6	4 18.2
3	10	..	..	..	36.2	54.7	13.3	..	34 36.31	28.14	1.06	IV.	3	32.972	26 53.52	2.97	5.26	34 7.1	9 31.7
4	9.10	..	45.2	..	22.1	..	..	..	38 22.07	28.15	1.06	IV.	3	32.761	27 6.70	3.38	5.31	37 52.9	9 45.4
5	9.10	..	50.7	9.2	27.2	45.3	..	..	39 27.33	28.16	1.04	IV.	3	35.861	23 52.20	3.49	4.54	38 58.1	33 6 30.2
6	9.10	..	..	..	..	..	52.5	..	39 15.80	28.16	1.00	VI.	4	43.289	15 57.90	3.47	2.67	38 46.6	32 58 34.0
7	10	..	..	..	..	38.2	..	..	44 19.91	28.17	0.97	III.	5	49.041	9 56.90	4.03	1.24	43 50.8	32 52 32.2
8	10	..	..	..	19.2	..	..	..	44 19.11	28.17	1.13	IV.	2	18.222	42 13.53	4.03	9.01	43 49.8	33 24 56.6
9	10	..	47.2	5.3	13.7	..	..	..	47 23.92	28.17	1.13	IV.	2	18.261	42 11.15	4.36	9.00	46 54.6	33 24 54.5
10	8.9	..	..	51.3	9.1	27.2	46.2	..	49 9.29	28.18	1.01	IV.	4	42.934	16 19.30	4.57	2.76	48 40.1	32 58 56.6
11	9	..	..	17.5	35.2	..	12.4	..	50 35.59	28.18	1.02	IV.	4	39.717	19 41.25	4.71	3.56	50 6.4	33 2 19.5
12	10	..	..	..	45.8	4.3	23.2	..	51 45.90	28.18	1.15	IV.	2	13.263	47 24.62	4.85	10.30	51 16.6	33 30 9.8
13	9	..	..	..	..	..	16.5	..	52 39.80	28.19	1.00	VI.	5	44.688	14 30.73	4.95	2.31	52 10.6	32 57 8.0
14	10	..	..	..	..	..	48.	..	53 11.30	28.19	1.00	VI.	5	44.135	15 5.40	5.00	2.45	52 42.1	32 57 42.9
15	9	..	20.4	38.7	57.4	15.8	34.3	..	55 57.35	28.19	..	IV.	2	16.086	44 27.43	5.31	9.57	55 28.0	33 27 12.3
16	10.11	..	..	50.7	9.1	..	..	..	9 58 9.16	−28.20	−1.15	IV.	2	13.562	−47 5.80	− 5.56	−10.23	9 57 39.8	− 33 29 51.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(239) 1. Time of transit over T. III assumed as 44^s instead of 42^s.
(239) 9. Time of transit over T. IV assumed as 23^s.7 instead of 13^s.7.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 239	Mar. 23, 9 30	92 2 {28.6 / 28.1	32. / 31.3	34.1 / 34.2	29.5 / 30.6	27.7 / 27.9	18.8 / 18.9	28.48	30.364	48.	42.1	50.	44.8	48.8
	9 40	..	..	..	..	..	..	..	..	..	42.			
	10 0	..	..	..	..	..	..	..	30.358	..	41.8			
	10 20	..	..	..	..	..	..	..	..	..	41.3			
	10 50	..	..	..	..	..	..	..	..	..	41.1			
	11 0	..	..	..	..	..	..	..	30.342	45.2	41.2			
	11 12	{27.9 / 27.7	31.4 / 31.9	34.2 / 33.9	29.8 / 30.6	26.3 / 26.8	18.7 / 18.4	28.14	..	..	41.1	..	43.5	45.5

ZONE 239. MARCH 23. C. $D_0 = -32° 42' 30''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
17	10	. .	5.2	23.5	42.	. .	. .	. .	9 59 42.11	−28.20	−1.14	IV.	2	15.987	−44 33.58	− 5.73	− 9.59	9 59 12.8	− 33 27 18.9
18	10	. .	. .	53.6	11.7	30.2	48.3	. .	10 2 11.72	28.20	1.12	IV.	2	19.813	40 33.54	6.00	8.61	10 1 42.4	33 23 18.1
19	9.10	. .	. .	. .	. .	36.2	. .	. .	4 17.93	28.21	0.96	V.	5	51.632	7 14.88	6.23	0.58	3 48.8	32 49 51.7
20	10	. .	. .	. .	43.2	. .	. .	. .	5 43.07	28.21	1.00	IV.	4	43.521	15 42.66	6.38	2.60	5 13.9	32 58 21.6
21	9	. .	. .	. .	. .	24.2	42.6	. .	6 5.84	28.21	1.06	V.	3	32.252	27 38.90	6.42	5.44	5 36.6	33 10 20.8
22	10.11	. .	. .	35.7	. .	12.5	. .	. .	8 54.12	28.22	1.06	IV.	3	32.286	27 36.76	6.72	5.43	8 24.8	10 18.9
23	9	. .	. .	22.2	40.2	58.3	17.3	. .	10 40.26	28.22	1.12	IV.	2	20.265	40 5.45	6.92	8.49	10 10.9	22 50.9
24	10	. .	. .	. .	. .	39.2	57.5	. .	11 20.85	28.22	0.99	V.	4	47.525	11 31.73	6.99	1.61	10 51.6	33 54 10.3
25	9.10	. .	57.5	15.9	34.5	. .	. .	. .	14 34.43	28.22	0.97	IV.	4	49.971	8 57.65	7.34	1.00	14 5.2	32 51 36.0
26	10	. .	. .	14.3	33.	. .	. .	. .	16 32.88	28.22	0.97	IV.	5	50.024	8 55.58	7.54	0.99	16 3.7	51 34.1
27	10	. .	. .	. .	8.2	. .	44.8	. .	17 8.09	28.22	0.99	IV.	4	45.116	14 2.49	7.61	2.21	16 38.9	56 42.3
28	10	. .	. .	. .	. .	36.5	54.8	. .	17 18.14	28.22	1.00	V.	4	44.184	15 1.42	7.63	2.44	16 48.9	32 57 41.5
29	9	. .	46.2	4.4	22.8	41.5	. .	. .	19 22.97	28.23	1.01	IV.	4	41.833	17 28.40	7.86	3.03	18 53.7	33 0 9.3
30	9	. .	. .	4.4	22.7	41.2	59.5	. .	20 22.80	28.23	0.99	IV.	5	46.517	12 35.82	7.96	1.87	19 53.6	32 55 15.6
31	9	. .	. .	22.8	41.2	. .	17.8	. .	21 41.13	28.23	1.10	IV.	3	24.756	35 28.99	8.09	7.34	21 11.8	33 18 14.4
32	10	. .	. .	. .	. .	. .	52.8	. .	22 15.93	28.23	1.16	VI.	2	11.942	48 47.84	8.16	10.62	21 46.6	33 31 36.6
33	8.9	. .	41.6	. .	18.4	37.2	55.4	. .	28 18.60	28.23	1.01	IV.	4	42.511	16 46.04	8.79	2.85	27 49.4	32 59 27.7
34	9.10	. .	. .	49.3	8.2	. .	. .	. .	31 7.96	28.24	1.12	IV.	2	19.230	41 10.30	9.08	8.75	30 38.6	33 23 59.1
35	9.10	. .	. .	. .	33.2	. .	9.5	. .	31 32.92	28.24	1.07	IV.	3	30.615	29 21.48	9.12	5.85	31 3.6	12 6.4
36	8.9	. .	. .	27.5	46.	4.7	22.5	. .	32 45.98	28.24	1.06	IV.	3	32.778	27 5.63	9.25	5.31	32 16.7	33 9 50.2
37	8.9	. .	. .	. .	. .	46.2	4.6	. .	33 27.91	28.24	0.96	V.	5	51.573	7 18.67	9.32	0.59	32 58.7	32 49 58.6
38	9	. .	. .	46.2	4.2	22.3	. .	. .	35 4.26	28.24	0.99	IV.	4	46.611	12 28.65	9.49	1.83	34 35.0	55 10.0
39	10	. .	. .	. .	43.3	2.2	. .	. .	35 43.53	28.24	0.99	IV.	4	46.161	12 56.90	9.56	1.94	35 14.3	55 38.4
40	10	. .	. .	. .	. .	6.2	. .	. .	35 47.89	28.24	0.99	V.	4	46.492	12 36.57	9.57	1.86	35 18.6	55 18.0
41	9	. .	. .	. .	. .	. .	38.2	. .	36 1.49	28.24	0.97	VI.	5	49.335	9 39.25	9.59	1.13	35 32.3	32 52 20.0
42	10	. .	. .	. .	56.5	. .	23.5	. .	37 56.54	28.24	1.15	IV.	2	15.052	45 32.29	9.77	9.85	37 27.2	33 28 21.9
43	10	. .	. .	. .	. .	3.5	21.7	. .	39 45.09	28.24	1.00	IV.	5	44.706	14 29.35	9.97	2.30	39 15.8	32 57 11.6
44	9.10	. .	. .	. .	54.	12.4	. .	. .	40 53.90	28.24	1.08	IV.	3	28.666	31 23.76	10.09	6.37	40 24.6	33 14 10.2
45	10	. .	. .	. .	. .	40.?	. .	. .	41 21.56	28.24	1.07	V.	3	30.624	29 20.98	10.13	5.84	40 52.2	12 7.0
46	8	. .	. .	9.2	28.2	46.3	4.3	. .	43 27.78	28.24	1.09	IV.	3	26.971	33 10.03	10.35	6.77	42 58.4	15 57.2
47	9	. .	. .	. .	. .	. .	. .	. .	43	28.24	1.02	.	4	39.384	20 2.28	10.35	3.63	43	33 2 46.3
48	9	. .	. .	. .	57.2	. .	33.6	. .	45 56.98	28.24	0.97	IV.	5	50.047	8 54.13	10.58	0.96	45 27.8	32 51 35.7
49	10	. .	. .	. .	. .	12.7	31.3	. .	46 54.44	28.24	1.07	VI.	3	30.854	29 6.23	10.68	5.79	46 25.1	33 11 52.7
50	10	. .	. .	. .	. .	45.2	. .	. .	48 26.82	28.24	1.03	V.	3	37.639	22 0.76	10.83	4.07	47 57.6	33 4 45.7
51	7	. .	2.1	20.6	38.8	57.3	. .	. .	52 38.96	28.24	0.99	IV.	4	45.850	13 16.29	11.24	2.01	52 9.7	32 55 59.5
52	9	. .	. .	. .	. .	. .	9.3?	. .	52 32.41	28.24	1.17	VI.	2	9.721	51 7.12	11.23	11.24	52 3.0	33 33 59.6
53	9	. .	. .	50.3	. .	27.5	46.2	. .	55 9.13	28.24	1.04	IV.	3	36.176	23 32.62	11.48	4.44	54 39.8	32 56 18.5
54	9.10	. .	32.8	. .	9.5	. .	. .	. .	57 9.56	28.24	0.98	IV.	5	47.337	11 44.41	11.68	1.64	56 40.3	32 54 27.7
55	10	. .	. .	. .	8.3	. .	45.3	. .	58 8.38	28.24	1.04	IV.	3	36.832	22 51.27	11.75	4.27	57 39.1	33 5 37.3
56	10	. .	. .	. .	. .	32.8	51.	. .	10 59 14.17	28.24	1.17	V.	2	16.957	43 33.56	11.86	9.38	10 58 44.8	26 24.8
57	10	. .	. .	32.3	50.8	9.5	. .	. .	11 0 50.82	28.24	1.11	IV.	3	22.913	37 24.54	12.01	7.85	11 0 21.4	33 20 14.4
58	9	. .	. .	. .	47.2	. .	23.5	. .	1 46.93	28.24	0.97	IV.	5	50.065	8 53.00	12.10	0.95	1 17.7	32 51 36.0
59	10	. .	. .	. .	21.8	40.8	. .	. .	4	28.24	1.09	IV.	3	25.362	34 50.89	12.35	7.20	3	33 17 40.4
60	10	. .	. .	. .	. .	. .	. .	. .	4	28.24	1.07	.	3	30.872	29 5.23	12.35	5.78	3	11 53.4
61	10	. .	. .	. .	. .	27.	45.3	. .	6 8.32	28.24	1.18	V.	2	8.361	52 32.41	12.49	11.61	5 38.9	35 26.5
62	9	. .	. .	. .	. .	. .	17.?	. .	6 40.31	28.23	1.05	VI.	4	34.398	25 15.84	12.54	4.90	6 11.0	8 3.3
63	10	. .	. .	. .	. .	11.3	. .	. .	7 52.68	28.23	1.13	V.	3	17.017	43 34.50	12.64	9.35	7 23.3	26 26.5
64	10	. .	. .	. .	25.2	44.2	. .	. .	9 25.37	28.23	1.11	IV.	3	22.912	37 24.60	12.80	7.82	8 56.0	33 20 15.2
65	9	. .	15.3	33.4	52.	. .	28.3	. .	11 51.92	28.23	0.99	IV.	4	45.766	13 21.56	13.01	2.03	11 22.7	32 56 6.6
66	10	. .	. .	. .	11.2	. .	. .	. .	11 12 11.08	−28.23	−0.97	IV.	5	50.669	− 8 15.08	−13.05	− 0.80	11 11 41.9	32 50 58.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 240. MARCH 23. C. $D_{o}=-32° \cdot 42' \ 30''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	0.1	18.4	37.	. .	. .	12 40 18.45	−28.01	−1.23	IV.	3	28.599	−31 27.96	−16.11	− 6.35	12 39 49.2	− 33 14 20.4
2	9	. .	29.	48.	6.3	. .	. .	. .	42 6.22	28.00	1.22	IV.	3	26.204	33 58.27	16.25	6.98	41 37.0	16 51.5
3	7	. .	26.2	44.2	2.3	21.3	39.4	. .	43 2.72	28.00	1.22	IV.	3	32.028	27 52.76	16.28	5.48	42 33.5	10 44.5
4	10	. .	. .	1.2	. .	38.0	. .	. .	45 19.59	27.99	1.21	IV.	3	26.727	33 25.34	16.43	6.85	44 50.4	33 16 18.6
5	10	. .	24.3	. .	1.3	19.5	. .	. .	48 1.21	27.98	1.25	IV.	5	49.678	9 17.31	16.60	0.99	47 32.0	32 52 4.9
6	10	. .	38.2	. .	15.	. .	51.8	. .	50 15.07	27.97	1.18	IV.	2	15.414	45 9.70	16.75	9.81	49 45.9	33 28 6.3
7	9.10	. .	. .	. .	. .	11.3	. .	. .	49 52.93	27.97	1.23	V.	4	38.821	20 37.79	16.72	3.76	49 23.7	3 28.3
8	9	. .	16.5	35.5	54.	12.4	. .	. .	52 53.83	27.96	1.19	IV.	3	21.634	38 44.90	16.90	8.18	52 24.7	33 21 40.0
9	8.9	. .	. .	. .	. .	37.	55.2	. .	53 18.61	27.96	1.24	V.	5	52.871	5 56.98	16.94	0.19	52 49.4	32 48 44.1
10	9.10	. .	. .	. .	. .	34.2	. .	. .	56 15.55	27.94	1.17	V.	2	14.586	46 1.96	17.12	10.01	55 46.4	33 28 59.1
11	9	. .	. .	52.3	10.2	29.3	47.4	. .	12 59 10.57	27.92	1.18	IV.	3	24.388	35 52.27	17.30	7.45	12 58 41.5	18 47.0
12	9.10	. .	. .	16.4	35.1	. .	11.5	. .	13 0 34.86	27.92	1.18	IV.	3	24.287	35 58.60	17.38	7.48	13 0 5.8	18 53.5
13	9	. .	. .	. .	. .	29.2	47.4	. .	1 10.51	27.91	1.15	V.	2	11.086	49 41.40	17.42	10.96	0 41.5	33 32 39.8
14	10.11	. .	45.2	. .	21.8	. .	57.	. .	5 21.37	27.90	1.23	IV.	5	52.614	6 13.06	17.67	0.25	4 52.2	32 49 1.0
15	9.10	. .	. .	17.2	35.3	. .	. .	. .	5 35.41	27.90	1.19	IV.	3	34.713	25 4.29	17.69	4.79	5 6.3	33 7 56.8
16	9.10	. .	. .	. .	. .	56.8	15.2	. .	6 38.41	27.90	1.18	V.	3	27.806	32 17.65	17.75	6.58	6 9.3	15 12.0
17	9	. .	. .	. .	. .	. .	59.3	. .	7 22.53	27.90	1.16	VI.	3	21.912	38 27.20	17.79	8.13	6 53.5	21 23.1
18	10	. .	. .	. .	. .	. .	20.2	. .	7 43.44	27.89	1.17	VI.	3	23.478	36 49.22	17.81	7.71	7 14.4	19 44.7
19	10	. .	29.2	. .	6.3	. .	. .	. .	10 6.22	27.87	1.16	IV.	3	23.468	36 49.97	17.96	7.71	9 37.2	33 19 45.6
20	9	. .	58.5	17.	35.2	53.4	. .	. .	12 35.30	27.86	1.21	IV.	5	49.712	9 15.15	18.14	0.97	12 6.2	32 52 4.3
21	10	. .	. .	. .	28.8	. .	. .	. .	13 28.64	27.86	1.16	IV.	3	31.861	28 3.18	18.15	5.53	12 59.6	33 10 56.9
22	10	. .	. .	. .	27.2	. .	4.7	. .	14 27.53	27.85	1.17	IV.	3	32.968	26 53.77	18.21	5.26	13 58.5	9 47.2
23	9	. .	13.3	31.9	50.2	8.2	. .	. .	16 50.15	27.84	1.13	IV.	2	13.376	47 17.53	18.40	10.37	16 21.2	30 16.3
24	10	. .	. .	. .	54.3	. .	. .	. .	17 54.15	27.83	1.02	IV.	3	27.366	32 45.44	18.41	6.69	17 25.3	15 40.5
25	8.9	. .	. .	. .	28.	46.3	4.7	. .	18 27.90	27.83	1.15	IV.	3	29.776	30 13.99	18.44	6.06	17 58.9	33 13 8.5
26	9	. .	38.3	56.8	15.2	33.8	. .	. .	20 15.29	27.82	1.18	IV.	5	46.631	12 28.60	18.55	1.75	19 46.3	32 55 18.9
27	9	. .	. .	33.	51.	9.5	27.7	. .	22 51.08	27.81	1.13	IV.	3	24.509	35 44.61	18.69	7.43	22 22.1	33 18 40.7
28	9	. .	31.1	49.3	8.	. .	. .	. .	26 7.93	27.79	1.13	IV.	3	25.396	34 49.03	18.87	7.40	25 39.0	17 45.3
29	9	. .	. .	. .	. .	29.5	48.3	. .	26 11.06	27.79	1.09	V.	2	7.066	53 53.49	18.87	11.97	25 42.2	36 24.3
30	9	. .	. .	. .	25.7	44.	2.8	. .	27 25.73	27.78	1.14	IV.	3	28.238	31 50.67	18.94	6.44	26 56.8	14 46.1
31	10	. .	. .	15.3	. .	. .	11.	. .	29 34.01	27.77	1.09	IV.	2	11.479	49 17.50	19.05	10.87	29 5.1	32 17.4
32	8.9	. .	. .	5.3	23.5	42.2	60.6	. .	32 23.63	27.79	1.09	IV.	2	8.244	52 39.37	19.20	11.69	31 54.8	33 35 40.3
33	8	. .	. .	21.3	39.3	58.1	. .	. .	33 39.63	27.75	1.17	IV.	5	51.558	7 19.36	19.28	0.47	33 10.7	32 50 9.1
34	10	. .	. .	. .	. .	. .	15.2	. .	33 38.50	27.75	1.14	VI.	4	42.992	16 16.36	19.28	2.73	33 9.6	32 59 8.4
35	8.9	. .	. .	. .	. .	. .	. .	. .	34	27.74	1.12	VII.+	3	29.755	30 14.93	19.32	6.06	. . .	33 13 10.3
36	10	. .	. .	. .	23.	41.8	. .	. .	37 23.10	27.73	1.12	IV.	3	29.938	30 3.82	19.46	6.02	36 54.3	33 12 59.3
37	9	. .	. .	. .	20.	38.4	56.5	. .	38 19.91	27.73	1.14	IV.	4	45.105	14 3.18	19.51	2.13	37 51.0	32 56 54.8
38	9	. .	. .	53.8	12.2	30.5	49.3	. .	41 12.27	27.71	1.13	IV.	3	38.158	21 28.25	19.66	3.91	40 43.4	33 4 21.8
39	9.10	. .	. .	36.3	54.9	. .	31.3	. .	42 54.73	27.70	1.12	IV.	3	40.168	19 22.12	19.74	3.38	42 25.9	2 15.2
40	9.10	. .	. .	. .	. .	23.2	41.7	. .	43 4.90	27.69	1.11	V.	3	33.946	25 52.41	19.75	5.04	42 36.1	8 47.2
41	10	. .	. .	. .	. .	. .	25.3	. .	43 48.61	27.69	1.10	VI.	3	32.074	27 49.81	19.78	5.48	43 19.8	33 10 45.1
42	9.10	. .	. .	. .	23.1	41.3	. .	. .	45 23.00	27.68	1.14	IV.	5	51.458	7 25.69	19.85	0.52	44 54.2	32 50 16.1
43	9.10	. .	21.1	39.4	57.8	. .	. .	. .	47 57.87	27.67	1.10	IV.	3	34.520	25 16.53	19.98	4.83	47 29.1	33 8 11.3
44	9	. .	6.0	24.2	43.	. .	. .	. .	49 42.94	27.66	1.06	III.	2	16.223	44 18.41	20.05	9.62	49 14.2	27 18.1
45	9	. .	. .	. .	48.8	7.	25.3	. .	49 48.60	27.66	1.09	IV.	3	28.527	31 32.54	20.06	6.40	49 19.9	14 29.0
46	9	. .	. .	. .	. .	44.8	3.5	. .	50 26.56	27.65	1.08	IV.	3	27.828	32 16.21	20.09	6.59	49 57.8	33 15 12.9
47	9	. .	. .	. .	. .	46.3	. .	. .	51 28.04	27.64	1.14	V.	5	53.265	5 32.45	20.13	0.05	50 59.2	32 48 22.6
48	9.10	. .	. .	. .	35.2	53.8	12.4	. .	52 35.31	27.63	1.06	IV.	2	19.558	40 49.73	20.17	8.74	52 6.6	33 23 48.6
49	10	. .	59.3	. .	. .	. .	. .	. .	13 55 56.41	−27.62	−1.06	II.	2	17.794	−42 38.93	−20.30	− 9.12	13 55 7.8	− 33 25 38.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 240	Mar, 23,	12 20	. .	. .	. .	. .	. .	. .	. .	30.340	44.8	39.9	. .	43.5	45.
		12 40	92 2 {27.4 27.3	32.2 32.0	34.3 33.8	30.2 30.7	26.4 26.2	17.9 18.1	} 28.05						
		13 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	39.5			
		13 20	. .	. .	. .	. .	. .	. .	. .	30.340	44.8	39.1			
		13 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	38.5			
		14 0	. .	. .	. .	. .	. .	. .	. .	30.336	44.8	37.9			
		14 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	37.2			
		14 40	{27.6 27.4	31.7 31.2	33.2 33.1	29.2 29.8	26.1 26.4	16.7 16.8	} 27.43	30.330	44.8	36.9	49.	43.	45.5

ZONE 240. MARCH 23. C. $D_0 = -32° 42' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.		r.	′ ″	″	″	h. m. s.	° ′ ″
50	9	. .	. .	. .	17.5	36.	54.3	. .	13 56 17.54	−27.61	−1.10	IV.	3 39.411	−20 9.68	−20.33	− 3.56	13 55 48.8	− 33 3 3.6
51	9	. .	. .	11.2	29.3	. .	6.3	. .	13 57 29.50	27.60	1.11	IV.	4 43.708	15 30.79	20.38	2.48	57 0.8	32 58 23.7
52	10	. .	. .	59.3	. .	. .	. .	. .	14 0 17.86	27.59	1.11	III.	5 48.036	10 59.98	20.50	1.38	13 59 49.2	53 51.8
53	10	. .	. .	. .	. .	49.2	. .	. .	0 30.92	27.59	1.11	V.	5 49.804	9 9.50	20.51	0.92	14 0 2.2	32 52 0.9
54	10	. .	. .	. .	. .	. .	. .	. .	1	27.58	1.07	VI.	3 29.880	30 7.34	20.55	6.03	1	33 13 3.9
55	9.10	. .	14.7	33.2	. .	. .	. .	. .	4 51.70	27.56	1.10	III.	5 50.143	8 47.79	20.67	− 0.83	4 23.0	32 51 39.3
56	9.10	. .	. .	. .	54.7	. .	21.2	. .	4 54.54	27.56	1.11	IV.	5 53.572	5 12.93	20.66	+ 0.02	4 25.9	48 3.6
57	9.10	. .	. .	. .	. .	20.5	38.5	. .	5 2.02	27.56	1.11	V.	5 53.075	5 43.99	20.68	− 0.10	4 33.4	48 34.8
58	10	. .	58.5	16.5	35.2	. .	. .	. .	10 35.18	27.53	1.08	IV.	4 43.861	15 21.12	20.88	2.44	10 6.6	32 58 14.4
59	10	. .	. .	. .	36.5	. .	. .	. .	11 36.35	27.52	1.05	IV.	3 28.102	31 59.15	20.91	6.50	11 7.8	33 14 56.6
60	10	. .	. .	. .	. .	. .	49.8	. .	12 13.10	27.51	1.08	V.	4 42.594	16 41.15	20.93	2.76	11 44.5	32 59 34.8
61	10	. .	. .	. .	. .	. .	27.5	. .	12 50.61	27.50	1.00	VI.	2 10.128	50 41.73	20.95	11.25	12 22.1	33 33 43.9
62	10.11	. .	. .	59.4	. .	. .	. .	. .	15 17.87	27.48	1.05	III.	3 32.698	27 10.54	21.03	5.30	14 49.3	10 6.9
63	10	. .	. .	. .	. .	5.	. .	. .	15 42.04	27.48	1.04	V.	3 28.492	31 34.80	21.04	6.39	15 13.5	14 32.2
64	9.10	. .	14.	. .	51.1	9.4	. .	. .	19 50.97	27.46	1.03	IV.	3 31.856	28 3.49	21.17	5.53	19 22.5	33 11 0.2
65	8.9	. .	8.1	26.6	44.8	3.4	21.3	. .	21 44.91	27.45	1.06	IV.	4 45.294	13 50.37	21.23	2.07	21 16.4	32 56 43.7
66	10.11	. .	. .	. .	. .	4.3	. .	. .	23 45.98	27.43	1.04	V.	4 45.736	13 23.89	21.27	1.96	23 17.5	32 56 17.1
67	10	. .	29.5	. .	. .	. .	43.2	. .	27? 6.49	27.40	1.02	IV.	3 35.738	23 59.98	21.36	4.52	26? 38.1	33 6 55.9
68	9.10	. .	10.8	. .	. .	6.5	24.8	. .	32 47.96	27.38	1.01	IV.	3 25.125	35 5.90	21.49	7.28	32 19.6	33 18 4.7
69	9	. .	. .	. .	. .	58.3	16.5	. .	33 39.88	27.37	1.03	V.	4 42.891	16 22.38	21.51	2.69	33 11.5	32 59 16.6
70	9.10	. . .	5.7	24.4	43.	1.5	20.	. .	37 42.96	27.33	1.00	IV.	3 34.964	24 48.53	21.59	4.71	37 14.6	33 7 44.8
71	10	. .	59.8	. .	36.2	55.	. .	. .	40 36.47	27.32	0.97	IV.	2 19.995	40 22.19	21.65	8.64	40 8.2	23 22.5
72	9	. .	33.5	52.3	10.5	29.	. .	. .	44 10.57	27.29	1.00	IV.	4 41.877	17 25.64	21.69	2.93	43 42.3	0 20.3
73	9	. .	. .	47.2	. .	24.2	42.8	. .	45 5.87	27.27	1.00	IV.	4 38.021	21 27.68	21.71	3.85	44 37.6	4 23.2
74	9	. .	. .	. .	12.1	30.8	49.2	. .	45 12.30	27.27	1.00	IV.	4 40.866	18 29.08	21.71	3.18	44 44.0	1 24.0
75	6.7	. .	. .	43.1	1.3	20.2	38.2	. .	14 47 1.49	−27.26	−0.98	IV.	3 28.558	−31 30.60	−21.74	− 6.37	14 46 33.2	− 33 14 28.7

ZONE 241. MARCH 29. C. $D_0 = -29° 34' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.		i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	4.2	22.5	. .	. .	. .	. .	11 52 40.19	−32.36	−0.18	III.	5 48.041	−10 59.66	− 2.12	− 6.32	11 52 7.6	− 29 45 48.1
2	8.9	. .	. .	0.2	18.2	35.8	53.4	. .	53 18.05	32.36	0.18	IV.	5 47.834	11 12.96	2.17	6.36	52 45.5	46 1.5
3	8.9	. .	31.5	48.	5.8	23.3	41.3	. .	55 5.84	32.35	0.18	IV.	5 47.632	11 25.77	2.32	6.40	54 33.3	46 14.5
4	9.10	. .	. .	32.3	50.2	. .	. .	. .	56 50.15	32.35	0.21	IV.	5 46.586	12 31.42	2.47	6.61	56 17.6	29 47 20.5
5	8	. .	. .	. .	25.2	43.3	0.8	. .	57 25.19	32.35	0.76	IV.	2 14.442	46 10.67	2.52	13.23	56 52.1	30 21 6.4
6	10	. .	. .	43.3	1.3	. .	. .	. .	59 1.19	32.35	0.61	IV.	3 23.656	36 38.06	2.64	11.31	58 28.2	11 32.0
7	10	. .	. .	. .	. .	29.2	. .	. .	11 59 11.30	32.35	0.61	V.	3 24.687	35 33.38	2.66	11.09	58 38.3	30 10 27.1
8	10	. .	. .	. .	. .	22.3	. .	. .	12 0 4.55	32.35	0.28	V.	5 41.749	17 35.12	2.74	7.60	11 59 31.9	29 52 25.5
9	8	. .	. .	. .	. .	8.7	26.6	. .	0 50.85	32.35	0.71	V.	2 17.071	43 26.03	2.80	12.69	12 0 17.8	30 18 21.5
10	9	. .	. .	. .	. .	. .	47.5?	. .	1 12.00	32.35	0.53	VI.	3 27.428	32 41.48	2.83	10.53	0 39.1	30 7 34.8
11	8	. .	. .	12.3	30.1	47.7	5.6	. .	4 30.08	32.34	0.17	IV.	5 47.770	11 16.99	3.08	6.38	3 57.6	29 46 6.5
12	9	. .	. .	. .	. .	59.2	. .	. .	5 41.08	32.34	0.87	V.	2 7.656	53 16.49	3.17	14.66	5 7.9	30 28 14.3
13	10	. .	9.2	26.	. .	1.8	. .	. .	8 43.93	32.33	0.57	III.	3 24.998	35 13.62	3.40	11.03	8 11.0	10 8.1
14	9.10	. .	. .	. .	44.2	2.	20.5	. .	8 44.35	32.33	0.68	IV.	2 18.795	41 37.39	3.40	12.32	8 11.4	16 33.1
15	9	. .	55.2	. .	31.1	49.2	6.4	. .	10 31.02	32.33	0.78	IV.	2 13.481	47 10.94	3.54	13.44	9 57.9	22 7.9
16	9.10	. .	. .	3.5	21.3	. .	57.	. .	12 21.34	32.33	0.48	IV.	3 30.015	29 59.06	3.66	10.00	11 48.5	30 4 52.7
17	9	. .	. .	. .	31.5	49.2	6.8	. .	13 31.39	32.32	0.14	IV.	5 49.156	9 50.11	3.75	6.10	12 58.9	29 44 40.0
18	9	. .	. .	. .	12.8	30.7	. .	. .	14 12.86	32.32	0.05	IV.	5 54.436	4 18.75	3.80	5.02	13 40.5	29 39 7.6
19	9.10	. .	. .	. .	. .	. .	30.7	. .	12 14 55.09	−32.32	−0.74	VI.	2 14.867	−45 44.39	− 3.85	−13.15	12 14 22.0	− 30 20 41.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(240) 56. Time of transit over T. VI assumed as 31ˢ.2 instead of 21 .2.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 241	Mar. 29, 11 50	88 54 61.9	63.7	66.2	58.8	58.9	53.8	60.55	30.050	51.5	49.1	49.	50.7	50.
	12 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.8			
	12 20	. .	. .	. .	. .	. .	. .	. .	30.050	51.3	48.2			
	12 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.6			
	13 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.5			
	13 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	48 1			
	13 45	. .	. .	. .	. .	. .	. .	. .	30.036	51.	46.9			
	13 50	61.6	63.9	66.8	58.1	58.9	53.4	60.45	. .	. .	. .	. .	48.5	49.

ZONE 241. MARCH 29. C. $D_0 = -29° 34' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
20	10	. .	. .	. .	27.3	. .	. .	. .	12 16 27.17	−32.32	−0.24	IV.	4	42.737	−16 31.67	− 3.96	− 7.40	12 15 54.6	− 29 51 23.0
21	9.10	. .	. .	. .	. .	. .	19.2	. .	16 43.67	32.32	0.06	VI.	5	53.287	5 31.19	4.02	5.24	16 11.3	29 40 20.5
22	9	. .	. .	. .	. .	22.3	40.4	. .	18 4.56	32.31	0.69	V.	2	17.515	42 58.31	4.08	12.60	17 31.6	30 17 55.0
23	10	. .	. .	31.3	. .	6.5	. .	. .	19 49.00	32.31	0.22	IV.	4	44.225	14 58.47	4.21	7.09	19 16.5	29 49 49.8
24	9.10	. .	. .	37.2	. .	12.5	. .	. .	21 54.88	32.31	0.38	IV.	3	34.895	24 52.82	4.35	8.99	21 22.2	29 59 46.2
25	9	. .	. .	. .	. .	41.2	. .	. .	22 23.18	32.31	0.71	V.	2	16.362	44 10.62	4.38	12.84	21 50.2	30 19 7.8
26	9.10	. .	. .	. .	. .	. .	24.3	. .	22 48.78	32.30	0.12	VI.	5	50.421	8 31.16	4.41	5.82	22 16.4	29 43 21.4
27	8	. .	. .	. .	. .	. .	8.3	. .	23 32.79	32.30	0.23	VI.	4	43.283	15 58.27	4.46	7.30	23 0.3	29 50 50.0
28	8	. .	. .	. .	. .	33.	50.5	. .	24 15.04	32.30	0.54	V.	3	25.943	34 14.52	4.51	10.83	23 42.2	30 9 9.8
29	10	. .	. .	. .	. .	. .	16.2	. .	24 40.72	32.30	0.49	VI.	3	29.071	30 58.29	4.53	10.20	24 7.9	30 5 53.0
30	10	. .	. .	. .	8.7	. .	. .	. .	30 8.58	32.29	0.12	IV.	5	49.264	9 43.40	4.91	6.05	29 36.2	29 44 34.4
31	9	. .	. .	. .	52.3	9.9	27.6	. .	30 52.13	32.29	0.31	IV.	3	38.606	21 0.08	4.96	8.23	30 19.5	29 55 53.3
32	8	. .	43.3	. .	19.5	37.3	55.4	. .	35 19.45	32.28	0.51	IV.	3	27.652	32 27.38	5.24	10.48	34 46.6	30 7 23.1
33	10	. .	. .	. .	20.8	38.8	. .	. .	38 20.83	32.27	0.36	IV.	3	35.314	24 26.77	5.44	8.91	37 48.2	29 59 21.1
34	10	. .	. .	45.4	2.2	. .	38.2	. .	40 2.69	32.26	0.27	IV.	4	40.120	19 16.03	5.55	7.93	39 30.2	29 54 9.5
35	9.10	. .	. .	. .	22.8	. .	59.5	. .	41 23.30	32.26	0.76	IV.	2	12.712	47 58.98	5.63	13.62	40 50.3	30 22 58.2
36	9.10	. .	. .	. .	. .	. .	57.5	. .	41 21.89	32.26	0.71	VI.	2	15.316	45 16.48	5.63	13.07	40 48.9	30 20 15.2
37	8	. .	. .	. .	53.2	11.	. .	. .	42 53.19	32.25	0.12	IV.	5	48.321	10 42.58	5.72	6.26	42 20.8	29 45 34.6
38	8.9	. .	59.2	17.2	34.8	52.4	. .	. .	44 34.87	32.25	0.19	IV.	4	44.398	14 47.61	5.83	7.00	44 2.4	29 49 40.4
39	8	. .	. .	. .	. .	. .	. .	. .	44	32.25	0.63	VII.	2	19.398	41 0.51	. .	12.19	44	30 15 58.5
40	9	. .	36.5	54.3	12.7	. .	48.5	. .	49 12.53	32.23	0.62	IV.	2	19.208	41 11.68	6.12	12.24	48 39.7	16 10.0
41	9	. .	. .	30.6	48.5	6.5	. .	. .	50 48.48	32.23	0.55	IV.	3	24.028	36 14.66	6.22	11.24	50 15.7	30 11 12.1
42	9	. .	. .	15.3	33.4	. .	8.4	. .	52 33.13	32.23	0.15	IV.	5	46.496	12 43.41	6.32	6.62	52 0.8	29 47 36.4
43	8	. .	34.9	53.2	10.8	28.6	45.9	. .	54 10.71	32.22	0.40	IV.	3	32.359	27 32.19	6.42	9.51	53 38.1	30 2 28.1
44	10	. .	28.3	46.1	4.	. .	. .	. .	56 3.99	32.21	0.12	IV.	5	47.491	11 34.68	6.53	6.41	55 31.7	29 46 27.6
45	10	. .	. .	43.	0.5	. .	35.5	. .	58 0.42	32.20	0.31	IV.	3	36.552	23 9.02	6.64	8.65	57 27.9	58 4.3
46	10	. .	38.2	. .	. .	32.2	49.3	. .	58 14.06	32.20	−0.31	IV.	3	36.966	22 42.92	6.65	8.57	57 41.6	57 38.1
47	8.9	. .	. .	. .	58.5	16.3	34.1	. .	12 59 58.54	32.20	+0.03	IV.	5	55.698	2 59.41	6.76	4.74	12 59 26.4	37 50.9
48	9.10	. .	. .	25.4	42.9	0.8	. .	. .	13 1 43.05	32.19	−0.15	IV.	4	45.618	13 30.98	6.86	6.79	13 1 10.7	29 48 24.6
49	9	. .	. .	. .	34.2	52.3	. .	. .	3 34.20	32.19	0.67	IV.	2	16.305	44 19.29	6.96	12.83	3 1.3	30 19 19.1
50	8.9	. .	. .	25.	43.2	1.	. .	. .	4 43.02	32.18	0.61	IV.	2	19.472	40 55.18	7.03	12.18	4 10.2	15 54.4
51	9	. .	. .	. .	. .	24.2	41.8	. .	5 6.31	32.18	0.48	V.	3	26.968	33 10.28	7.05	10.63	4 33.7	30 8 8.0
52	8.9	. .	. .	. .	. .	. .	. .	. .	5	. .	0.26	VII.	4	39.169	20 16.52	7.09	8.11	5	29 55 11.7
53	10	. .	. .	. .	40.2	. .	. .	. .	7 40.08	32.17	0.10	IV.	5	48.256	10 46.66	7.20	6.26	7 7.8	45 40.1
54	8	. .	33.	50.8	8.3	26.4	43.8	. .	9 8.52	32.17	0.13	IV.	5	46.145	12 59.09	7.28	6.68	8 36.2	47 53.1
55	8.9	. .	. .	2.	19.7	37.3	55.4	. .	10 19.72	32.16	0.28	IV.	3	38.150	21 28.75	7.35	8.33	9 47.3	29 56 24.4
56	8	. .	. .	12.3	29.9	47.9	5.6	. .	11 30.02	32.16	0.43	IV.	3	29.266	30 46.17	7.44	10.15	10 57.4	30 5 43.8
57	9	. .	3.8	21.3	39.3	57.4	15.4	. .	14 39.47	32.15	0.36	IV.	3	33.576	26 15.69	7.58	9.28	14 7.0	1 12.6
58	8.9	. .	44.3	. .	20.	. .	55.5	. .	17 20.01	32.14	0.74	IV.	2	11.024	49 44.85	7.74	13.99	16 47.1	24 46.6
59	9.10	. .	. .	. .	36.5	54.6	12.3	. .	18 36.54	32.13	0.74	IV.	2	11.086	49 41.02	7.80	13.97	18 3.7	24 42.8
60	8.9	. .	. .	. .	55.7	13.6	31.5	. .	19 55.79	32.12	0.33	IV.	3	34.391	25 24.69	7.88	9.08	19 23.3	0 21.6
61	9	. .	. .	. .	6.2	25.	42.3	. .	21 6.63	32.12	0.59	V.	2	19.535	40 51.54	7.94	12.18	20 33.9	15 51.7
62	8	. .	19.2	37.5	55.	12.8	30.4	. .	23 55.01	32.11	0.61	IV.	2	18.645	41 46.93	8.09	12.36	23 22.3	30 16 47.4
63	9.10	. .	10.3	. .	46.	4.3	. .	. .	25 46.17	32.10	0.18	IV.	4	42.632	16 38.37	8.19	7.41	25 13.9	29 51 34.0
64	9.10	. .	. .	49.8	7.5	25.3	. .	. .	28 7.48	32.09	0.57	IV.	2	19.883	40 29.15	8.32	12.10	27 34.8	30 15 29.6
65	10	. .	. .	. .	. .	57.5	15.3	. .	28 39.69	32.09	0.47	VI.	3	25.368	34 50.73	8.35	10.97	28 7.1	30 9 50.1
66	9.10	. .	32.3	50.5	8.3	. .	. .	. .	31 8.20	32.08	0.30	IV.	3	35.048	24 5.69	8.48	7.83	30 35.8	29 59 2.0
67	9	. .	. .	. .	. .	46.5	4.3	. .	31 28.72	32.08	0.43	V.	3	27.806	32 17.65	8.49	10.49	30 56.2	30 7 16.6
68	10	. .	. .	7.2	25.1	. .	. .	. .	13 33 25.03	−32.07	−0.46	IV.	3	25.855	−34 19.99	− 8.60	−10.87	13 32 52.5	− 30 9 19.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point,	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 241. MARCH 29. C. $D_\circ = -29° 34' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
69	10	..	..	..	..	..	4.2	..	13 34 28.70	−32.06	−0.22	VI.	4	40.475	−18 54.50	− 8.65	− 7.84	13 33 56.4	− 29 53 51.0
70	9	..	56.1	13.3	31.9	49.3	..	..	37 31.62	32.05	+0.01	IV.	5	52.629	6 12.11	8.82	5.34	36 59.6	41 6.3
71	9	..	..	..	18.5	36.5	54.2	..	38 18.62	32.05	−0.02	IV.	5	50.646	8 16.53	8.86	5.73	37 46.5	43 11.1
72	8.9	..	48.1	6.2	24.	..	59.6	..	40 23.98	32.04	0.30	IV.	3	34.841	24 56.19	8.97	8.99	39 51.6	59 54.1
73	8	..	..	42.5	0.2	17.5	35.4	..	41 0.01	32.03	0.28	IV.	3	36.001	22 40.76	9.00	8.55	40 27.7	29 57 38.3
74	8	..	..	..	..	37.6	55.2	..	42 19.60	32.03	0.63	V.	2	16.417	44 7.17	9.07	12.86	41 46.9	30 19 9.1
75	8	..	..	..	..	56.2	14.2	..	42 38.33	32.03	0.77	V.	2	8.476	52 25.20	9.08	14.54	42 5.5	27 28.8
76	8	..	..	..	16.2	34.	51.5	..	44 16.09	32.02	0.35	IV.	3	32.440	27 27.10	9.17	9.49	43 43.7	30 2 25.8
77	9	..	..	..	..	..	11.8	..	44 36.28	32.02	0.03	VI.	5	49.963	8 59.65	9.19	5.87	44 4.2	29 43 54.7
78	8	..	..	..	51.	8.5	26.3	..	47 50.80	32.00	0.14	IV.	4	43.768	15 26.95	9.35	7.19	47 18.7	29 50 23.5
79	8	..	..	20.	37.3	55.2	..	..	49 37.45	31.99	0.63	IV.	2	15.573	44 59.67	9.45	13.03	49 4.8	30 20 2.2
80	8	..	..	..	..	8.2	26.3	..	13 49 50.50	−31.99	−0.52	V.	2	21.646	−38 39.06	− 9.46	−11.64	13 49 18.0	− 30 13 40.2

ZONE 242. MARCH 30. S. $D_\circ = -36° 30' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	..	..	..	54.	13.	..	11 39 34.66	−33.08	−0.96	.	4	42.978	−16 16.99	− 1.11	−11.49	11 39 0.62	− 36 47 19.6
2	9	..	..	..	52.	..	31.	..	40 52.16	33.08	0.47	VI.	2	14.600	46 1.20	1.24	21.44	40 18.61	37 17 13.9
3	9	..	..	..	30.	..	..	..	42 29.94	33.08	0.41	.	2	12.212	48 30.46	1.42	22.43	41 56.45	37 19 44.3
4	8	..	..	18.	37.2	..	..	..	43 37.23	33.08	0.91	IV.	4	39.658	19 44.96	1.53	12.62	43 3.24	36 50 49.1
5	9	..	..	..	..	22.	..	..	44 2.78	33.07	0.94	.	4	42.573	16 42.46	1.58	11.60	43 28.77	47 45.6
6	6.7	..	..	..	16.8	..	..	..	45 16.65	33.07	0.84	.	3	35.770	23 57.91	1.72	13.98	44 42.74	36 55 3.6
7	7	..	..	..	..	2.	21.5	..	45 42.76	33.07	0.59	V.	2	22.332	37 56.15	1.76	18.75	45 9.10	37 9 6.7
8	8	..	..	..	13.5	..	..	..	47 13.37	33.07	0.96	.	4	44.336	14 51.56	1.93	11.01	46 39.34	36 45 54.5
9	6.5	..	..	..	..	..	7.2	..	47 28.75	33.07	0.82	.	3	35.833	23 54.27	1.96	13.90	46 54.86	55 0.1
10	9	..	1.8	21.	40.	..	..	..	50 40.26	33.06	0.93	IV.	4	41.482	17 50.62	2.30	12.00	50 6.27	48 54.9
11	10	..	..	..	..	..	36.5	..	51 58.05	33.06	1.10	.	5	52.122	6 44.13	2.43	8.30	51 23.89	37 44.9
12	8	..	..	24.8	43.8	..	..	..	53 43.97	33.06	1.09	IV.	5	51.230	7 40.00	2.60	8.60	53 9.82	36 38 41.2
13	10	..	..	41.	..	..	..	..	55 0.44	33.05	0.54	.	2	18.080	42 21.80	2.73	20.28	54 26.85	37 13 34.8
14	10	..	..	..	..	..	24.	..	56 45.55	33.05	0.93	.	4	42.322	16 58.52	2.92	11.67	56 11.57	36 48 3.1
15	8	..	..	..	20.	..	..	..	58 19.87	33.04	1.05	.	4	47.121	11 56.64	3.07	10.03	57 45.78	36 42 59.7
16	5	..	..	..	29.	48.	..	..	11 59 28.76	33.04	0.73	IV.	2	29.650	30 16.56	3.19	16.12	11 58 54.99	37 1 25.9
17	9	..	..	9.	28.5	..	..	..	12 1 28.36	33.04	0.84	IV.	4	36.382	23 10.65	3.37	13.76	12 0 54.48	36 54 17.8
18	4	..	42.5	2.5	21.5	..	..	..	3 21.49	33.04	0.73	IV.	3	29.108	30 56.03	3.55	16.31	2 47.72	37 2 5.9
19	8	..	..	41.	..	..	..	..	4 0.43	33.04	1.00	.	4	45.450	13 41.03	3.61	10.61	3 26.39	36 44 45.2
20	6	..	..	..	35.	..	13	..	5 34.71	33.03	1.07	IV.	5	48.550	10 28.16	3.75	9.51	5 0.61	41 31.4
21	10	..	..	12.5	..	..	10.2	..	7 31.81	33.02	0.81	III.	3	34.518	25 17.47	3.93	14.42	6 57.98	36 56 25.8
22	11	..	..	..	45.	..	..	..	9 44.89	33.02	0.58	.	2	22.226	38 2.37	4.15	18.79	9 11.29	37 9 15.3
23	5	..	10.2	29.8	48.8	..	..	..	12 48.92	33.01	0.76	IV.	3	33.082	26 46.69	4.41	14.93	12 15.15	36 57 56.0
24	6.5	..	..	..	55.	14.	33.5	..	15 54.93	33.00	1.09	.	4	50.522	8 23.25	4.68	8.85	15 20.84	39 26.8
25	10	..	12.8	..	51.2	..	..	..	18 51.29	33.00	0.91	IV.	3	39.162	20 25.24	4.94	12.79	18 17.38	36 51 32.9
26	7	..	..	35.	..	..	..	..	20 54.46	32.99	0.47	V.	2	15.632	44 56.29	5.10	21.17	20 21.00	37 15 22.6
27	6.5	..	..	..	..	49.	8.6	..	21 29.82	32.99	0.59	.	3	23.358	36 56.88	5.15	18.36	20 56.24	8 10.4
28	10	..	..	55.8	..	..	..	..	24 15.17	32.98	0.65	.	3	26.322	33 50.75	5.37	17.30	23 41.54	5 3.4
29	6	..	..	..	20.	39.2	..	..	25 19.79	32.98	0.47	IV.	2	16.942	43 33.68	5.44	20.72	24 46.34	37 14 49.8
30	10	..	..	21.	..	..	..	..	28 40.37	32.97	0.79	.	3	34.218	25 35.29	5.71	14.53	28 6.61	36 56 45.5
31	9	..	..	16.	..	54.8	..	..	30 35.33	32.96	0.36	III.	2	8.949	51 54.41	5.86	23.62	30 2.01	37 23 13.9
32	6	..	6.3	25.2	45.	..	..	..	32 44.83	32.95	0.71	IV.	3	29.293	30 44.54	6.02	16.24	32 11.17	1 56.8
33	7	..	..	..	14.2	..	..	..	12 34 14.05	−32.95	−0.69	.	3	27.553	−32 33.65	− 6.13	−16.88	12 33 40.41	− 37 3 46.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(241) 73. Micrometer revolutions assumed as 37.001, not 35.001.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 242	Mar. 30, 11 30	95 49 60.	63.2	65.	57.0	57.5	54.0	59.45						
	11 40	.	.	.	.	.	.	.	30.070	55.	49.2	..	..	52.5
	12 0	.	.	.	.	.	.	.	. .	..	49.7			
	12 15	63.	63.6	66.2	57.0	59.2	53.	60.33						
	12 20	.	.	.	.	.	.	.	. .	..	49.3			
	13 0	.	.	.	.	.	.	.	30.052	..	48.9	..	..	..
	13 40	.	.	.	.	.	.	.	. .	..	49.6			
	14 20	.	.	.	.	.	.	.	. .	..	50.6			
	14 45	62.8	63.6	66.2	57.0	59.0	53.	60.27						

Ex. therm. assumed 49.5.

ZONE 242. MARCH 30. S. $D_0 = -36° 30' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
34	7	. .	. .	. .	. .	. .	8.	. .	12 34 29.49	−32.95	−0.63	.	3	24.272	−35 59.35	− 6.15	−18.04	12 33 55.91	− 37 7 13.5
35	7	. .	. .	. .	17.	. .	. .	. .	36 16.86	32.94	0.87	.	4	38.062	21 25.10	6.28	13.18	35 43.05	36 52 34.6
36	9	. .	. .	. .	. .	. .	36.5	. .	37 58.05	32.93	0.79	.	3	33.625	26 12.44	6.40	14.73	37 24.33	57 23.6
37	6	. .	. .	. .	. .	23.5	42.5	. .	38 4.12	32.93	0.74	.	3	31.202	28 44.71	6.41	15.58	37 30.45	36 59 56.7
38	8	. .	20.3	39.7	. .	. .	. .	. .	41 59.05	32.92	0.69	.	3	28.202	31 52.74	6.68	16.65	41 25.44	37 3 6.1
39	6	. .	. .	14.	. .	. .	. .	. .	42 33.45	32.92	1.08	.	5	50.302	8 37.87	6.72	8.91	41 59.45	36 39 43.5
40	6.7	. .	. .	. .	. .	17.5	. .	. .	42 58.09	32.92	0.63	.	3	24.439	35 49.06	6.75	17.96	42 24.54	37 7 3.8
41	7.6	. .	. .	. .	. .	. .	12.	. .	43 33.55	32.92	1.03	.	5	48.419	10 37.06	6.79	9.60	42 59.60	36 41 43.4
42	9	. .	. .	. .	46.5	. .	. .	. .	45 46.43	32.90	0.43	.	2	13.950	46 41.34	6.93	21.78	45 13.10	37 18 0.1
43	9	. .	19.	. .	57.5	. .	. .	. .	50 57.55	32.88	0.73	.	3	30.650	29 19.29	7.28	15.77	50 23.94	37 0 32.3
44	8	. .	. .	. .	44.8	4.	. .	. .	54 44.77	32.87	1.10	.	5	51.678	7 11.75	7.52	8.42	54 10.80	36 38 17.7
45	6.7	. .	7.2	. .	46.	. .	. .	. .	56 45.90	32.86	0.75	.	3	31.992	27 55.02	7.64	15.30	56 12.29	59 8.0
46	7	. .	. .	. .	. .	33.	. .	. .	57 13.82	32.86	1.03	.	5	47.179	11 54.45	7.66	10.00	56 39.93	43 2.1
47	8	. .	. .	52.8	. .	. .	. .	. .	59 12.17	32.85	0.80	.	3	34.770	25 0.46	7.79	14.33	58 38.52	56 12.6
48	6.7	. .	. .	. .	. .	25.7	45.	. .	12 59 6.53	32.85	0.99	.	4	45.582	13 33.62	7.79	10.54	12 58 32.69	36 44 41.9
49	6	. .	. .	. .	. .	6.2	. .	. .	13 0 46.65	32.85	0.46	.	2	14.487	46 8.16	7.90	21.60	13 0 13.34	37 17 27.7
50	3.2	. .	37.2	56.3	. .	. .	. .	. .	4 15.80	32.83	0.73	III.	3	30.840	29 7.05	8.08	15.70	3 42.24	0 20.8
51	9	. .	. .	. .	. .	. .	34.	. .	3 55.39	32.83	0.46	.	2	16.202	44 20.78	8.06	20.97	3 22.10	37 15 39.8
52	7	. .	42.8	2.	. .	40.2	. .	. .	7 21.33	32.82	1.11	III.	5	52.223	6 37.22	8.26	8.25	6 47.40	36 37 43.7
53	9	. .	33.	52.	12.	. .	. .	. .	11 11.66	32.80	0.87	IV.	3	38.275	21 20.96	8.47	13.11	10 37.99	36 52 32.5
54	10	. .	39.2	58.8	. .	. .	. .	. .	14 18.08	32.78	0.66	III.	3	26.929	33 12.41	8.64	17.09	13 44.64	37 4 28.1
55	10	. .	56.	. .	. .	. .	. .	. .	15 34.70	32.78	0.96	.	5	43.878	15 20.25	8.70	11.13	15 0.96	36 46 30.1
56	7.6	. .	. .	. .	. .	42.	. .	. .	16 22.47	32.77	0.48	.	2	16.953	43 33.30	8.75	20.71	15 49.22	37 14 52.8
57	8	. .	. .	. .	. .	31.3	51.	. .	17 12.17	32.77	0.60	V.	3	23.096	37 13.19	8.79	18.50	16 38.80	37 8 30.5
58	9	. .	36.5	56.	. .	. .	. .	. .	21 15.30	32.75	0.77	.	3	32.728	27 8.58	9.00	15.05	20 41.78	36 58 22.6
59	10	. .	. .	. .	. .	. .	12.	. .	21 33.55	32.75	0.95	.	4	43.570	15 39.64	9.02	11.26	20 59.85	46 49.9
60	9	. .	. .	26.	. .	. .	. .	. .	23 45.44	32.74	1.04	.	5	47.889	11 9.07	9.11	9.77	23 11.66	36 42 18.0
61	10	. .	. .	47.	. .	. .	. .	. .	25 6.43	32.73	0.52	.	2	18.625	41 47.62	9.18	20.12	24 33.18	37 13 6.9
62	8	. .	20.	39.8	59.	. .	. .	. .	26 58.93	32.72	0.96	IV.	4	43.362	15 52.69	9.27	11.34	26 25.25	36 47 3.3
63	10	. .	. .	0.	. .	. .	. .	. .	28 19.43	32.71	0.99	.	4	45.235	13 54.51	9.33	10.67	27 45.73	45 4.5
64	9	. .	. .	. .	57.2	. .	. .	. .	28 57.07	32.71	0.99	.	4	46.028	13 5.19	9.36	10.39	28 23.37	44 14.9
65	7	. .	. .	. .	. .	. .	54.8	. .	29 16.35	32.71	0.80	.	3	34.290	25 30.83	9.38	14.49	28 42.84	56 44.7
66	8	. .	. .	. .	. .	. .	40.	. .	30 1.55	32.70	1.00	.	4	47.202	11 52.19	9.41	10.00	29 27.85	36 43 1.6
67	7	. .	. .	. .	35.8	. .	14.3	. .	31 35.74	32.69	0.72	.	3	31.072	28 52.81	9.47	15.62	31 2.33	37 0 7.9
68	8	. .	38.5	. .	. .	. .	. .	. .	34 17.17	32.68	1.12	.	5	52.972	5 49.52	9.59	7.98	33 43.37	36 36 57.1
69	8.9	. .	. .	. .	. .	44.8	. .	. .	34 25.60	32.68	0.97	.	4	44.765	14 24.76	9.60	10.84	33 51.95	36 45 35.2
70	10	. .	. .	23.	. .	. .	. .	. .	38 42.38	32.65	0.63	.	3	25.465	34 44.45	9.76	17.60	38 9.10	37 6 1.8
71	7	. .	54.	. .	. .	. .	. .	. .	42 32.99	32.64	0.35	.	2	8.882	51 57.79	9.92	23.65	42 0.00	23 21.4
72	7	. .	. .	47.	6.	. .	. .	. .	43 6.14	32.63	0.56	IV.	3	21.692	38 41.20	9.94	19.00	42 32.95	37 10 0.1
73	9	. .	. .	. .	3.	22.	. .	. .	45 2.84	32.62	1.01	V.	5	46.593	12 31.23	10.01	10.21	44 29.21	36 43 41.5
74	8.9	. .	. .	. .	30.8	. .	. .	. .	46 30.70	32.61	0.55	.	2	20.608	39 43.80	10.07	19.38	45 57.54	37 11 3.2
75	.	. .	21.	40.	. .	. .	. .	. .	48 59.56	32.60	0.80	III.	3	35.880	23 50.82	10.15	13.94	48 26.16	36 55 4.9
76	7.6	. .	9.5	29.2	. .	. .	. .	. .	50 48.41	32.59	0.96	III.	3	44.070	15 16.92	10.21	11.06	50 14.86	46 28.2
77	9	. .	. .	. .	. .	27.2	. .	. .	51 8.	32.58	. .	.	.	.493	. . .	. .	. .	50 35.	
78	7	. .	. .	. .	. .	20.5	. .	. .	52 1.35	32.58	1.06	. .	4	50.112	8 49.30	10.25	8.95	51 27.71	39 58.5
79	.	. .	. .	. .	. .	5.	. .	. .	52 45.81	32.57	1.00	.	3	46.109	13 4.69	10.29	10.35	52 12.24	36 44 15.3
80	8	. .	. .	0.	19.5	. .	. .	. .	55 19.35	32.56	0.69	.	3	28.465	31 36.49	10.35	16.54	54 46.10	37 2 53.4
81	9	. .	. .	41.	. .	. .	. .	. .	56 0.37	32.56	0.79	.	3	34.508	25 17.09	10.37	14.42	55 27.02	36 56 31.9
82	6.7	. .	. .	. .	32.3	51.3	. .	. .	13 57 32.06	−32.55	−0.72	IV.	3	30.778	−29 11.12	−10.42	−15.73	13 56 58.79	− 37 0 27.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 242. MARCH 30. S. $D_\circ = -36° 30' 50''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
83	10	. .	. .	7.	26.	. .	. .	. .	13 59 26.12	−32.53	−0.85	.	3	38.278	−21 20.77	−10.46	−13.09	13 58 52.74	− 36 52 34.3
84	8	. .	2.	21.3	41.	. .	. .	. .	14 2 40.83	32.52	0.54	IV.	2	20.130	40 13.78	10.56	19.57	14 2 7.77	37 11 33.9
85	10	. .	. .	38.	. .	. .	. .	. .	4 57.34	32.50	0.71	.	3	29.568	30 26.98	10.61	16.15	4 24.13	37 1 43.7
86	10.9	. .	23.2	. .	. .	. .	. .	. .	6 1.92	32.49	0.89	.	4	40.162	19 12.08	10.64	12.41	5 28.54	36 50 25.1
87	8	. .	. .	59.	. .	. .	. .	. .	7 18.38	32.49	0.84	.	3	37.062	22 36.71	10.67	13.52	6 45.05	53 50.9
88	9	. .	56.	. .	. .	. .	. .	. .	8 34.74	32.48	0.79	.	3	34.702	25 4.36	10.70	14.34	8 1.47	36 56 19.4
89	8	. .	. .	. .	44.	3.5	. .	. .	8 43.94	32.48	0.49	IV.	2	16.892	43 36.75	10.71	20.77	8 10.97	37 14 58.2
90	7.8	. .	. .	. .	19.8	39.	. .	. .	10 19.77	32.47	1.09	IV.	5	52.008	6 51.04	10.75	8.20	9 46.21	36 38 0.0
91	3	. .	. .	. .	41.	0.5	. .	. .	11 0.51	32.46	0.54	IV.	2	20.165	40 11.64	10.77	19.55	11 27.51	37 11 32.0
92	8	. .	28.8	48.	. .	. .	. .	. .	15 7.47	32.44	0.98	III.	4	45.613	13 30.72	10.85	10.52	14 34.05	36 44 42.1
93	9	. .	. .	. .	12.	31.	. .	. .	15 11.83	32.44	0.96	IV.	4	43.953	15 15.35	10.85	11.08	14 38.43	46 27.3
94	6	. .	. .	. .	26.5	. .	. .	. .	16 26.37	32.42	0.97	.	4	44.638	14 36.06	10.78	10.84	15 52.98	45 47.7
95	8	. .	. .	. .	. .	. .	31.	. .	16 52.55	32.42	0.83	.	3	36.190	23 31.55	10.79	13.81	16 19.30	54 46.2
96	9	. .	. .	. .	. .	. .	19.6	. .	17 41.15	32.42	0.91	.	4	41.160	18 11.39	10.90	12.05	17 7.82	49 24.3
97	10	. .	. .	. .	. .	52.3	. .	. .	22 33.05	32.39	0.87	.	4	38.635	20 40.59	10.99	12.95	21 59.79	52 3.5
98	11	. .	. .	. .	. .	. .	6.	. .	23 27.55	32.38	0.86	.	4	38.370	21 6.54	11.00	13.06	22 54.31	52 20.6
99	9	. .	13.2	. .	. .	. .	. .	. .	25 51.94	32.36	0.81	.	3	36.072	23 38.57	11.04	13.87	25 18.77	54 53.5
100	10	. .	5.5	. .	. .	. .	. .	. .	27 44.18	32.35	1.11	.	4	51.399	7 26.88	11.06	8.58	27 10.72	38 36.5
101	7.8	. .	. .	8.8	. .	. .	. .	. .	28 28.19	32.34	0.86	.	3	38.388	21 13.63	11.08	13.09	27 54.99	36 52 27.8
102	9	. .	. .	41.	0.	. .	. .	. .	30 0.27	32.34	0.22	.	2	1.405	59 48.47	11.10	26.41	29 27.71	37 31 16.0
103	10	. .	25.5	. .	. .	. .	. .	. .	31 4.20	32.33	0.95	.	4	44.142	15 2.24	11.11	11.05	30 30.92	36 46 14.4
104	2.3	. .	. .	53.	12.3	. .	. .	. .	33 12.29	32.32	0.58	IV.	3	22.872	37 27.12	11.14	18.61	32 39.39	37 8 46.9
105	9	. .	. .	12.	. .	. .	. .	. .	34 31.38	32.31	0.83	.	4	36.945	22 34.58	11.15	13.55	33 58.24	36 53 49.3
106	9	. .	. .	. .	. .	. .	53.	. .	34 14.55	32.31	1.03	.	5	48.272	10 45.91	11.15	9.56	33 41.21	41 56.6
107	9	. .	. .	. .	. .	. .	3.	. .	35 24.55	32.30	1.05	.	5	49.832	9 7.74	11.16	8.92	34 51.20	36 40 17.8
108	7.8	. .	. .	. .	. .	4.	. .	. .	36 44.40	32.29	0.41	.	2	13.083	47 36.16	11.17	22.18	36 11.70	37 18 59.5
109	9	. .	12.0	. .	. .	. .	. .	. .	39 40.10	32.27	0.48	.	2	17.610	42 50.59	11.21	20.52	39 7.35	14 12.3
110	8	. .	. .	. .	5.8	. .	. .	. .	40 5.64	32.27	0.72	.	3	31.042	28 54.62	11.21	15.64	39 32.65	37 0 11.5
111	7	. .	. .	59.5	18.5	. .	. .	. .	41 18.65	32.26	0.96	IV.	4	44.420	14 46.23	11.22	10.91	40 45.43	36 45 58.4
112	9	. .	28.	. .	. .	. .	. .	. .	44 6.69	32.24	1.05	.	5	48.082	10 56.46	11.24	9.59	43 33.40	36 42 7.3
113	4	. .	. .	. .	. .	. .	38.8	. .	44 0.24	32.24	0.54	.	2	20.793	39 32.63	11.24	19.34	43 27.46	37 10 53.2
114	8	. .	54.	13.8	. .	. .	. .	. .	14 46 32.98	−32.22	−1.10	.	5	52.843	− 5 58.11	−11.26	− 8.00	14 45 59.66	− 36 37 7.4

ZONE 243. APRIL 2. S. $D_\circ = -34° 35' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	14.8	. .	. .	. .	. .	. .	9 59 52.64	−34.44	−1.06	.	3	31.210	−28 43.64	− 0.04	− 7.65	9 59 17.1	− 35 4 11.3
2	9	. .	. .	. .	50.5	. .	23.3	. .	9 59 50.54	34.44	1.14	.	2	21.042	39 16.57	0.04	10.65	9 59 15.0	14 47.3
3	5	. .	2.2	21.2	. .	. .	. .	. .	10 3 40.07	34.45	1.07	III.	3	28.169	31 54.76	0.48	8.54	10 3 4.5	35 7 23.8
4	10.9	. .	. .	. .	. .	57.	. .	. .	3 38.21	34.45	1.00	.	4	39.278	20 9.36	0.48	5.30	3 2.8	34 55 35.1
5	10	. .	17.2	36.2	. .	. .	. .	. .	5 55.09	34 45	1.12	III.	3	24.822	35 24.60	0.75	9.52	5 19.5	35 10 54.9
6	8	. .	. .	. .	7.	26.	. .	. .	7 6.92	34.46	1.20	IV.	2	16.263	44 16.46	0.89	12.09	6 31.3	35 19 49.4
7	7.8	. .	55.6	14.	. .	51.8	. .	. .	9 33.14	34.47	0.93	III.	5	50.162	8 46.59	1.19	2.15	9 57.7	34 44 9.9
8	11	. .	. .	. .	. .	11.	. .	. .	10 52.13	34.47	1.10	.	3	29.061	30 58.98	1.34	8.27	10 16.6	35 5 28.6
9	8.7	. .	55.	14.	. .	51.5	. .	. .	12 32.80	34.47	1.05	III.	3	34.608	25 10.76	1.54	6.66	11 57.3	0 39.0
10	9	. .	. .	8.2	. .	. .	. .	. .	14 27.08	34.48	1.11	.	3	28.243	31 50.17	1.77	8.53	13 51.5	7 20.5
11	10	. .	19.5	38.5	. .	. .	35.2	. .	15 57.51	34.48	1.27	III.	2	8.352	52 32.04	1.96	14.48	15 21.8	35 28 8.5
12	9	. .	34.6	43.	. .	. .	. .	. .	10 17 2.16	−34.49	−1.01	III.	4	41.450	−17 52.07	− 2.08	− 4.67	10 16 26.7	− 34 53 18.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 243	April 2,	9 50	93 54 59.3	59.2	60.8	56.3	52.3	50.8	56.45						
		10 0	. .	. .	. .	. .	. .	. .	. .	30.148	53.4	45.8	53.	52.	
		10 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	44.			
		11 10	59.3	59.2	61.2	56.3	52.3	50.8	56.52						
		12 0	. .	. .	. .	. .	. .	. .	. .	30.140	49.5	40.3			
		12 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	39.8			
		12 40	. .	. .	. .	. .	. .	. .	. .	30.148	48.5	39.8			
		13 20	59.3	59.2	61.2	58.2	52.3	50.8	56.83						

REMARKS.

(242) 91. Transits over T.'s III and IV assumed as recorded over T.'s IV and V, and minutes as 12, not 11.

(243) 2. Time of transit over T. VI assumed as 28s.3 instead of 23s.3.

(243) 12. Time of transit over T. II assumed as 24s.6 instead of 34s.6.

ZONE 243. APRIL 2. S. $D_0 = -34° 35' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
13	11.10	..	..	..	33.5	..	..	..	10 18 33.37	−34.49	−1.00	.	4	42.753	−16 30.66	− 2.27	− 4.32	10 17 57.9	− 34 51 57.3
14	8	..	..	49.2	..	..	44.8	..	22 7.64	34.50	1.28	.	2	9.192	51 39.86	2.69	14.22	21 31.9	35 27 16.8
15	9	8.	27.	46.	..	24.	..	..	25 4.97	34.51	1.29	III.	2	9.178	51 40.17	3.05	14.22	24 29.2	27 17.4
16	10	..	10.	29.	..	..	..	..	26 47.86	34.51	1.10	III.	3	32.508	27 22.58	3.26	7.27	26 12.2	1 53.1
17	7	..	..	0.8	18.8	..	..	..	27 19.24	34.51	1.21	IV.	2	18.332	42 6.69	3.32	11.46	26 43.5	17 41.5
18	7	..	31.	..	..	..	..	..	29 8.83	34.52	1.11	.	2	32.330	27 27.29	3.54	7.32	28 33.2	35 2 58.2
19	9	..	..	..	29.8	..	..	..	29 29.67	34.52	0.99	.	5	46.750	12 21.00	3.58	3.14	28 54.2	34 47 47.7
20	6.7	..	51.	..	28.8	..	..	..	31 28.73	34.52	1.06	IV.	4	38.418	21 2.90	3.82	5.56	30 53.2	34 56 32.3
21	8	..	47.2	..	..	..	..	..	34 25.11	34.52	1.19	.	3	22.708	37 36.83	4.17	10.15	33 49.4	35 13 11.2
22	6.7	..	..	..	36.8	..	..	..	34 36.65	34.52	1.07	.	4	37.412	22 6.02	4.19	5.84	34 1.1	34 57 36.1
23	6.7	..	..	..	15.5	33.8	..	..	35 15.18	34.52	1.07	IV.	4	38.070	21 24.60	4.27	5.65	34 39.6	34 56 54.5
24	9	..	..	..	..	24.2	..	..	36 5.06	34.53	1.29	.	2	11.208	49 33.81	4.37	13.63	35 29.2	35 25 11.8
25	8	..	..	..	..	8.5	..	..	36 49.76	34.53	1.02	.	5	44.983	14 12.16	4.46	3.63	36 14.2	34 49 40.2
26	9.8	..	4.	23.2	..	..	..	..	40 42.06	34.54	1.24	.	2	17.580	42 53.23	4.92	11.69	40 6.3	35 18 9.8
27	8.7	..	..	59.	..	..	..	..	41 17.97	34.54	1.26	.	2	15.931	44 36.53	4.99	12.19	40 42.2	20 13.7
28	9	..	..	18.	..	..	..	..	42 36.89	34.54	1.18	.	3	26.760	33 23.01	5.15	8.97	42 1.2	8 57.1
29	9	..	..	..	..	9.	..	..	42 50.09	34.54	1.18	.	3	26.515	33 38.83	5.18	9.03	42 14.4	9 13.0
30	6	..	..	..	..	53.5	..	..	43 34.68	34.54	1.12	.	3	34.612	25 10.76	5.27	6.64	42 59.0	35 0 42.7
31	7	..	..	..	..	51.	..	..	44 32.19	34.54	1.11	.	3	36.153	23 34.06	5.37	6.20	43 56.5	34 59 5.6
32	10	..	..	..	..	..	44.	..	45 6.48	34.55	1.09	.	3	37.868	21 46.14	5.44	5.70	44 30.8	57 17.3
33	6.5	..	..	..	38.8	57.5	..	..	46 38.76	34.55	0.97	IV.	5	52.701	6 7.53	5 63	1.43	46 3.2	41 34.6
34	7.8	..	18.	37.2	..	..	..	..	48 55.98	34.55	0.98	III.	5	52.374	6 27.80	5.89	1.53	48 20.5	34 41 55.2
35	7.8	..	11.2	30.3	..	..	..	..	50 49.26	34.55	1.31	III.	2	11.518	49 13.49	6.12	13.54	50 13.4	35 24 53.2
36	8	..	..	6.8	..	..	..	..	51 25.75	34.55	1.05	.	5	44.352	14 51.31	6.19	3.82	50 50.1	34 50 21.3
37	8	..	..	..	47.	..	..	..	51 46.87	34.55	1.06	.	5	42.730	16 33.30	6.23	4.29	51 11.3	52 3.8
38	9	..	..	..	..	..	18.5	..	51 40.97	34.55	1.01	.	5	48.738	10 16.48	6.22	2.58	51 5.4	45 45.3
39	10	..	46.	5.5	..	..	1.5	..	54 24.07	34.55	1.03	III.	5	49.122	9 51.87	6.53	0.93	53 48.5	34 45 19.3
40	9	..	5.5	24.	..	..	..	..	56 43.11	34.56	1.14	III.	3	34.456	25 20.42	6.80	6.69	56 7.4	35 0 53.9
41	10	..	36.	..	..	..	..	..	58 13.82	34.56	1.15	.	3	35.280	24 18.27	6.97	6.45	57 38.1	34 59 51.7
42	5	..	..	..	25.3	..	..	..	58 25.15	34.56	1.15	.	3	35.490	24 15.66	7.00	6.40	57 49.4	34 59 49.1
43	10	..	..	..	..	..	10.	..	58 32.48	34.56	1.18	.	3	31.218	28 43.58	7.01	7.65	57 56.7	35 4 18.2
44	10	..	..	..	..	..	4.	..	10 59 26.47	34.56	1.03	.	5	49.913	9 2.72	7.11	2.20	58 50.9	34 44 32.0
45	10	..	..	..	..	..	6.	..	11 0 28.48	34.56	1.18	.	3	31.392	28 32.73	7.23	7.60	10 59 52.7	35 4 7.6
46	8	..	..	..	40.	..	..	..	3 39.87	34.56	1.24	.	3	24.712	35 31.75	7.59	9.57	11 3 4.1	11 8.9
47	6.7	..	..	..	..	..	27.2	..	3 49.57	34.56	1.27	.	3	19.200	41 17.51	7.61	11.19	3 13.7	16 56.3
48	6.7	..	..	..	..	..	7.	..	4 29.28	34.56	1.34	.	2	11.761	48 59.19	7.68	13.46	3 53.4	24 40.3
49	11	..	..	25.5	..	..	..	..	7 44.52	34.57	1.36	.	2	10.193	50 36.52	8.05	13.94	7 8.6	26 18.5
50	8	..	..	..	7.	..	..	..	8 6.91	34.57	1.30	.	3	18.300	42 14.14	8.09	11.48	7 31.0	35 17 53.7
51	8	..	..	..	..	20.	..	..	9 1.33	34.57	1.03	.	5	52.662	6 10.22	8.20	1.44	8 25.7	34 41 39.9
52	10	..	..	..	..	..	30.5	..	9 52.98	34.57	1.18	.	3	32.927	26 56.16	8.29	7.15	9 17.2	35 2 31.6
53	7	..	25.5	..	..	..	..	..	14 3.28	34.57	1.09	.	3	46.263	12 59.03	8.75	3.27	13 27.6	34 48 31.0
54	6.7	..	..	..	30.8	..	..	..	14 30.68	34.57	1.04	.	4	52.112	6 43.37	8.80	1.58	13 55.1	34 42 13.8
55	10	..	..	..	..	43.	..	..	15 23.86	34.57	1.37	.	2	11.120	49 39.26	8.89	13.67	14 47.9	35 25 21.8
56	8	..	..	..	..	27.8	..	..	16 8.66	34.57	1.37	.	2	11.240	49 31.81	8.97	13.62	15 32.7	25 14.4
57	5	..	..	..	..	..	11.	..	16 33.32	34.57	1.33	.	2	15.712	44 51.39	9.02	12.27	15 57.4	20 32.7
58	7	..	..	..	..	..	45.	..	17 7.38	34.57	1.30	.	2	20.032	40 20.50	9.08	10.97	16 31.5	16 0.6
59	8	..	..	..	..	35.	..	..	18 16.14	34.57	1.23	.	2	29.850	30 4.26	9.21	8.05	17 40.3	5 41.5
60	5	..	..	..	..	8.	27.	..	18 49.20	34.57	1.30	.	3	21.	39	9.	11.	18 13.3	15
61	8	..	27.3	..	..	..	..	..	11 21 5.23	−34.57	−1.30	.	3	21.222	−39 10.23	− 9.52	−10.61	11 20 29.4	− 35 14 50.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(243) 41. Right ascension discordant 12s by B. A. C. 3792, and Mural Z., April 18, 1846.

Zone 243. April 2. S. $D_0 = -34°\ 35'\ 20''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
62	8.9	. .	. .	. .	. .	. .	50.	. .	11 21 12.47	−34.57	−1.07	.	5	50.938	− 8 1.77	− 9.53	− 1.91	11 20 36.8	− 34 43 33.2
63	8	. .	. .	9.8	. .	. .	. .	. .	24 28.75	34.57	1.12	.	4	45.453	13 40.84	9.88	3.49	23 53.1	34 49 14.2
64	5.6	. .	29.8	49.	. .	27.2	. .	. .	26 7.96	34.57	1.37	III.	2	13.566	47 4.99	10.05	12.94	25 32.0	35 22 48.0
65	6.7	. .	57.	16.	34.8	. .	. .	. .	27 34.91	34.57	1.38	IV.	2	13.841	46 48.11	10.21	12.86	26 59.0	35 22 31.2
66	6	. .	. .	. .	27.	. .	. .	. .	28 26.88	34.57	1.11	.	5	47.626	11 19.86	10.30	2.87	27 51.2	34 46 53.0
67	6.7	. .	. .	28.5	. .	. .	. .	. .	29 47.45	34.57	1.33	.	2	18.625	41 47.68	10.45	12.40	29 11.5	35 17 30.5
68	8.9	. .	. .	. .	16.8	. .	. .	. .	30 16.68	34.57	1.09	.	5	49.185	9 48.30	10.50	2.42	29 41.0	34 45 21.2
69	9	. .	53.8	13.	. .	. .	. .	. .	33 31.76	34.57	1.22	III.	3	34.492	25 18.10	10.84	6.68	32 56.0	35 0 55.6
70	7.6	. .	53.8	13.2	. .	. .	. .	. .	34 31.87	34.57	1.11	III.	5	48.251	10 46.60	10.94	2.70	33 56.2	34 46 20.2
71	8	. .	4.5	. .	. .	. .	. .	. .	35 42.38	34.57	1.29	.	3	26.162	34 0.29	11.06	9.14	35 6.5	35 9 40.5
72	9	. .	. .	6.	. .	. .	. .	. .	36 24.92	34.57	1.18	.	4	40.583	18 46.40	11.14	4.91	35 49.2	34 54 22.5
73	9	. .	. .	. .	8.8	27.8	. .	. .	37 8.69	34.57	1.43	IV.	2	8.608	52 16.42	11.22	14.48	36 32.7	35 28 2.1
74	7.8	. .	. .	24.5	43.	. .	. .	. .	38 43.17	34.57	1.11	IV.	5	48.265	10 46.10	11.38	2.66	38 7.5	34 46 20.1
75	5.6	. .	. .	53.	. .	. .	49.2	. .	40 11.77	34.57	1.26	.	3	31.192	28 45.34	11.54	7.65	39 35.9	35 4 24.5
76	7.8	. .	. .	24.8	43.5	. .	. .	. .	41 43.52	34.57	1.30	IV.	3	26.650	33 30.24	11.69	9.01	41 7.7	9 10.9
77	11	. .	2.8	. .	. .	. .	. .	. .	44 40.62	34.57	1.23	.	4	34.780	24 49.66	11.99	6.60	44 4.8	35 0 28.3
78	11	. .	9.5	. .	. .	. .	. .	. .	45 47.31	34.57	1.22	.	4	36.688	22 50.01	12.10	6.06	45 11.5	34 58 28.2
79	10	. .	. .	. .	22.5	. .	. .	. .	46 22.38	34.56	1.33	.	3	23.268	37 2.52	12.17	9.99	45 46.5	35 12 44.7
80	6.7	. .	. .	. .	. .	30.	48.5	. .	47 11.01	34.56	1.31	V.	2	26.432	33 38,95	12.25	9.07	46 35.1	35 9 20.3
81	9	. .	. .	. .	. .	. .	5.5	. .	48 27.97	34.56	1.17	.	5	44.693	14 30.41	12.38	3.70	47 52.2	34 50 6.5
82	11	. .	. .	. .	. .	30.	. .	. .	50 11.01	34.56	1.36	.	3	21.300	39 5.97	12.55	10.59	49 35.1	35 14 49.1
83	11	. .	10.8	. .	48.5	. .	. .	. .	52 48.59	34.56	1.39	IV.	2	17.380	43 6.39	12.80	11.79	52 12.6	35 18 51.0
84	10	. .	59.	. .	. .	55.2	. .	. .	54 36.63	34.56	1.14	.	5	49.683	9 16.97	12.97	2.25	54 0.9	34 44 52.2
85	8	. .	. .	. .	. .	2.	21.	. .	55 43.31	34.56	1.29	.	3	31.125	28 49.55	13.08	7.67	55 7.5	35 4 30.3
86	9	. .	16.8	. .	. .	. .	. .	. .	57 54.58	34.55	1.18	.	5	46.018	13 6.01	13.29	3.32	57 18.8	34 48 42.6
87	4	. .	12.8	31.5	50.8	. .	. .	. .	11 58 50.56	34.55	1.20	IV.	4	43.369	15 52.25	13.38	4.10	11 58 14.8	34 51 29.7
88	10	. .	. .	. .	19.	. .	. .	. .	12 2 18.84	34.55	1.30	.	3	31.318	28 37.50	13.70	7.62	12 1 43.0	35 4 18.8
89	10	. .	. .	18.8	. .	. .	. .	. .	4 37.75	34.55	1.19	.	4	45.513	13 43.34	13.92	3.46	4 2.0	34 49 20.7
90	10	. .	. .	. .	57.8	. .	. .	. .	5 57.65	34.54	1.33	.	3	28.629	31 26.08	14.04	8.44	5 21.8	35 7 8.6
91	8	. .	10.2	29.2	48.	. .	. .	. .	7 48.11	34.54	1.46	IV.	2	13.302	47 22.17	14.20	13.04	7 12.1	23 9.4
92	6.7	. .	56.2	. .	. .	. .	. .	. .	10 34.14	34.53	1.40	.	3	20.602	39 49.07	14.46	10.81	9 58.2	15 34.3
93	10	. .	. .	. .	39.5	. .	. .	. .	10 39.37	34.53	1.37	.	3	24.740	35 29.99	14.47	9.56	10 3.5	35 11 14.0
94	8	. .	38.6	47.6	. .	. .	. .	. .	12 16.46	34.53	1.23	III.	4	42.358	17 4.55	14.61	4.38	11 40.7	34 52 43.5
95	7.8	. .	. .	9.8	. .	. .	. .	. .	13 28.79	34.53	1.47	.	2	14.198	46 25.34	14.71	12.76	12 52.8	35 22 12.8
96	9	. .	. .	. .	. .	. .	56.	. .	13 18.42	34.53	1.39	.	3	24.188	36 4.63	14.70	9.74	12 42.5	11 49.1
97	10	. .	. .	35.	54.3	. .	. .	. .	15 54.02	34.53	1.30	IV.	3	35.435	24 19.17	14.93	6.39	15 18.2	35 0 0.5
98	9	. .	. .	. .	54.5	. .	. .	. .	16 54.37	34.52	1.20	.	4	46.668	12 25.02	15.02	3.11	16 18.6	34 48 3.2
99	10	. .	58.	17.	. .	. .	. .	. .	18 35.97	34.52	1.45	III.	2	16.930	43 33.87	15.16	11.92	18 0.0	35 19 21.0
100	8	. .	40.2	59.	. .	. .	. .	. .	21 17.95	34.52	1.35	.	3	29.730	30 16.75	15.39	8.08	20 42.1	6 0.2
101	9	. .	. .	35.	. .	. .	. .	. .	21 53.89	34.52	1.38	.	3	26.003	34 10.58	15.43	9.20	21 18.0	35 9 55.2
102	10	. .	. .	. .	31.6	50.8	. .	. .	22 31.72	34.52	1.32	IV.	3	35.453	24 18.04	15.49	6.39	21 55.9	34 59 59.9
103	11	. .	. .	16.	. .	. .	. .	. .	24 34.95	34.51	1.23	.	4	45.558	13 34.18	15.67	3.44	24 59.2	49 13.3
104	10	. .	35.	54.	. .	. .	. .	. .	28 12.86	34.50	1.31	III.	3	35.622	24 7.13	15.96	6.34	27 37.0	59 49.4
105	10	. .	. .	23.	41.5	0.5	. .	. .	28 41.64	34.50	1.31	IV.	3	35.622	24 7.32	16.01	6.34	28 5.8	59 49.7
106	11	. .	. .	35.	. .	. .	. .	. .	30 53.91	34.50	1.29	.	3	38.363	21 15.26	16.18	6.55	30 18.1	34 56 58.0
107	8	. .	5.8	25.	44.	. .	. .	. .	35 43.82	34.49	1.42	IV.	3	24.746	35 29.61	16.54	9.57	35 7.9	35 11 15.7
108	8	. .	. .	. .	59.8	. .	37.3	. .	36 59.66	34.49	1.51	.	2	12.649	48 2.99	16.64	13.25	36 23.7	35 23 52.9
109	7.8	. .	. .	15.7	34.	. .	. .	. .	39 34.24	34.48	−1.29	IV.	4	41.762	−17 32.85	−16.84	− 4.57	39 58.5	− 34 53 14.3
110	10	. .	. .	39.	. .	. .	. .	. .	12 42 58.	−34.47	. .	.	.	.482	. . .	. .	. .	12 42 24.	

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(243) 95. Right ascension differs 4s.4 from Mural Z. March 16, 1849.

(243) 109. Minutes assumed as 40, not 39.

ZONE 243. APRIL 2. S. $D_\circ = -34° 35' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s	° ′ ″
111	9	. .	. .	. .	. .	32.	. .	. .	12 43 12.98	−34.47	−1.48	.	2	18.753	−41 40.47	−17.10	−11.39	12 42 37.0	− 35 17 28.9
112	9	. .	. .	. .	. .	. .	15.8	. .	43 38.28	34.46	1.39	.	3	30.732	29 13.95	17.13	7.79	43 2.4	4 58.9
113	9	. .	. .	. .	. .	. .	. .	18.5	44 21.88	34.46	1.40	.	3	28.680	31 22.38	17.17	8.42	43 46.0	7 8.0
114	3	. .	32.	51.	10.	28.8	. .	. .	12 59 9.88	34.41	1.41	IV.	3	32.376	27 31.12	18.17	7.31	12 58 34.1	3 16.6
115	6.7	. .	. .	19.	37.8	. .	. .	. .	13 0 37.89	34.41	1.58	IV.	2	11.302	49 27.60	18.27	13.66	13 0 1.9	25 19.5
116	6.7	. .	20.	39.	58.	. .	. .	. .	1 59.96	34.41	1.55	IV.	2	14.893	45 42.13	18.35	12.55	1 24.0	35 21 33.0
117	7	. .	. .	. .	57.	. .	. .	. .	2 56.87	34.40	1.32	.	4	44.560	14 37.45	18.41	3.71	2 21.1	34 50 19.6
118	9	. .	. .	41.	. .	. .	. .	. .	3 59.95	34.40	1.31	.	4	45.770	13 20.74	18.47	3.37	3 24.2	34 48 42.6
119	8.7	. .	17.5	36.8	. .	. .	. .	. .	5 55.53	34.39	1.46	III.	3	27.026	33 6.39	18.59	8.92	5 19.7	35 8 53.9
120	10	. .	12.3	31.2	. .	. .	. .	. .	12 50.10	34.37	1.44	III.	3	31.878	28 1.93	18.99	7.38	12 14.3	3 48.3
121	8	. .	19.5	. .	. .	. .	. .	. .	13 57.47	34.36	1.56	.	2	16.928	43 33.24	19.06	11.94	13 21.5	35 19 24.2
122	9	. .	. .	. .	21.5	. .	. .	. .	14 21.36	34.36	1.38	.	4	40.505	18 51.93	19.08	4.92	13 45.6	34 54 35.9
123	10	. .	. .	. .	51.	. .	. .	. .	15 50.88	34.35	1.31	.	5	48.508	10 30.86	19.17	2.57	15 15.2	34 46 12.6
124	10	. .	. .	. .	. .	. .	56.	. .	16 18.26	34.35	1.63	.	2	9.228	51 35.91	19.19	14.29	15 42.3	35 27 29.4
125	9	. .	29.	47.7	6.2	. .	. .	. .	13 19 6.50	−34.34	−1.35	IV.	4	44.673	−14 30.16	−19.35	− 3.47	13 18 30.8	− 34 50 13.0

ZONE 244. APRIL 5. C. $D_\circ = -25° 49' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	37.2	48.	12.	29.5	46.4	. .	9 12 11.97	−35.64	−0.86	IV.	2	10.829	−49 57.01	− 1.98	−13.24	9 11 35.5	− 26 39 12.2
2	9	. .	. .	49.2	5.9	. .	. .	. .	14 6.14	35.65	0.90	IV.	5	43.083	16 11.21	2.21	7.81	13 29.6	5 21.9
3	8.9	. .	. .	. .	. .	26.2	43.2	. .	14 8.98	35.65	0.91	V.	3	35.712	24 1.67	2.21	9.04	13 32.4	13 12.3
4	8.9	. .	27.2	44.8	2.8	19.4	36.6	. .	17 2.19	35.66	0.92	IV.	2	17.519	42 57.62	2.57	12.10	16 25.6	26 32 12.6
5	9.10	. .	. .	31.3	47.8	5.5	. .	. .	20 38.26	35.68	0.97	IV.	5	52.262	6 35.22	3.04	6.29	20 1.6	25 55 44.0
6	8.9	. .	. .	. .	43.2	0.5	17.3	. .	21 43.10	35.68	0.97	IV.	2	22.219	38 0.55	3.15	11.30	21 6.5	26 27 15.6
7	8	. .	5.	22.2	39.5	56.5	13.5	. .	23 39.42	35.69	1.01	IV.	5	51.740	7 7.80	3.39	6.38	23 2.7	25 56 17.3
8	7	. .	. .	35.5	52.3	. .	27.3	. .	23 52.68	35.69	1.01	III.	5	51.978	6 52.55	3.41	6.34	23 16.0	25 56 2.5
9	9	. .	. .	. .	. .	. .	14.4	. .	24 40.12	35.70	1.01	VI.	3	39.475	20 5.60	3.51	8.42	24 3.4	26 9 17.3
10	9	. .	. .	. .	55.3	13.5	. .	. .	25 55.68	35.70	1.01	IV.	2	20.573	39 46.06	3.66	11.58	25 19.0	29 1.1
11	10	. .	. .	. .	. .	. .	54.?	. .	26 19.74	35.71	1.00	VI.	3	33.713	26 7.03	3.71	9.37	25 43.0	15 20.7
12	9	. .	53.2	10.3	27.2	45.2	. .	. .	30 27.61	35.72	1.01	IV.	2	11.002	49 46.23	4.22	13.21	29 50.9	39 3.5
13	8.9	. .	. .	. .	. .	. .	23.2	. .	30 48.93	35.72	1.04	V.	4	37.538	21 58.50	4.26	8.73	30 12.1	11 11.5
14	9	. .	49.3	6.2	23.2	41.	. .	. .	34 23.56	35.74	1.06	IV.	4	40.652	18 42.58	4.69	8.22	33 46.8	7 55.9
15	10	. .	. .	. .	36.3	. .	. .	. .	37 36.20	35.75	1.06	IV.	3	21.198	39 12.31	5.08	11.48	37 59.4	28 28.3
16	8.9	. .	. .	15.	32.2	49.5	6.2	. .	38 32.14	35.76	1.09	IV.	3	36.801	22 53.22	5.19	8.85	37 55.3	12 7.8
17	9	. .	. .	. .	46.6	3.3	20.3	. .	39 46.22	35.76	1.09	V.	4	42.367	16 55.52	5.34	7.93	39 9.4	6 8.6
18	8	. .	. .	. .	. .	. .	. .	. .	40	35.76	1.06	VII.	3	14.921	45 45.64	5.5	12.54	40	35 3.5
19	9.10	. .	. .	. .	10.5	. .	45.5	. .	44 10.79	35.78	1.09	IV.	2	18.316	42 7.69	5.87	11.97	43 33.9	31 25.8
20	10	. .	30.	47.5	. .	11.8	. .	. .	46 4.68	35.79	1.13	III.	4	46.048	13 3.43	6.09	7.32	45 27.8	2 16.5
21	10	. .	31.5	49.2	. .	23.8	. .	. .	46 6.41	35.79	1.13	IV.	4	46.461	12 38.14	6.09	7.25	45 29.4	1 51.
22	8.9	. .	. .	. .	. .	3.2	20.3	. .	46 46.04	35.79	1.14	V.	4	45.238	13 55.33	6.17	7.46	46 9.1	3 9.0
23	9	. .	22.5	40.2	57.2	. .	31.5	. .	49 57.20	35.80	1.14	IV.	3	36.592	23 6.45	6.55	8.89	49 20.3	12 21.9
24	9	. .	. .	42.	58.8	16.2	33.5	. .	49 59.03	35.80	1.15	IV	3	29.175	30 51.89	6.56	10.15	49 22.1	26 20 8.6
25	10	. .	. .	. .	. .	. .	49.2	. .	51 14.87	35.81	1.28	VI.	5	54.080	4 41.35	6.70	5.98	50 37.8	25 53 54.0
26	8.9	. .	. .	7.4	24.3	41.4	58.7	. .	54 24.33	35.82	1.29	IV.	3	23.386	36 55.12	7.12	11.11	53 47.2	26 26 13.3
27	10	. .	. .	20.9	38.	. .	. .	. .	56 37.99	35.83	1.33	IV.	3	31.472	28 27.77	7.33	9.75	56 0.8	17 44.8
28	10	. .	. .	. .	46.3	3.5	. .	. .	56 46.22	35.83	1.33	IV.	3	28.666	31 23.76	7.35	10.23	56 9.1	20 41.3
29	8	. .	. .	. .	26.8	43.5	1.4	. .	57 26.71	35.83	1.33	IV.	3	37.788	21 51.28	7.43	8.69	56 49.5	11 7.4
30	8	. .	4.3	. .	39.3	56.6	13.5	. .	9 59 39.13	−35.84	−1.36	IV.	2	16.946	−43 33.43	− 7.69	−12.21	9 59 1.9	− 26 32 53.3

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(244) 1. Transit over T. III discordant and rejected.

(244) 5. Transits over T.'s III, IV, and V assumed as 21ˢ.3, 37ˢ.8, and 55ˢ.5 instead of 31ˢ.3, 47ˢ.8, and 5ˢ.5.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 244	April 5, 9 0	. .	. .	. .	. .	. .	. .	. .	30.110	61.	52.	59.	56.8	
	9 10	85 9 63.4	61.7	66.0	62.5	55.	58.9	61.25						
	9 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	50.6			
	9 40	. .	. .	. .	. .	. .	. .	. .	30.132	59.	49.8			
	10 0	. .	. .	. .	. .	. .	. .	. .	30.140	58.2	48.6			
	10 20	. .	. .	. .	. .	. .	. .	. .	30.146	57.2	47.9			
	10 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.9			
	11 0	. .	. .	. .	. .	. .	. .	. .	30.148	55.8	47.6			
	11 20	. .	. .	. .	. .	. .	. .	. .	30.160	55.4	46.8	54.5	53.2	

ZONE 244. APRIL 5. C. $D_0 = -25° 49' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
31	9	. .	. .	. .	. .	27.3	44.	. .	10 0 9.95	−35.84	−1.37	VI.	5	55.802	− 2 53.12	− 7.75	− 5.69	9 59 32.7	− 25 52 6.6
32	9	. .	. .	. .	. .	. .	50.4	. .	1 16.12	35.85	1.36	VI.	3	25.266	34 57.11	7.87	10.80	10 0 38.9	26 24 15.8
33	9	. .	. .	6.3	23.8	40.4	. .	. .	5 23.55	35.86	1.39	IV.	5	49.845	9 6.74	8.34	6.68	4 46.3	25 58 21.8
34	9	. .	. .	. .	55.3	12.5	30.3	. .	5 55.44	35.86	1.39	IV.	2	18.452	41 59.16	8.40	12.95	5 18.2	26 31 20.5
35	6	. .	. .	45.2	3.4	20.6	37.7	. .	7 3.13	35.87	1.39	IV.	3	31.853	28 3.68	8.53	9.69	6 25.9	17 21.9
36	9	. .	. .	19.2	36.2	. .	11.5	. .	8 36.59	35.87	1.40	IV.	2	16.015	44 31.20	8.70	12.36	7 59.3	33 52.3
37	9.10	. .	22.8	40.5	57.3	. .	. .	. .	10 57.43	35.88	1.42	IV.	4	41.652	17 39.83	8.96	8.03	10 20.1	6 56.8
38	9	. .	. .	36.2	53.3	10.5	. .	. .	11 53.28	35.88	1.41	IV.	3	22.972	37 20.90	9.06	11.19	11 16.0	26 41.2
39	9.10	. .	. .	4.8	22.1	39.5	56.5	. .	13 22.11	35.89	1.42	IV.	3	23.613	36 40.76	9.22	11.08	12 44.8	26 1.1
40	10	. .	35.3	53.2	. .	. .	. .	. .	16 10.17	35.90	1.44	III.	4	43.078	16 9.83	9.53	7.81	15 32.8	26 5 27.2
41	9	. .	. .	. .	29.	46.2	3.2	. .	16 28.94	35.90	1.44	IV.	5	53.021	5 47.45	9.57	6.14	15 51.6	25 55 3.2
42	9	. .	. .	. .	53.4	. .	. .	. .	17 53.36	35.90	1.43	IV.	2	10.088	50 43.61	9.71	13.39	17 16.0	26 40 6.7
43	9	. .	. .	. .	. .	41.2	58.2	. .	18 23.86	35.90	1.44	V.	3	18.805	41 42.29	9.76	12.89	17 46.5	31 4.9
44	9	. .	. .	. .	42.2	. .	16.3	. .	19 42.05	35.91	1.46	IV.	4	35.351	24 15.41	9.91	9.10	19 4.7	13 34.4
45	9	. .	. .	59.2	16.8	. .	. .	. .	22 16.63	35.92	1.45	IV.	2	14.575	46 2.27	10.17	12.61	21 39.3	35 25.0
46	9	. .	. .	. .	. .	. .	23.8	. .	22 49.51	35.92	1.47	VI.	4	42.480	16 48.74	10.22	7.90	22 12.1	6 6.9
47	9.10	. .	. .	. .	. .	. .	10.5	. .	24 36.21	35.92	1.48	VI.	4	42.702	16 34.61	10.41	7.86	23 58.8	5 52.9
48	9.10	. .	. .	. .	49.1	. .	23.3	. .	26 48.19	35.93	1.49	IV.	4	45.898	13 13.28	10.63	7.34	26 11.6	2 31.3
49	9	. .	. .	. .	58.2	. .	32.3	. .	26 58.04	35.93	1.49	V.	4	46.151	12 57.97	10.65	7.29	26 20.6	26 2 15.9
50	7	. .	3.2	21.2	38.1	55.	. .	. .	29 38.08	35.94	1.50	IV.	5	54.255	4 30.12	10.92	5.94	29 0.6	25 53 47.0
51	8	. .	. .	. .	. .	16.2	33.5	. .	29 59.15	35.94	1.50	V.	5	50.749	8 10.26	10.96	6.53	29 21.7	25 57 27.8
52	6	. .	. .	. .	. .	. .	23.2?	. .	30 48.80	35.94	1.48	VI.	2	10.945	48 47.68	11.04	13.24	30 11.4	26 38 12.0
53	10	. .	. .	. .	43.1	0.3	. .	. .	32 43.12	35.94	1.51	IV.	5	54.495	4 15.05	11.22	5.90	31 5.7	25 53 32.2
54	8.9	. .	44.2	2.	18.9	35.8	. .	. .	34 18.89	35.95	1.52	IV.	4	48.097	10 55.39	11.37	7.01	33 41.4	26 0 13.8
55	9	. .	17.5	34.8	52.3	9.5	. .	. .	35 52.15	35.95	1.51	IV.	2	9.471	51 22.43	11.52	13.50	35 14.7	40 47.4
56	8.9	. .	18.	35.2	52.3	9.8	26.8	. .	36 52.45	35.96	1.52	IV.	2	18.984	41 25.61	11.63	11.86	36 15.0	30 49.1
57	9	. .	41.8	58.2	16.2	. .	. .	. .	39 16.08	35.96	1.52	IV.	2	6.785	54 10.62	11.87	13.97	38 38.6	26 43 36.5
58	8	. .	. .	. .	47.3	4.2	21.1	. .	39 47.03	35.96	1.54	IV.	5	51.894	6 58.13	11.92	6.32	39 9.5	25 56 16.4
59	8	. .	9.3	26.5	43.5	0.9	18.	. .	42 43.70	35.97	1.55	IV.	4	46.946	12 7.51	12.20	7.14	42 6.2	26 1 26.9
60	9	. .	26.2	43.2	0.2	. .	34.5	. .	45 0.38	35.97	1.57	IV.	4	42.429	16 51.19	12.42	7.90	44 22.9	6 11.5
61	9.10	. .	. .	. .	21.8	. .	56.	. .	46 21.69	35.98	1.55	IV.	2	14.520	46 5.72	12.55	12.61	45 44.2	26 35 30.9
62	8	. .	. .	. .	25.2	42.3	59.4	. .	47 25.13	35.98	1.57	IV.	5	51.246	7 38.99	12.65	6.44	46 47.6	25 56 58.1
63	9	. .	. .	. .	. .	22.4	39.3	. .	48 5 14	35.98	1.58	V.	5	47.748	11 18.61	12.71	7.02	47 27.6	26 0 38.3
64	7.8	. .	. .	. .	54.3	11.5	28.4	. .	48 54.22	35.98	1.58	IV.	3	38.191	21 26.18	12.79	8.61	48 16.7	10 47.6
65	9.10	. .	. .	22.3	. .	56.2	. .	. .	51 39.30	35.99	1.60	IV.	3	38.107	21 31.38	13.06	8.63	51 1.7	26 10 53.1
66	8	. .	. .	31.4	48.2	5.4	. .	. .	52 48.38	35.99	1.60	IV.	5	50.302	8 38.24	13.17	6.60	52 10.8	25 57 58.0
67	9.10	. .	. .	. .	. .	. .	30.5	. .	52 56.10	35.99	1.58	VI.	2	9.468	51 23.24	13.18	13.50	52 18.5	26 40 49.9
68	9	. .	. .	. .	. .	. .	2.2	. .	53 27.88	35.99	1.59	VI.	3	21.111	39 17.70	13.24	11.51	52 50.3	28 42.5
69	7	. .	12.2	29.3	46.7	4.1	21.	. .	55 46.72	36.00	1.62	IV.	4	47.175	11 53.32	13.47	7.11	55 9.1	1 13.9
70	9	. .	. .	. .	. .	57.5	. .	. .	56 40.01	36.00	1.60	V.	2	7.672	53 15.49	13.55	13.78	56 2.4	42 42.8
71	9.10	. .	. .	. .	. .	6.5	. .	. .	57 49.17	36.00	1.60	V.	3	21.099	39 18.51	13.66	11.52	57 11.6	28 43.7
72	6	. .	. .	27.1	44.5	1.5	. .	. .	58 44.32	36.00	1.61	IV.	3	20.761	39 39.53	13.75	11.58	58 6.7	29 4.9
73	6	. .	45.	2.	19.2	36.	53.6	. .	10 59 19.19	36.00	1.62	IV.	3	21.153	39 15.14	13.81	11.49	10 58 41.6	28 40.4
74	10	. .	. .	. .	. .	52.8	9.5	. .	11 1 35.41	36.01	1.63	V.	3	30.699	29 16.21	14.04	9.88	11 0 57.8	26 18 40.1
75	8	. .	. .	0.2	16.9	34.4	. .	. .	5 17.21	36.01	1.64	IV.	5	48.808	10 11.83	14.41	6.85	4 39.6	25 59 33.1
76	9.10	. .	. .	45.	2.2	. .	36.2	. .	7 2.10	36.02	1.64	III.	4	46.091	13 0.73	14.58	7.30	6 24.4	26 2 22.6
77	9	. .	. .	. .	12.2	. .	46.4	. .	7 12.09	36.02	1.64	IV.	5	53.268	5 32.07	14.61	6.08	6 34.4	25 54 52.8
78	8.9	. .	. .	. .	. .	. .	11.?	. .	7 36.74	36.02	1.63	VI.	3	34.480	25 19.04	14.65	9.23	6 59.1	26 14 42.9
79	9	. .	. .	. .	. .	. .	. .	. .	11 8	−36.02	−1.63	VII.	2	20.242	−40 12.08	−14.7	−11.66	11 7	− 26 29 38.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ' ''	r.

REMARKS.

(244) 52. Micrometer reading assumed as $11^r.945$ instead of $10^r.945$.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ' ''						''	in.	°	°	°	°	°
Zone 244	April 5,	11 40	85 9 63.9	63.8	67.1	64.9	56.2	58.9	62.47	30.170	55.	46.0			

ZONE 244. APRIL 5. C. $D_\circ = -25° 49' 0''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
80	9.10	. .	. .	. .	. .	. .	42.8	. .	11 9 8.51	−36.02	−1.64	VI.	4	42.980	−16 17.17	−14.80	− 7.80	11 8 30.9	− 26 5 39.8
81	8.9	. .	. .	. .	. .	26.5	43.3	. .	10 9.12	36.02	1.63	V.	3	24.452	35 48.31	14.91	10.95	9 31.5	25 14.2
82	9.10	. .	. .	5.2	. .	39.5	. .	. .	12 22.44	36.02	1.64	IV.	4	43.895	15 18.99	15.14	7.65	11 44.8	4 41.8
83	10	. .	. .	21.2	37.5	. .	13.2	. .	15 38.25	36.03	1.63	IV.	3	24.491	35 45.74	15.47	10.94	15 0.6	25 12.1
84	8	. .	. .	50.4	7.7	25.2	. .	. .	18 7.76	36.03	1.64	IV.	4	40.575	18 47.47	15.60	8.21	16 30.1	8 11.3
85	9	. .	. .	. .	37.2	. .	. .	. .	18 37.06	36.03	1.64	IV.	4	37.126	22 23.91	15.77	8.79	17 59.4	11 48.5
86	8.9	. .	. .	. .	. .	. .	. .	. .	19	36.03	1.64	VI.	4	45.699	13 26.52	16.97	7.37	18	26 2 50.7
87	8	. .	0.3	17.5	34.4	51.5	8.9	. .	25 34.60	36.04	1.66	IV.	4	53.017	5 46.51	16.49	6.12	24 56.9	25 55 9.1
88	9.10	. .	. .	. .	. .	17.8	34.5	. .	26 0.45	36.04	1.66	V.	4	49.137	9 50.55	16.64	6.84	25 22.7	25 59 14.0
89	10	. .	23.5	. .	. .	. .	. .	. .	28 58.04	36.04	1.65	IV.	3	30.441	29 32.52	16.85	9.93	28 20.4	26 18 59.3
90	9	. .	. .	. .	31.7	48.5	5.3	. .	29 31.33	36.04	1.66	IV.	5	52.521	6 18.96	16.90	6.19	28 53.6	25 55 42.1
91	9.10	. .	. .	55.3	. .	30.3	. .	. .	31 12.78	36.05	1.64	IV.	2	19.691	40 41.26	17.07	11.75	30 35.1	26 30 10.1
92	8.9	. .	. .	8.8	26.2	. .	0.4	. .	32 26.11	36.05	1.66	IV.	4	47.594	11 26.96	17.20	7.04	31 48.4	26 0 51.2
93	9.10	. .	. .	46.3	3.2	. .	. .	. .	34 3.37	36.05	1.66	IV.	4	49.685	9 19.23	17.38	6.68	33 25.7	25 58 43.3
94	9	. .	. .	. .	40.8	. .	15.4	. .	35 40.88	36.05	1.64	IV.	2	9.579	51 15.59	17.54	13.50	35 3.2	26 40 46.6
95	9	. .	. .	. .	9.2	26.2	43.5	. .	37 9.12	36.05	1.66	IV.	4	45.495	13 38.77	17.70	7.40	36 31.4	3 3.9
96	9.10	. .	50.5	7.5	24.8	42.2	. .	. .	39 24.87	36.05	1.66	IV.	3	35.321	24 26.33	17.93	9.11	38 47.2	26 13 53.4
97	4	. .	14.5	31.5	49.	6.1	23.1	. .	41 48.92	36.06	1.67	IV.	5	53.255	5 32.89	18.17	6.07	41 11.2	25 54 57.1
98	8	. .	6.2	23.5	40.5	57.8	. .	. .	43 40.60	36.06	1.65	IV.	3	23.135	37 10.75	18.37	11.17	43 2.9	26 26 40.3
99	8.9	. .	. .	. .	. .	25.4	42.2	. .	44 8.07	36.06	1.66	V.	3	34.511	25 17.16	18.41	9.24	43 30.3	14 44.8
100	9.10	. .	. .	52.2	9.5	. .	. .	. .	46 9.44	36.06	1.65	IV.	2	21.388	38 58.99	18.63	11.47	45 31.7	28 29.1
101	9	. .	. .	. .	. .	53.	9.8	. .	11 46 35.69	−36.06	−1.67	V.	4	47.955	−11 4.62	−18.67	− 6.98	11 46 58.0	− 26 0 30.3

ZONE 245. APRIL 5. C. $D_\circ = -37° 43' 50''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	49.8	9.5	. .	49.2	. .	12 45 9.65	−38.32	. .	IV.	2	15.098	−45 29.40	− 1.52	−22.22	. . .	− 38 29 43.1
2	8	. .	. .	. .	. .	55.2	. .	. .	45 35.24	38.32	. .	V.	2	10.578	50 13.26	1.56	24.14	. . .	34 29.0
3	8	. .	42.1	2.	21.2	. .	. .	. .	50 21.40	38.30	. .	IV.	3	37.264	22 24.43	1.96	13.04	. . .	6 29.4
4	8.9	. .	. .	. .	. .	. .	52.6?	. .	50 13.37	38.30	. .	VI.	2	17.418	43 4.51	1.95	21.25	. . .	27 17.7
5	8	. .	. .	. .	. .	. .	51.8	. .	51 12.68	38.30	. .	VI.	3	26.688	33 27.98	2.03	17.37	. . .	17 37.4
6	9.10	. .	. .	. .	3.	22.8	42.8	. .	53 3.13	38.29	. .	IV.	2	15.685	44 52.52	2.18	21.97	. . .	29 6.7
7	9	. .	. .	34.2	53.5	13.1	32.6	. .	12 55 53.56	38.28	. .	IV.	3	34.279	25 31.71	2.42	14.25	. . .	9 38.4
8	9	. .	46.2	6.3	25.3	44.9	4.5	. .	13 3 25.47	38.26	. .	IV.	3	31.890	28 1.36	3.03	15.22	. . .	38 12 9.6
9	8	. .	10.8	30.7	49.5	9.7	29.3	. .	6 50.09	38.24	. .	IV.	4	51.513	7 21.04	3.31	7.34	. . .	37 51 21.7
10	9.10	. .	15.5	35.5	55.2	14.5	34.2	. .	8 55.00	38.24	. .	IV.	3	26.401	33 45.98	3.48	17.49	. . .	38 17 56.0
11	8	. .	22.7	42.3	2.1	21.5	41.1	. .	14 2.00	38.22	. .	IV.	4	39.602	19 48.53	3.89	12.09	. . .	3 54.5
12	10	. .	17.8	. .	57.2	. .	. .	. .	16 57.11	38.21	. .	IV.	2	38.495	21 1.70	4.12	12.54	. . .	38 5 8.4
13	10	. .	59.2	19.2	. .	. .	. .	. .	21 38.74	38.19	. .	III.	4	46.478	12 36.51	4.50	9.33	. . .	37 56 40.3
14	8.9	. .	. .	17.2	36.3	. .	. .	. .	22 36.52	38.18	. .	IV.	3	37.451	22 12.67	4.58	12.96	. . .	38 6 20.2
15	5	. .	. .	. .	. .	19.5	39.5	. .	23 59.83	38.18	. .	VI.	2	7.448	53 29.79	4.61	25.49	. . .	37 49.9
16	8.9	. .	. .	1.5	21.1	40.5	59.2	. .	25 20.80	38.17	. .	IV.	3	37.908	21 43.75	4.80	12.77	. . .	5 51.3
17	8	. .	. .	3.2	22.5	42.3	2.1	. .	26 22.74	38.17	. .	IV.	3	36.658	23 2.31	4.88	13.29	. . .	6 10.5
18	9	. .	. .	. .	. .	50.2	10.2	. .	26 30.90	38.17	. .	V.	4	43.251	15 59.97	4.89	10.63	. . .	0 5.5
19	8.9	. .	. .	. .	46.2	5.5	25.5	. .	29 46.12	38.15	. .	IV.	3	36.048	23 40.52	5.13	13.54	. . .	7 49.2
20	8.9	. .	55.4	15.3	35.	. .	. .	. .	33 34.88	38.14	. .	IV.	3	28.992	31 3.24	5.45	16.41	. . .	15 15.1
21	10	. .	. .	. .	. .	12.2?	. .	. .	32 52.22	38.14	. .	V.	2	8.491	52 24.20	5.39	25.02	. . .	36 44.6
22	9.10	. .	. .	12.5	. .	51.5	11.	. .	35 32.04	38.13	. .	IV.	4	43.092	16 9.51	5.61	10.66	. . .	0 15.8
23	10	. .	. .	. .	. .	23.2	. .	. .	13 36 3.67	−38.13	. .	V.	4	42.293	−17 0.15	− 5.64	−11.01	. . .	− 38 1 6.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 245	April 5,	12 40	97 2 {30.9 {31.6	34.9 35.0	34.0 34.4	33.9 35.0	28.4 28.8	26.8 27.2	31.74	30.174	54.	44.5	. .	50.	53.2
		13 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	44.			
		13 20	. .	. .	. .	. .	. .	. .	. .	30.188	53.	44.0			
		13 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	43.5			
		14 0	. .	. .	. .	. .	. .	. .	. .	30.188	52.	42.			
		14 20	{31.7 {31.9	36. 35.9	34.9 35.2	35.0 36.0	29.2 29.2	26.4 27.2	32.38	30.192	51.	41.2	58.5	50.7	48.5

REMARKS.

(244) 83. Time of transit over T. IV assumed as $37^s.5$ instead of $57^s.5$.

(244) 84. Minutes of transit assumed as 17^s instead of 18^s.

(244) 88. Minutes assumed as 27, not 26.

(245) 15. Minutes assumed as 22, not 23.

ZONE 245. APRIL 5. C. $D_\circ = -37° 43' 50''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
24	9	..	..	..	..	40.5	..	..	13 37 20.53	−38.12	..	V.	2	9.045	−51 49.33	− 5.75	−24.80	...	− 38 36 9.9
25	10	..	..	43.2	3.2	22.8	..	..	40 3.11	38.11	..	IV.	5	53.715	5 4.51	5.96	6.45	...	37 49 6.9
26	10	..	..	..	19.3	..	..	..	41 19.17	38.10	..	IV.	4	48.495	10 30.48	6.06	8.52	...	37 54 35.6
27	8.9	..	..	..	13.5	33.2	52.9	..	42 13.52	38.09	..	IV.	3	23.646	36 38.69	6.14	18.66	...	38 20 53.5
28	9	..	..	44.2	3.7	23.4	42.7	..	44 3.78	38.09	..	IV.	5	50.489	8 26.51	6.27	7.73	...	37 52 30.5
29	8.9	..	..	52.	11.5	..	..	..	45 11.53	38.08	..	IV.	3	25.602	34 35.98	6.36	17.82	...	38 18 50.2
30	8.9	..	19.3	38.8	58.2	17.7	..	..	47 58.37	38.07	..	IV.	5	47.675	11 23.00	6.58	8.86	...	37 55 28.4
31	9	..	..	28.2	48.2	..	..	..	48 48.01	38.07	..	IV.	2	21.549	38 44.84	6.66	19.53	...	38 23 1.0
32	9	..	..	..	..	..	6.	..	49 26.67	38.06	..	VI.	2	9.285	51 34.59	6.70	24.69	...	35 56.0
33	10	..	22.8	42.5	2.	..	..	..	52 2.25	38.05	..	IV.	2	8.798	52 4.38	6.90	24.89	...	36 26.2
34	9	..	..	..	55.0	15.	..	..	52 55.01	38.05	..	IV.	2	13.572	47 5.17	6.97	22.87	...	31 25.0
35	10	..	..	..	..	..	12.2	..	13 53 33.12	38.05	..	VI.	3	29.659	30 21.27	7.01	16.14	...	14 24.4
36	9.10	..	45.2	5.2	24.5	..	..	..	14 2 24.72	38.00	..	IV.	2	16.413	44 7.04	7.70	21.69	...	28 26.4
37	10	..	5.5	..	44.8	..	..	..	5 44.90	37.98	..	IV.	2	13.554	47 6.30	7.96	22.92	...	31 27.2
38	9.10	..	..	..	32.5	52.	11.8	..	6 32.36	37.97	..	IV.	2	15.745	44 48.76	8.02	22.58	...	29 9.4
39	10	..	..	4.2	..	..	..	..	8 24.00	37.96	..	III.	2	13.492	47 9.69	8.17	22.94	...	31 30.8
40	9.10	..	..	..	37.2	..	..	..	8 37.13	37.96	..	IV.	2	13.302	47 22.17	8.19	23.01	...	31 43.4
41	9.10	..	..	..	..	..	16.5	..	8 37.18	37.96	..	VI.	2	10.000	50 49.63	8.19	24.40	...	35 12.2
42	8	..	..	..	..	..	..	..	10	37.95	..	VII.	3	32.862	26 59.80	8.34	14.83	...	38 11 13.0
43	8.9	..	36.3	56.2	15.8	..	..	..	13 15.74	37.94	..	IV.	4	43.932	15 16.67	8.54	10.34	...	37 59 25.6
44	10	..	..	..	52.5	..	..	..	13 52.36	37.93	..	IV.	4	45.666	13 27.90	8.59	9.64	...	37 57 36.1
45	10	..	..	27.8	..	..	..	..	15 47.49	37.92	..	III.	3	37.997	21 38.04	8.73	12.73	...	38 5 49.5
46	10	..	..	3.2	..	..	..	..	16 22.89	37.92	..	III.	3	37.577	22 4.45	8.78	12.90	...	6 16.1
47	10	..	..	..	31.3	..	..	..	16 31.15	37.92	..	IV.	3	41.251	18 14.15	8.79	11.42	...	38 2 24.4
48	9	..	..	27.5	47.1	..	..	..	17 47.10	37.91	..	IV.	4	47.081	11 59.10	8.88	9.08	...	37 56 7.1
49	9	..	..	..	..	42.2	1.7	..	18 22.60	37.91	..	V.	3	33.752	26 4.59	8.93	14.47	...	38 10 18.0
50	9	..	..	31.2	50.8	10.5	..	..	19 50.89	37.90	..	IV.	5	50.213	8 43.83	9.04	7.84	...	37 52 50.7
51	7	..	..	..	..	52.	..	..	14 22 32.38	−37.88	..	V.	3	32.109	−27 47.75	− 9.23	−15.14	...	− 38 12 2.1

ZONE 246. APRIL 10. C. $D_\circ = -30° 12' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	..	17.3	35.3	53.2	11.2	..	..	11 55 53.23	−30.60	−1.59	IV.	2	21.382	−38 55.37	− 3.09	− 7.80	11 55 21.04	− 30 51 16.3
2	8.9	..	..	..	..	..	..	..	56	..	..	V.	3	31.732	28 11.33	3.15	5.64	56	40 30.1
3	8	..	..	..	..	42.3	59.8	..	57 24.26	30.60	1.75	V.	5	50.076	8 52.56	3.23	1.88	56 51.91	21 7.7
4	9.10	..	..	55.2	12.7	..	..	..	11 59 12.87	30.60	1.50	IV.	3	28.681	31 22.76	3.42	6.27	58 40.77	43 42.4
5	8	..	49.2	..	25.5	43.4	..	..	12 0 25.37	30.60	1.51	IV.	3	37.671	21 58.69	3.50	4.40	11 59 53.26	34 16.6
6	9	..	..	..	..	8.2	26.	..	0 50.32	30.60	1.61	V.	5	56.692	6 8.28	3.53	1.35	12 0 18.11	18 23.2
7	10	..	..	..	..	23.5	..	..	2 5.55	30.59	1.34	V.	3	30.487	29 29.63	3.66	5.90	1 33.62	41 49.2
8	10	..	..	..	..	23.5	..	..	3 5.65	30.59	1.40	V.	4	43.913	15 18.24	3.75	3.15	2 33.66	27 35.1
9	8.9	..	4.2	22.1	..	..	..	..	5 40.17	30.59	1.24	III.	4	43.268	15 58.02	3.99	3.28	5 8.34	28 15.3
10	8	..	..	..	51.1	8.6	26.3	..	5 50.73	30.59	1.12	IV.	3	31.250	28 41.70	4.00	5.74	5 19.02	41 1.4
11	10	..	..	..	29.8	..	..	..	7 29.71	30.59	0.95	IV.	2	18.935	41 28.68	4.15	8.31	6 58.17	53 51.1
12	8	..	..	..	18.	..	..	..	12 8 17.89	−30.59	−0.93	IV.	2	21.302	−39 0.39	− 4.22	− 7.82	12 7 46.47	− 30 51 22.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.		B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 246	April 10, 11 50	89 32	32.1 33.1	31.1 31.2	34.2 34.2	31.1 32.1	24.8 25.9	25.3 25.9	29.84	..	..	60.6	60.	62.	60.5
	12 10		..	..	..	..	..	..	..	29.822	61.	59.5			

ZONE 247. APRIL 11. S. $D_0 = -39° 36' 30''$.

No.	Mag.	SECONDS OF TRANSIT.							T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
		I.	II.	III.	IV.	V.	VI.	VII.											
									h. m. s.	s.	s.			r	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	28.	. .	. .	. .	48.5	. .	9 37 8.40	−31.42	−0.70	II.	3	36.523	−23 10.15	− 2.21	−12.71	9 36 36.3	− 39 59 55.1
2	9	. .	. .	. .	. .	. .	47.	. .	38 6.59	31.42	0.84	.	2	8.583	52 18.49	2.32	27.21	37 34.3	40 29 18.0
3	9	. .	. .	. .	38.	. .	. .	. .	39 37.95	31.42	0.85	.	2	9.398	51 27.01	2.49	26.77	39 5.7	40 28 26.3
4	9	. .	. .	. .	39.	. .	. .	. .	40 38.85	31.42	0.69	.	5	39.218	20 13.89	2.62	11.36	40 6.7	39 56 57.8
5	8	. .	. .	. .	. .	22.	42.3	. .	41 2.03	31.43	0.70	V.	4	36.928	22 36.59	2.66	12.50	40 29.9	39 59 21.8
6	10	. .	. .	. .	. .	31.	50.6	. .	42 10.61	31.43	0.74	V.	3	27.302	32 49.45	2.80	17.39	41 38.4	40 9 39.6
7	10	. .	. .	. .	37.	. .	. .	. .	43 36.85	31.44	0.67	.	4	39.222	20 12.44	2.97	11.35	43 4.7	39 56 56.8
8	11	. .	. .	. .	. .	. .	24.8	. .	44 44.64	31.44	0.73	.	3	27.219	32 54.41	3.11	17.43	44 12.5	40 9 45.0
9	11	. .	. .	49.	9.	. .	. .	. .	48 9.06	31.45	0.64	IV.	5	45.230	13 56.58	3.51	8.36	47 37.0	39 50 38.4
10	9	. .	47.2	. .	28.	. .	. .	. .	49 27.75	31.46	0.70	IV.	3	33.280	26 34.39	3.66	14.33	48 55.6	40 3 22.4
11	9	. .	. .	. .	. .	10.8	. .	. .	49 50.83	31.46	0.61	.	5	51.946	6 55.05	3.71	5.09	49 18.8	39 43 33.8
12	6.7	. .	. .	. .	. .	. .	7.	. .	50 26.87	31.46	0.72	.	3	30.023	29 58.37	3.78	16.00	49 54.7	40 5 48.1
13	10	. .	. .	18.	38.	. .	. .	. .	52 38.02	31.47	0.70	IV.	3	33.740	26 5.34	4.05	14.10	52 5.9	40 2 53.5
14	11	. .	. .	21.	. .	. .	. .	. .	54 41.27	31.47	0.63	.	4	44.472	14 42.41	4.30	8.74	54 9.2	39 51 25.5
15	10	. .	24.	44.	. .	. .	. .	. .	57 4.32	31.48	0.63	III.	4	43.396	15 49.93	4.59	9.27	56 32.2	39 52 33.8
16	9.8	. .	38.	. .	. .	. .	. .	. .	58 18.57	31.48	0.74	.	2	22.112	38 8.14	4.75	20.06	57 46.3	40 15 3.0
17	9.8	. .	. .	. .	. .	45.	5.2	. .	9 58 24.84	31.48	0.74	.	2	22.508	37 45.05	4.76	19.87	9 57 52.6	40 14 40.7
18	9	. .	37.8	58.	. .	. .	. .	. .	10 1 18.22	31.49	0.66	III.	3	38.512	21 5.84	5.11	11.71	10 0 46.1	39 57 52.7
19	10	. .	. .	38.	58.	. .	. .	. .	1 58.06	31.49	0.63	IV.	4	43.660	15 33.80	5.19	9.15	1 25.9	40 52 18.1
20	9	. .	. .	20.	. .	. .	. .	. .	3 40.29	31.50	0.59	.	5	51.122	7 46.27	5.40	5.48	3 8.2	39 44 27.2
21	11	. .	. .	. .	. .	. .	49.	. .	4 8.82	31.50	0.72	.	3	26.365	33 48.05	5.46	17.87	3 36.6	40 10 41.3
22	5.6	. .	. .	. .	3.	23.2	43.	. .	6 2.91	31.51	0.70	IV.	3	28.752	31 18.30	5.69	16.65	5 30.7	40 8 10.7
23	10	. .	. .	27.	. .	. .	. .	. .	10 47.26	31.52	0.63	.	4	42.688	16 34.17	6.26	9.60	10 15.1	39 53 20.0
24	8.9	. .	31.5	52.	. .	. .	. .	. .	12 12.07	31.52	0.61	III.	4	46.442	12 38.77	6.45	7.76	11 39.9	49 23.0
25	8.9	. .	. .	. .	. .	45.5	5.8	. .	12 25.61	31.52	0.58	V.	5	51.100	7 48.28	6.48	5.49	11 53.5	39 44 30.3
26	11 •	. .	. .	58.	. .	. .	. .	. .	15 18.32	31.53	0.76	.	2	16.792	43 42.47	6.84	22.87	14 46.0	40 20 42.2
27	11	. .	. .	11.2	. .	. .	. .	. .	16 31.44	31.53	0.72	.	2	23.578	36 36.99	7.00	19.29	15 59.2	40 13 33.3
28	7.6	. .	. .	0.	20.2	. .	. .	. .	17 20.14	31.54	0.64	IV.	3	40.042	19 29.89	7.09	10.93	16 48.0	39 56 17.9
29	8	. .	. .	. .	37.8	. .	. .	. .	18 37.72	31.54	0.76	.	2	14.692	45 54.79	7.25	23.96	18 5.4	40 22 56.0
30	8.9	. .	. .	46.	. .	. .	. .	. .	21 6.34	31.55	0.76	.	2	14.152	46 28.22	7.55	24.24	20 34.0	23 30.0
31	8	. .	44.2	4.2	. .	. .	. .	. .	24 24.58	31.55	0.70	III.	3	25.368	34 50.53	7.97	18.38	23 52.3	11 46.9
32	8	. .	. .	15.8	. .	. .	. .	. .	25 36.01	31.56	0.66	.	3	34.182	25 37.49	8.11	13.87	25 3.8	2 29.5
33	10	. .	. .	. .	17.	. .	. .	. .	26 16.84	31.56	0.65	.	3	36.172	23 32.87	8.20	12.87	25 44.6	0 23.9
34	9	. .	. .	35.8	. .	15.8	. .	. .	28 55.77	31.57	0.72	III.	2	21.685	38 35.67	8.53	20.27	28 23.5	15 34.5
35	8.9	. .	26.	. .	. .	. .	. .	. .	32 6.65	31.57	0.75	.	2	15.052	45 30.91	8.93	23.77	31 34.3	40 22 33.6
36	8	. .	. .	. .	40.2	0.5	. .	. .	32 40.25	31.57	0.61	IV.	3	42.689	16 43.79	8.99	9.63	32 8.1	39 53 32.4
37	9	. .	. .	. .	3.2	. .	. .	. .	34 3.05	31.57	0.63	.	3	38.780	20 49.03	9.18	11.56	33 30.8	57 39.8
38	10	. .	. .	. .	. .	22.	. .	. .	35 1.91	31.58	0.63	.	3	38.918	20 40.36	9.30	11.49	34 29.7	57 31.2
39	8	. .	. .	. .	. .	8.	27.8	. .	35 47.80	31.58	0.61	V.	3	41.752	17 42.58	9.40	10.09	35 15.6	39 54 32.1
40	7.6	. .	58.5	19.	39.	. .	20.	. .	39 39.23	31.58	0.69	IV.	3	26.002	34 10.83	9.89	18.05	39 7.0	40 11 8.8
41	9	. .	. .	. .	39.	. .	. .	. .	45 38.90	31.58	0.72	.	2	18.100	42 21.11	10.63	22.17	45 6.6	40 19 23.9
42	10	. .	. .	. .	. .	. .	11.	. .	46 30.88	31.59	0.58	.	4	45.289	13 52.25	10.74	8.32	45 58.7	39 50 41.3
43	8.9	. .	. .	24.5	. .	. .	. .	. .	49 44.84	31.59	0.74	.	2	13.652	46 59.52	11.15	24.57	49 12.5	40 24 5.2
44	8.9	. .	. .	24.	. .	. .	. .	. .	50 44.22	31.60	0.68	.	3	26.992	33 8.46	11.27	17.54	50 11.9	10 7.3
45	9.8	. .	. .	. .	16.5	36.8	. .	. .	51 16.42	31.60	0.72	IV.	2	17.770	42 41.75	11.33	22.38	50 44.1	19 45.4
46	6.7	. .	10.	30.2	50.5	. .	. .	. .	55 50.50	31.60	0.69	IV.	2	19.045	41 21.85	11.89	21.67	55 18.2	18 25.4
47	9.10	. .	. .	. .	. .	. .	51.	. .	56 10.87	31.61	0.64	.	3	30.778	29 10.94	11.93	15.61	55 38.6	6 8.5
48	8.9	. .	. .	. .	. .	. .	56.	. .	10 57 15.73	31.61	0.69	.	2	19.455	40 56.75	12.06	21.44	10 56 43.4	18 0.2
49	8.9	. .	50.2	10.8	31.	. .	. .	. .	11 1 30.84	−31.61	−0.64	IV.	3	29.447	−30 34.88	−12.58	−16.27	11 0 58.6	− 40 7 33.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE.							Barom.	THERMOM.				
			A.	B.	C.	D.	E.	F.	Mean.		At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 247	April 11,	9 35	98 54 58.8	57.2	59.8	54.8	48.5	51.3	55.07	30.152	59.7	53.3			
		10 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	52.7			
		10 20	. .	. .	. .	. .	. .	. .	. .	30.162	58.2	51.9			
		10 40	58.8	57.2	60.1	54.8	48.3	50.4	54.93	30.162	58.2	50.7			
		11 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.9			
		11 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	49.2			
		11 40	58.8	57.8	60.1	54.8	48.3	50.2	54.95	30.166	56.	48.7			
		12 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.5			
		12 20	. .	. .	. .	. .	. .	. .	. .	30.164	55.	46.4			

ZONE 247. APRIL 11. S. $D_0 = -39° \ 36' \ 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	10	. .	. .	25.	45.	. .	. .	. .	11 4 45.08	−31.61	−0.53	IV.	5	52.116	− 6 44.32	−12.97	− 5.00	11 4 12.9	− 39 43 32 3
51	10	. .	. .	59.	. .	. .	. .	. .	7 19.35	31.61	0.72	.	2	12.138	48 34.54	13.29	25.37	6 47.0	40 25 43.2
52	7	. .	16.	36.2	. .	. .	. .	. .	8 56.51	31.61	0.67	III.+	3	22.956	37 21.66	13.46	19.66	8 24.2	14 24.8
53	7	. .	. .	. .	34.2	54.5	. .	. .	9 34.15	31.61	0.66	IV.	3	25.038	35 11.30	13.56	18.55	9 1.9	40 12 13.4
54	9	. .	. .	. .	. .	41.	1.5	. .	11 21.21	31.62	0.53	.	5	50.682	8 20.73	13.77	5.66	10 49.1	39 45 10.2
55	10	. .	43.8	. .	. .	. .	. .	. .	19 24.39	31.62	0.67	.	2	20.679	39 37.96	14.74	20.84	18 52.1	40 16 43.5
56	10	. .	. .	. .	. .	32.	52.5	. .	20 12.10	31.62	0.61	V.	3	31.729	28 11.52	14.95	15.13	19 39.9	5 11.6
57	10	. .	. .	. .	38.2	58.8	. .	. .	22 38.32	31.62	0.63	.	3	27.950	32 8.55	15.13	17.06	22 6.1	40 9 10.7
58	5.4	. .	11.8	32.	. .	. .	. .	. .	26 52.22	31.61	0.52	.	5	50.220	8 42.95	15.62	5.89	26 20.1	39 45 34.5
59	5	. .	. .	9.2	29.2	. .	9.5	. .	27 29.26	31.61	0.68	IV.	2	18.045	42 24.57	15.70	22.24	26 57.0	40 19 32.5
60	9.8	. .	34.2	54.8	. .	. .	. .	. .	31 14.90	31.61	0.64	.	2	23.632	36 33.54	16.15	19.30	30 42.6	13 39.0
61	9.10	. .	. .	. .	46.5	0.7	. .	. .	31 46.41	31.61	0.58	IV.	3	35.053	24 42.95	16.20	13.41	31 14.2	1 42.6
62	7.8	. .	33.8	. .	. .	. .	. .	. .	34 14.25	31.61	0.59	.	3	33.610	26 12.94	16.50	14.17	33 42.1	3 13.6
63	10	. .	. .	. .	20.	. .	. .	. .	34 19.84	31.61	0.58	.	3	36.598	23 6.07	16.51	12.66	33 47.7	0 5.2
64	6.7	. .	. .	. .	. .	. .	11.5	. .	34 31.32	31.61	0.63	.	3	26.329	33 50.31	16.53	17.89	33 59.1	40 10 54.7
65	10	. .	. .	. .	18.	. .	. .	. .	38 17.85	31.61	0.55	.	5	41.453	17 53.63	16.97	10.23	37 45.7	39 54 50.8
66	9	. .	. .	. .	. .	. .	7.	. .	38 26.88	31.61	0.53	.	5	46.326	12 47.98	16.99	7.80	37 54.7	39 49 42.8
67	10	. .	. .	. .	37.	. .	. .	. .	40 36.91	31.61	0.68	.	2	16.560	43 57.77	17.24	23.00	40 4.6	40 21 8.0
68	8.9	. .	. .	. .	45.2	. .	. .	. .	43 45.04	31.61	0.58	.	3	34.678	25 6.50	17.61	13.62	43 12.9	2 7.7
69	10	. .	. .	43.	. .	. .	. .	. .	43 3.19	31.61	0.61	.	3	28.663	31 23.70	17.53	16.68	42 31.0	40 8 27.9
70	8	. .	. .	. .	33.	53.	. .	. .	44 32.91	31.61	0.53	IV.	4	44.892	14 16.52	17.70	8.51	44 0.8	39 51 12.7
71	8.9	. .	2.	22.3	. .	. .	. .	. .	49 42.48	31.60	0.60	.	3	30.660	29 18.41	18.29	15.67	49 10.3	40 6 22.4
72	7.6	. .	. .	36.	56.2	16.5	37.	. .	50 56.35	31.60	0.60	IV.	3	30.272	29 43.12	18.44	15.86	50 24.2	6 47.4
73	11	. .	37.	. .	. .	. .	. .	. .	58 17.44	31.59	0.55	.	3	35.493	24 14.85	19.30	13.21	57 45.3	40 1 17.4
74	10	. .	. .	. .	. .	54.	. .	. .	11 58 33.90	31.59	0.54	.	3	37.905	21 43.93	19.33	12.00	11 58 1.8	39 58 45.3
75	10	. .	46.	. .	. .	26.	. .	. .	12 1 6.08	31.59	0.53	V.	3	39.662	19 53.81	19.61	11.11	12 0 34.0	39 56 54.5
76	5.6	. .	. .	. .	. .	. .	22.	. .	1 41.66	31.59	0.66	.	2	14.082	46 33.63	19.68	24.34	1 9.4	40 23 47.6
77	8	. .	. .	27.	. .	7.	. .	. .	3 47.01	31.59	0.58	.	3	30.038	29 57.62	19.92	15.98	3 14.8	7 3.5
78	10.9	. .	. .	18.	. .	. .	. .	. .	6 38.21	31.58	0.55	.	3	34.816	24 57.58	20.25	13.56	6 6.1	2 1.4
79	7.8	. .	. .	24.2	44.5	. .	. .	. .	7 44.44	31.58	0.62	IV.	2	19.429	40 57.87	20.38	21.47	7 12.2	18 9.7
80	9.8	. .	50.5	11.	. .	. .	. .	. .	9 31.15	31.57	0.60	III.	3	23.369	36 55.94	20.57	19.44	8 59.0	14 5.9
81	8	. .	. .	. .	. .	40.	0.5	. .	10 19.94	31.57	0.62	V.	2	19.408	40 59.56	20.67	21.48	9 47.8	18 11.7
82	9	. .	. .	. .	13.	. .	. .	. .	12 12.84	31.57	0.54	.	3	36.389	23 19.31	20.87	12.87	11 40.7	0 23.0
83	9	. .	56.8	17.	. .	. .	. .	. .	15 37.29	31.56	0.60	III.	3	24.038	36 13.85	21.27	19.07	15 5.1	13 24.2
84	8	. .	3.5	. .	44.	. .	. .	. .	15 43.94	31.56	0.60	IV.	3	24.661	35 35.02	21.28	18.73	15 11.8	40 12 45.0
85	8.9	. .	49.	9.	. .	. .	. .	. .	17 29.33	31.55	0.49	.	5	45.788	13 20.93	21.47	8.05	16 57.3	39 50 20.4
86	7	. .	48.5	. .	29.	. .	. .	. .	24 28.96	31.54	0.59	IV.	3	23.930	36 20.74	22.23	19.12	23 56.8	40 13 32.1
87	9	. .	3.	23.	. .	. .	. .	. .	26 43.33	31.54	0.53	III.	3	36.736	22 57.10	22.47	12.60	26 11.3	0 2.2
88	10	. .	. .	. .	20.	. .	. .	. .	27 19.92	31.53	0.63	.	2	15.352	45 13.59	22.54	23.66	26 47.8	22 29.8
89	3	. .	. .	. .	14.2	34.4	. .	. .	28 14.10	31.53	0.58	IV.	3	25.686	34 30.65	22.63	18.22	27 42.0	40 11 41.5
90	8	. .	. .	. .	45.	5.	. .	. .	29 44.88	31.53	0.52	IV.	4	37.432	22 4.77	22.80	12.24	29 12.8	39 59 9.8
91	9	. .	45.3	5.8	. .	. .	. .	. .	32 25.88	31.52	0.50	.	4	40.518	18 50.49	23.08	10.70	31 53.9	55 54.3
92	10	. .	. .	. .	46.3	6.5	. .	. .	32 46.33	31.52	0.46	IV.	5	47.760	11 17.60	23.12	7.11	32 14.3	39 48 17.8
93	7	. .	12.	32.3	. .	. .	. .	. .	35 52.72	31.51	0.66	III.	2	8.182	52 42.62	23.44	27.47	35 20.5	40 30 3.5
94	10	. .	29.	. .	. .	. .	. .	. .	41 9.56	31.50	0.59	.	2	22.486	37 44.74	23.98	19.91	40 37.5	40 14 58.6
95	7.6	. .	. .	. .	40.5	. .	. .	. .	41 40.35	31.50	0.50	.	3	39.200	20 22.86	24.04	11.33	41 8.4	39 57 28.2
96	10	. .	. .	. .	59.5	. .	. .	. .	44 59.34	31.49	0.52	.	3	34.828	24 57.01	24.37	13.55	44 17.3	40 2 4.9
97	8	. .	. .	. .	. .	10.	. .	. .	44 49.83	31.49	0.54	.	3	29.708	30 18.32	24.35	16.15	44 17.8	40 7 28.8
98	9	. .	34.5	. .	. .	. .	. .	. .	12 48 14.91	−31.48	−0.49	.	4	40.786	−18 32.66	−24.68	−10.60	12 47 42.9	− 39 55 37.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(247) 61. Time of transit over T. V assumed as $6^s.7$ instead of $0^s.7$.

(247) 75. Transit over T. III assumed to have been recorded as over T. II.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 247	April 11, 12 40	. .	. .	. .	. .	. .	. .	. .		. .	46.5			
	13 0	. .	. .	. .	. .	. .	. .	. .	30.168	54.	46.3			
	13 35	98 54 58.8	58.2	60.2	55.8	48.3	49.5	55.13						

ZONE 247. APRIL 11. S. $D_{\circ} = -39° 36' 30''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
99	8	. .	. . .	. . .	. .	34.7	5.	. .	12 48 14.64	−31.48	−0.56	V.	3	26.348	−33 49.31	−24.68	−17.88	12 47	− 40 11 1.9
100	8	. .	12.8	33.	. .	. .	. .	. .	50 53.26	31.47	0.56	III.	3	26.883	33 15.30	24.95	17.61	50 21.2	10 27.9
101	9	. .	. . .	. . .	18.	. .	. .	. .	51 17.85	31.47	0.56	.	3	26.630	33 31.49	24.97	17.73	50 45.8	10 44.2
102	8	. .	. . .	. . .	10.8	31.	. .	. .	52 10.75	31.47	0.53	IV.	3	32.640	27 14.42	25.06	14.66	51 38.8	40 4 24.1
103	10	. .	. . .	. . .	. .	. .	23.5	. .	54 43.39	31.46	0.42	. .	5	50.312	8 37.80	25.29	5.82	54 11.5	39 45 38.9
104	9	. .	. . .	30.5	. .	. .	. .	. .	54 50.76	31.46	0.46	.	4	42.468	16 48.18	25.30	9.72	54 18.8	39 53 53.2
105	8	. .	. . .	. . .	. .	20.8	. .	. .	55 0.63	31 45	0.52	.	3	30.196	29 47.83	25.33	15.90	54 28.7	40 6 59.1
106	5.6	. .	. . .	. . .	. .	15.	. .	. .	55 54.87	31.45	0.50	.	3	34.302	25 30.27	25 41	13.81	55 22.9	2 39.5
107	8.7	. .	. . .	. . .	53.5	13.	. .	. .	12 56 53.16	31.45	0.45	IV.	4	43.707	15 30.85	25.50	9.08	12 56 21.3	52 35.4
108	7	. .	22.8	43.	3.	. .	3.5	. .	13 1 3.14	31.43	0.55	IV.	3	24.455	35 48.06	25.88	18.83	13 0 31.2	13 2.8
109	10	. .	44.5	. . .	. .	. .	. .	. .	3 25.03	31.42	0.55	.	3	24.863	35 21.52	26.08	18.63	2 53.1	12 36.2
110	11	. .	. . .	. . .	56.	. .	. .	. .	3 55.87	31.42	0.55	.	3	23.772	36 30.65	26.13	19.19	3 23.9	40 13 46.0
111	10	. .	. . .	. . .	53.	. .	. .	. .	4 52.85	31.41	0.47	.	5	39.700	19 43.51	26.22	11.06	4 21.0	39 56 50.8
112	9	. .	. . .	. . .	. .	36.5	. .	. .	6 16.04	31.41	0.60	.	2	13.152	47 1.82	26.34	24.87	5 44.0	40 24 23.0
113	8	. .	. . .	. . .	35.5	. .	. .	. .	7 35.41	31.40	0.58	.	2	17.018	43 28.92	26.46	22.80	7 3.4	20 48.2
114	6	. .	. . .	. . .	. .	4.	24.	. .	8 43.53	31.40	0.63	V.	2	8.658	52 13.66	26.55	27.24	8 11.5	29 37.4
115	6	. .	17.	. . .	. .	. .	. .	. .	11 57.66	31.39	0.60	.	2	13.906	46 42.72	26.83	24.44	11 25.7	24 4.0
116	8	. .	. . .	59.	. .	. .	59.5	. .	12 19.28	31.38	0.52	III.	3	27.136	32 59.56	26.87	17.49	11 47.4	10 14.0
117	9	. .	36.8	57.	. .	. .	. .	. .	19 17.36	31.36	0.57	III.	2	18.092	42 21.05	27.45	22.23	18 45.4	19 40.7
118	11.10	. .	. . .	. . .	32.	. .	. .	. .	22 31.90	31.35	0.57	.	2	17.880	42 34.72	27.70	22.33	21 0.0	40 19 54.6
119	11	. .	. . .	. . .	. .	. .	18.5	. .	23 38.38	31.34	0.45	.	4	39.369	20 3.79	27.78	11.24	23 6.6	39 57 12.8
120	9	. .	17.5	38.	. .	. .	. .	. .	25 58.13	31.33	0.53	III.	3	24.782	35 27.10	27.95	18.69	25 26.3	39 12 43.7
121	9	. .	41.	1.	. .	. .	. .	. .	27 21.35	31.32	0.51	III.	3	28.070	32 0.90	28.06	16.98	26 49.5	40 9 15.9
122	7	. .	21.	41.5	. .	. .	. .	. .	29 1.58	31.31	0.50	III.	3	29.438	30 35.19	28.18	16.28	28 29.8	7 49.7
123	10	. .	12.	32.5	. .	. .	. .	. .	13 30 52.81	−31.31	−0.61	III.	2	8.620	−52 15.10	−28.30	−17.27	13 30 20.9	− 40 29 40.7

ZONE 248. APRIL 12. C. $D_{\circ} = -23° 56' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10	. .	. .	59.8	. .	33.5	. .	. .	9 41 16.63	−30.63	−2.08	IV.	3	20.416	−40 1.42	− 2.89	−11.48	9 40 43.9	− 24 36 25.8
2	9	. .	. .	. .	59.2	16.5	33.5	. .	41 59.44	30.63	1.95	IV.	3	25.883	34 18.23	2.96	10.66	41 26.9	30 41.8
3	9.10	. .	. .	. .	. .	8.3	25.5	. .	42 51.52	30.63	1.98	V.	3	24.974	35 15.31	3.05	10.77	42 18.9	31 39.1
4	9	. .	. .	30.3	46.8	4.4	21.5	. .	47 47.25	30.65	2.24	IV.	2	11.485	49 16.12	3.57	12.86	47 14.4	45 42.5
5	8.9	. .	19.8	36.9	54.1	11.2	. .	. .	49 53.99	30.66	1.76	IV.	3	34.121	25 41.51	3.78	9.36	49 21.6	22 4.6
6	9	. .	. .	. .	. .	36.5	. .	. .	50 19.44	30.66	2.05	V.	2	19.576	40 48.97	3.82	11.60	49 46.7	37 4.4
7	8	. .	. .	35.3	52.5	. .	26.3	. .	51 52.41	30.67	1.80	IV.	3	31.411	28 31.66	3.98	9.79	51 19.9	24 55.4
8	7.8	. .	44.8	1.3	18.3	35.	52.2	. .	9 57 18.35	30.68	1.97	IV.	3	21.363	39 2.03	4.53	11.35	56 45.7	24 35 27.9
9	7.8	. .	51.5	8.6	25.2	42.	. .	. .	10 0 25.38	30.70	1.28	IV.	5	56.076	2 35.67	4.84	6.02	9 59 53.4	23 58 56.5
10	9	. .	. .	. .	. .	15.3	32.8	. .	0 58.73	30.70	1.52	V.	3	43.589	15 47.42	4.90	7.92	10 0 26.5	24 2 10.2
11	9	. .	. .	. .	. .	53.5	10.5	. .	1 36.68	30.70	1.54	V.	3	42.015	17 26.14	4.96	8.16	1 4.4	13 49.3
12	8.9	. .	. .	. .	. .	34.1	50.3	. .	2 16.88	30.70	1.57	V.	3	40.726	18 47.03	5.03	8.35	1 44.6	15 10.4
13	9	. .	. .	. .	. .	. .	6.3	. .	2 32.56	30.70	1.65	VI.	3	36.604	23 5.70	5.05	8.98	2 0.2	19 29.7
14	10	. .	. .	. .	47.9	. .	. .	. .	5 47.78	30.71	1.46	IV.	4	45.223	13 55.83	5.38	7.66	5 15.6	10 18.9
15	9	. .	. .	. .	. .	28.1	45.2	. .	6 11.32	30.71	1.71	V.	3	32.488	27 24.09	5.42	9.63	5 38.9	23 49.1
16	9	. .	59.3	16.3	. .	. .	. .	. .	8 33.34	30.72	1.94	III.	2	20.501	39 50.07	5.66	11.47	8 0.7	36 17.2
17	10	. .	. .	40.2	57.2	. .	. .	. .	8 57.16	30.73	1.94	IV.	3	20.681	39 44.62	5.70	11.45	8 24.5	36 11.8
18	9	. .	. .	. .	. .	. .	. .	. .	8	30.72	1.53	VII.	4	41.216	18 8.25	5.7	8.28	8	14 32.2
19	9.10	. .	. .	33.	49.5	6.3	. .	. .	10 49.59	30.73	1.62	IV.	3	36.353	23 21.57	5.88	9.02	10 17.2	19 46.5
20	9.10	. .	21.3	38.2	55.1	. .	. .	. .	10 12 55.17	−30.74	−1.84	IV.	3	24.618	−35 37.71	− 6.09	−10.84	10 12 22.6	− 24 32 4.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(247) 99. Time of transit over T. VI assumed as 55ˢ instead of 5ˢ.

(247) 108. Transit over T. VII assumed to have been recorded as over T. VI.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 248	April 12,	9 40	83 17 {31.9 32.5	30.8 31.1	34.3 34.9	31.8 32.8	25.3 26.9	24.5 25.9	30.22	30.184	60.3	53.6	59.	60.5	59.
		10 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	52.9			
		10 20	. .	. .	. .	. .	. .	. .	. .	30.186	59.	51.6			
		10 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	50.8	. .	58.5	58.4
		10 50	{32.2 33.1	30.9 31.9	34.8 35.2	31.9 32.7	25.6 26.4	24.1 24.9	30.31						
		11 0	. .	. .	. .	. .	. .	. .	. .	30.182	58.5	50.2			
		11 50	. .	. .	. .	. .	. .	. .	. .	30.172	57.5	48.8	. .	58.	57.5

ZONE 248. APRIL 12. C. $D_0 = -23° 56' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	9.10	. .	. .	. .	14.2	48.2	. .	. .	10 13 14.27	—30.74	—1.76	IV.	3	27.837	—32 15.65	— 6.12	—11.33	10 12 41.8	— 24 28 43.0
22	7	. .	18.3	35.2	52.2	9.2	25.9	. .	14 52.19	30.74	1.92	IV.	3	19.902	40 33.41	6.29	11.56	14 19.5	37 1.3
23	8.9	. .	22.3	39.2	56.5	. .	. .	. .	17 56.39	30.75	2.11	IV.	2	8.971	51 53.59	6.59	13.25	17 23.5	48 23.4
24	9	. .	. .	. .	. .	. .	52.5	. .	18 18.74	30.75	1.44	VI.	4	43.063	16 12.03	6.63	8.00	17 46.6	12 36.7
25	10	. .	. .	. .	6.8	. .	. .	. .	23 6.68	30.77	1.52	IV.	3	37.578	22 4.64	7.11	8.83	22 34.4	18 30.6
26	10	. .	. .	. .	. .	4.9	. .	. .	23 48.06	30.77	1.30	V.	4	48.758	10 14.22	7.18	7.12	23 16.0	6 38.5
27	9.10	. .	. .	. .	. .	. .	49.?	. .	24 15.28	30.77	1.68	VII.	3	29.315	30 42.98	7.23	10.09	23 42.8	27 10.3
28	10	. .	. .	4.3	20.3	. .	. .	. .	26 20.73	30.78	1.58	IV.	3	33.872	25 57.00	7.42	9.42	25 48.4	22 23.8
29	10	. .	41.	57.8	14.8	. .	. .	. .	28 14.82	30.78	1.52	IV.	3	36.878	22 48.38	7.61	8.94	27 42.5	19 14.9
30	10	. .	. .	. .	34.5	. .	. .	. .	33 34.37	30.79	1.54	IV.	3	34.611	25 10.76	8.14	9.28	33 2.0	21 38.2
31	9	. .	6.2	23.4	40.2	. .	13.4	. .	35 40.09	30.80	1.28	IV.	4	46.359	13 47.35	8.34	7.48	35 8.0	10 13.2
32	9.10	. .	. .	. .	59.1	16.	. .	. .	36 59.04	30.81	1.45	IV.	3	38.075	21 33.39	8.47	8.76	36 26.8	18 0.6
33	7.8	. .	20.4	37.2	54.	11.1	27.7	. .	38 54.11	30.81	1.37	IV.	4	41.532	17 47.49	8.66	8.23	38 21.9	14 14.4
34	8.9	. .	. .	51.2	8.2	25.3	. .	. .	41 8.19	30.81	1.92	IV.	2	12.663	48 2.12	8.86	12.71	40 35.5	44 33.7
35	7	. .	. .	. .	. .	. .	53.2	. .	10 56 19.35	30.85	1.88	VI.	2	11.281	49 29.61	10.25	12.92	10 55 46.6	46 2.8
36	8	. .	43.5	0.4	17.2	34.2	51.2	. .	11 3 17.32	30.86	1.86	IV.	2	9.923	50 53.83	10.86	13.12	11 2 44.6	47 27.8
37	7.8	. .	. .	7.3	25.	. .	. .	. .	48 24.65	30.91	0.78	IV.	5	53.962	4 48.32	14.45	6.31	48 53.0	1 19.1
38	8	. .	. .	. .	. .	. .	24.1	. .	48 50.32	30.91	0.86	VI.	4	50.279	8 39.25	14.48	6.88	48 18.6	5 10.6
39	9	. .	. .	. .	. .	. .	29.5	. .	49 55.70	30.91	1.46	VI.	2	18.525	41 55.21	14.57	11.78	49 23.3	38 31.6
40	10	. .	. .	14.5	31.5	. .	5.3	. .	57 31.50	30.91	0.78	IV.	5	51.665	7 12.56	15.14	6.66	56 59.8	3 44.4
41	10	. .	. .	. .	14.5	. .	. .	. .	11 59 14.44	30.91	1.46	IV.	2	15.917	44 37.91	15.26	12.23	11 58 42.1	41 15.4
42	8	. .	42.8	59.3	16.3	33.5	50.2	. .	12 3 16.49	30.91	0.80	IV.	5	48.317	10 42.83	15.55	7.15	12 2 44.8	7 15.5
43	10	. .	. .	. .	32.3	. .	6.3	. .	6 32.37	30.91	1.23	IV.	3	26.025	34 9.38	15.79	10.65	6 0.2	30 45.8
44	9.10	. .	. .	32.4	49.3	6.5	. .	. .	12 49.36	30.91	1.45	IV.	2	13.600	47 3.42	16.22	12.60	12 17.0	43 42.2
45	10	. .	. .	48.4	5.1	21.7	. .	. .	15 5.05	30.91	1.01	IV.	3	34.772	25 0.53	16.38	9.23	14 33.1	21 36.1
46	8	. .	. .	. .	. .	0.2	. .	. .	15 43.39	30.91	0.66	V.	5	53.091	5 43.30	16.42	6.44	15 11.8	2 16.2
47	7	. .	. .	. .	. .	22.	. .	. .	16 5.20	30.91	0.62	V.	5	54.967	3 45.48	16.45	6.13	15 33.7	0 18.1
48	8.9	. .	. .	. .	. .	. .	38.2	. .	17 4.47	30.91	1.03	VI.	3	33.912	25 54.48	16.52	9.36	16 32.5	22 30.4
49	10	. .	. .	. .	. .	42.8	. .	. .	18 25.65	30.91	1.43	V.	2	13.125	47 33.58	16.60	12.67	17 53.3	44 12.9
50	10	. .	. .	. .	. .	. .	38.5	. .	19 4.76	30.91	0.95	VI.	4	37.108	22 25.73	16.65	8.89	18 32.9	19 1.3
51	10	. .	. .	. .	32.5	49.5	. .	. .	20 32.45	30.91	1.14	IV.	3	27.163	32 58.11	16.74	10.47	20 0.4	29 35.3
52	10	. .	. .	. .	21.	. .	. .	. .	22 20.87	30.91	1.11	IV.	3	28.154	31 55.95	16.86	10.32	21 48.8	28 33.1
53	10	. .	. .	. .	. .	58.2	. .	. .	22 41.26	30.91	1.06	V.	3	31.196	30 50.64	16.88	9.82	22 9.3	27 27.3
54	10	. .	. .	43.1	. .	16.4	. .	. .	24 59.69	30.91	1.47	IV.	2	9.212	51 38.60	17.03	13.26	24 27.3	48 18.9
55	9	. .	. .	. .	57.4	14.2	31.1	. .	25 57.30	30.91	1.03	IV.	3	31.475	28 27.58	17.09	9.78	25 25.4	25 4.4
56	10	. .	. .	25.2	42.	. .	. .	. .	29 42.02	30.90	0.98	IV.	3	33.100	26 45.56	17.33	9.54	29 10.1	23 22.4
57	9	. .	. .	. .	. .	. .	23.	. .	29 49.21	30.90	0.62	VI.	5	51.600	7 17.08	17.34	6.65	29 17.7	3 51.1
58	10	. .	. .	. .	11.5	28.3	. .	. .	31 11.32	30.90	1.27	IV.	2	17.629	42 50.65	17.42	11.99	30 39.2	39 30.0
59	9.10	. .	29.5	46.3	3.2	. .	36.5	. .	34 3.16	30.90	0.71	IV.	4	45.715	13 24.83	17.59	7.54	33 31.6	10 0.0
60	8	. .	14.1	31.	47.5	4.7	21.3	. .	35 47.78	30.90	0.70	IV.	4	45.849	13 16.35	17.70	7.51	35 16.2	9 51.6
61	9	. .	. .	. .	27.8	. .	1.3	. .	36 27.61	30.90	0.76	IV.	4	42.891	16 22.00	17.73	8.00	35 56.0	12 57.7
62	8.9	. .	45.4	. .	19.2	. .	53.1	. .	38 19.27	30.90	0.67	IV.	4	46.511	12 35.00	17.85	7.41	37 47.7	9 0.3
63	8	. .	52.5	9.7	26.2	. .	. .	. .	40 26.44	30.89	0.70	III.	4	44.272	14 55.01	17.97	7.75	39 54.8	11 30.7
64	7	. .	. .	. .	26.7	43.8	0.7	. .	40 26.83	30.89	0.53	IV.	5	53.537	5 15.19	17.97	6.36	39 55.4	24 1 49.5
65	9.10	. .	. .	. .	. .	. .	27.5	. .	40 53.69	30.89	0.47	VI.	5	56.719	1 55.62	17.99	5.85	40 22.3	23 58 29.5
66	9	. .	. .	. .	. .	. .	32.3	. .	41 58.57	30.89	1.00	VI.	3	28.388	31 41.33	18.05	10.29	41 26.7	24 28 19.7
67	10	. .	. .	. .	36.8	53.3	. .	. .	43 36.52	30.89	0.92	IV.	3	32.536	27 21.01	18.13	9.62	43 4.7	23 58.8
68	9	. .	48.3	5.1	22.2	38.5	56.2	. .	47 22.09	30.89	1.13	IV.	2	20.446	39 54.09	18.34	11.51	46 50.1	36 33.9
69	8	. .	. .	. .	. .	. .	14.4	. .	12 47 40.63	—30.89	—0.60	VI.	4	47.386	—11 40.83	—18.36	— 7.28	12 47 9.1	— 24 8 16.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.		B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 248	April 12,	12 0	83 17	31.6 / 32.1	31.3 / 32.0	34.9 / 35.	32.5 / 33.0	25.9 / 26.6	24.3 / 24.5	30.31	. .	. .	48.5			
		12 20		. .	. .	. .	. .	. .	. .	. .	. .	. .	48.2			
		12 45		. .	. .	. .	. .	. .	. .	. .	30.160	56.5	47.3			
		13 0		. .	. .	. .	. .	. .	. .	. .	. .	. .	46.8			
		13 20		30.8 / 31.4	31.5 / 31.9	34.7 / 34.8	32.6 / 33.3	25.5 / 26.4	24.2 / 24.5	30.13	30.154	55.7	47.2	. .	56.	56.
		13 30		. .	. .	. .	. .	. .	. .	. .	.	. .	46.9			
		13 53		. .	. .	. .	. .	. .	. .	. .	30.144	55.1	46.3			

REMARKS.

(248) 21. Transit over T. VI assumed to have been recorded as over T. V.

(248) 31. Micrometer reading assumed as $45^r.359$ instead of $46^r.359$.

(248) 35. Clouds suspected.

(248) 36. Mist obscuring small stars, stopped.

(248) 37. Apparently clear; perhaps a little mist remaining.

ZONE 248. APRIL 12. C. $D_0 = -23° 56' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
70	8.9	. .	14.2	30.8	47.3	. .	21.5	. .	12 50 47.74	−30.88	−0.83	IV.	3	35.343	−24 24.95	−18.53	− 9.15	12 50 16.0	− 24 21 2.6
71	9.10	. .	18.5	. .	52.1	. .	. .	. .	52 52.24	30.88	0.66	IV.	4	42.526	16 45.10	18.65	8.00	52 20.7	13 21.8
72	9.10	. .	. .	29.2	. .	3.3	. .	. .	12 56 46.25	30.87	0.99	IV.	3	25.605	34 35.80	18.85	10.78	12 56 14.4	31 15.4
73	9.10	. .	. .	22.5	39.5	6.2	. .	. .	13 0 39.37	30.87	0.88	IV.	3	30.897	29 3.66	19.05	9.87	13 0 7.6	25 42.6
74	9.10	. .	. .	. .	51.3	. .	. .	. .	1 51.17	30.87	0.80	IV.	3	32.072	25 44.59	19.11	9.35	1 19.5	22 23.0
75	9	. .	. .	38.5	55.5	12.7	29.5	. .	2 45.62	30.87	0.63	IV.	4	42.361	16 55.52	19.17	8.07	2 14.1	13 32.8
76	9.10	. .	7.9	25.2	41.8	58.5	. .	. .	6 41.82	30.86	0.83	IV.	3	31.682	28 14.48	19.35	9.75	6 10.1	24 53.6
77	10	. .	. .	. .	24.2	. .	. .	. .	7 24.09	30.86	0.46	IV.	5	50.151	8 47.65	19.39	6.83	6 53.8	5 23.9
78	9	. .	59.8	. .	33.3	50.5	7.4	. .	9 33.56	30.85	0.60	IV.	4	41.977	17 19.43	19.50	8.12	9 2.1	13 57.0
79	9	. .	. .	. .	38.9	. .	13.	. .	10 39.00	30.85	1.16	IV.	2	13.789	46 51.38	19.55	12.61	10 7.0	43 33.6
80	10	. .	. .	. .	. .	36.5	. .	. .	11 19.55	30.85	0.83	V.	3	29.341	30 41.60	19.58	10.10	10 47.9	27 21.3
81	9.10	. .	. .	. .	. .	. .	0.3	. .	11 26.55	30.85	0.66	VI.	4	38.724	20 44.25	19.59	8.68	10 55.0	17 22.5
82	9	. .	18.2	35.4	51.5	8.7	25.6	. .	13 51.95	30.85	0.47	IV.	5	47.312	11 45.91	19.70	7.29	13 20.6	8 22.9
83	10	. .	52.1	. .	. .	. .	0.2	. .	16 27.19	30.84	0.73	VI.	3	34.149	25 39.75	19.82	9.33	15 55.6	22 18.9
84	8.9	. .	. .	17.3	34.2	51.5	8.3	. .	16 34.38	30.84	0.70	IV.	3	35.854	23 52.64	19.82	9.08	16 2.8	20 31.5
85	9	. .	. .	. .	. .	. .	6.8	. .	17 33.02	30.84	0.97	VI.	2	21.086	39 14.50	19.86	11.44	17 1.2	35 55.8
86	10	. .	. .	. .	. .	. .	28.3	. .	18 54.57	30.83	0.73	VI.	3	33.343	26 30.44	19.93	9.56	18 23.0	23 9.8
87	9.10	. .	. .	. .	. .	59.2	. .	. .	19 42.08	30.83	1.08	V.	2	15.056	45 32.41	19.96	12.38	19 10.2	42 14.7
88	8.9	. .	. .	. .	44.4	1.2	17.9	. .	20 44.23	30.83	0.78	IV.	3	30.765	29 11.94	20.01	9.88	20 12.6	25 51.8
89	10	. .	. .	. .	. .	21.8	38.2	. .	25 21.40	30.82	1.12	IV.	2	11.794	48 56.50	20.20	12.92	24 49.5	45 39.6
90	10	. .	. .	. .	. .	49.5	. .	. .	26 32.44	30.82	0.94	V.	3	20.685	39 44.43	20.27	11.50	26 0.7	36 26.2
91	10	. .	. .	. .	. .	36.2	. .	. .	27 19.20	30.82	0.84	V.	3	25.051	35 10.54	20.30	10.82	26 47.5	31 51.7
92	8	. .	41.8	59.2	. .	32.5	. .	. .	31 15.88	30.81	0.53	IV.	5	39.915	19 29.96	20.48	8.43	30 44.5	16 8.9
93	7	. .	. .	. .	7.3	24.2	41.5	. .	52 7.41	30.75	0.44	IV.	4	39.664	19 44.58	21.33	8.46	51 36.2	16 24.4
94	9	. .	53.3	10.	26.8	43.7	. .	. .	55 27.01	30.74	0.19	IV.	5	51.965	6 53.67	21.44	6.53	54 56.1	3 31.6
95	8	. .	41.5	58.5	15.2	32.4	49.5	. .	58 15.50	30.73	0.12	IV.	5	54.321	4 25.96	21.53	6.16	57 44.7	1 3.7
96	9	. .	. .	42.4	. .	16.5	. .	. .	13 59 59.50	30.72	0.45	IV.	3	36.941	22 44.42	21.59	8.91	13 59 28.3	19 24.9
97	8	. .	40.7	57.4	14.3	31.5	. .	. .	14 2 14.46	30.72	0.85	IV.	2	16.152	44 23.36	21.66	12.23	14 1 42.9	41 7.3
68	8	. .	. .	. .	56.	13.3	29.8	. .	2 56.05	30.71	0.76	IV.	2	20.665	39 40.22	21.67	11.50	2 24.6	36 23.4
99	9	. .	. .	. .	. .	54.2	11.5	. .	3 37.51	30.71	0.59	V.	3	28.666	31 23.76	21.69	10.28	3 6.2	28 5.7
100	8	. .	. .	. .	56.3	13.5	. .	. .	4 56.29	30.71	0.96	IV.	2	9.939	50 52.83	21.70	13.21	4 24.6	47 37.7
101	9.10	. .	39.5	56.5	13.2	. .	. .	. .	8 13.41	30.70	0.79	IV.	2	17.480	43 0.12	21.82	12.03	7 41.9	39 44.0
102	9	. .	. .	. .	9.7	26.5	43.5	. .	9 9.57	30.69	0.44	IV.	3	35.232	24 31.85	21.85	9.16	8 38.4	21 12.9
103	9	. .	9.	25.9	42.8	. .	. .	. .	12 42.85	30.68	0.49	IV.	3	32.128	27 46.56	21.92	9.68	12 11.7	24 28.2
104	6	. .	. .	30.1	46.2	3.5	20.4	. .	16 46.64	30.67	0.14	IV.	5	48.527	10 29.66	22.02	7.09	16 15.8	7 8.8
105	9.10	. .	. .	21.1	. .	. .	11.4	. .	19 37.89	30.66	0.19	IV.	4	45.198	13 57.40	22.08	7.59	19 7.0	10 37.1
106	9.10	. .	. .	37.	53.8	21.1	. .	. .	20 53.93	30.66	0.74	IV.	2	17.221	43 16.31	22.11	12.07	20 22.5	40 0.5
107	9	. .	21.5	. .	55.2	. .	29.3	. .	14 22 55.40	−30.65	−0.70	IV.	2	18.624	−41 48.24	−22.14	−11.81	14 22 24.0	− 24 38 32.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ' ''	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
		° ' ''						''	in.	°	°	°	°	°
Zone 248	1849. h. m. April 12, 14 5	. .	. .	. .	. .	. .	. .	. .	. .	. .	46.4			
	14 20	83 17 {31.1 / 31.5	31.5 / 31.7	34.9 / 34.9	33.4 / 34.1	25.1 / 25.7	24.3 / 24.5	{30.22	30.132	55.	46.3	59.	55.4	56.

REMARKS.

(248) 73. Time of transit over T. V assumed as 56ˢ.2 instead of 6ˢ.2.

(248) 75. Transits over T.'s III, IV, V, and VI assumed as 28ˢ.5, 45ˢ.5, 2ˢ.7, and 19ˢ.5, respectively, not 38ˢ.5, 55ˢ.5, 12ˢ.7 and 29ˢ.5.

(248) 89. Transit over T.'s IV and V assumed as recorded over T.'s V and VI.

(248) 106. Time of transit over T. V assumed as 11ˢ.1 instead of 21ˢ.1.

ZONE 249. APRIL 14. C. $D_0 = -23° 56' 30''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	10	. .	. .	. .	. .	. .	45.3	. .	10 31 11.54	−29.13	−0.72	VI.	4	42.005	−17 18.37	−2.29	−2.10	10 30 41.7	−24 13 52.8
2	10	. .	. .	. .	. .	0.2	. .	. .	32 43.31	29.13	0.72	V.	4	39.625	19 47.52	2.44	2.48	32 13.5	16 22.4
3	10	. .	. .	. .	. .	51.2	7.8	. .	33 34.17	29.13	0.71	V.	3	34.702	25 5.04	2.52	3.26	33 4.3	21 40.8
4	8.9	. .	. .	23.1	39.5	56.4	13.4	. .	35 39.68	29.14	0.78	IV.	4	45.498	13 38.58	2.73	1.55	35 9.8	10 12.9
5	8.9	. .	. .	41.3	58.3	15.4	. .	. .	36 58.33	29.14	0.77	IV.	3	38.194	21 25.99	2.86	2.70	36 28.4	18 1.6
6	9	. .	. .	. .	. .	. .	1.5	. .	37 27.72	29.15	0.72	VI.	2	21.350	38 58.07	2.90	5.37	36 57.8	35 36.3
7	10	. .	. .	. .	. .	. .	52.5	. .	38 18.76	29.15	0.79	VI.	3	37.088	22 35.33	2.08	2.88	37 48.8	19 11.2
8	8	. .	. .	. .	. .	. .	27.5	. .	38 53.74	29.15	0.82	VI.	4	41.658	17 40.20	3.04	2.16	38 23.8	14 15.4
9	8	. .	. .	. .	. .	24.3	. .	. .	40 7.15	29.15	0.74	V.	2	12.808	47 53.34	3.16	6.71	39 37.3	44 33.2
10	10	. .	. .	39.3	55.5	. .	. .	. .	41 55.83	29.16	0.82	IV.	3	34.355	25 26.95	3.34	3.31	41 25.8	22 3.6
11	9.10	. .	27.7	44.3	. .	19.5	. .	. .	44 1.34	29.16	0.79	IV.	2	13.713	46 56.21	3.54	6.60	43 31.29	43 36.3
12	8.9	. .	. .	43.2	59.5	16.6	33.4	. .	46 59.78	29.17	0.92	IV.	5	54.101	4 39.71	3.83	0.21	46 29.7	1 13.7
13	9.10	. .	. .	. .	. .	15.3	32.4	. .	47 58.55	29.17	0.93	V.	5	54.668	4 4.31	3.93	0.12	47 28.4	0 38.4
14	9	. .	. .	16.5	33.7	. .	7.7	. .	49 33.69	29.18	0.84	IV.	2	9.462	50 20.25	4.08	7.10	49 3.7	47 1.4
15	10	. .	. .	. .	. .	56.4	13.5	. .	50 39.59	29.18	0.91	V.	3	27.247	32 52.90	4.19	4.43	50 9.5	29 31.5
16	10	. .	. .	. .	. .	27.1	43.5	. .	53 9.80	29.18	0.90	V.	2	13.752	46 54.14	4.42	6.59	52 39.7	43 35.1
17	7	. .	46.2	3.5	20.8	37.3	54.4	. .	56 20.46	29.19	0.94	IV.	2	11.403	49 21.26	4.70	6.97	55 50.3	46 2.9
18	10	. .	13.2	30.3	47.5	. .	. .	. .	10 58 47.31	29.20	1.08	IV.	4	43.282	15 57.64	4.94	1.90	10 58 17.1	12 34.5
19	7	. .	43.5	0.7	. .	. .	51.5	. .	11 3 17.68	29.21	0.97	IV.	2	9.991	50 49.63	5.38	7.19	11 2 47.5	47 32.2
20	10	. .	. .	56.3	12.5	29.4	. .	. .	9 12.69	29.22	0.99	IV.	3	26.064	34 7.00	5.92	4.62	8 42.5	30 47.5
21	8.9	. .	35.7	52.7	9.2	. .	43.3	. .	12 9.50	29.23	0.99	IV.	3	32.221	27 40.78	6.18	3.65	11 39.3	24 20.6
22	9	. .	20.2	36.7	54.2	10.7	. .	. .	13 53.92	29.23	0.98	IV.	3	30.442	29 32.45	6.33	3.93	13 23.7	26 12.7
23	9.10	. .	. .	. .	28.1	45.2	. .	. .	14 28.15	29.23	1.00	IV.	4	41.575	17 44.72	6.38	2.17	13 57.9	14 23.3
24	8	. .	. .	. .	23.4	40.2	56.9	. .	15 23.23	29.23	0.98	IV.	3	34.112	25 42.07	6.46	3.35	14 53.0	22 21.9
25	9	. .	. .	. .	26.3	43.	0.2	. .	16 26.15	29.23	0.93	IV.	2	12.533	48 10.34	6.56	6.79	15 56.0	44 53.7
26	10	. .	59.7	16.3	33.5	. .	. .	. .	19 33.45	29.24	0.96	IV.	3	31.476	28 27.52	6.83	3.76	19 3.2	25 8.1
27	9	. .	54.	. .	28.2	44.8	1.5	. .	21 27.95	29.24	1.02	IV.	5	52.440	6 24.04	7.00	0.46	20 57.7	3 1.5
28	8	. .	. .	32.5	49.2	6.2	23.1	. .	22 49.32	29.24	1.00	IV.	4	45.328	13 49.30	7.12	1.58	22 19.1	10 28.0
29	10	. .	. .	14.3	. .	48.8	. .	. .	24 31.57	29.25	0.95	IV.	3	32.938	26 55.59	7.25	3.53	24 1.4	23 36.4
30	9.10	. .	56.5	. .	30.4	47.2	. .	. .	27 30.35	29.25	0.92	IV.	3	27.751	32 21.10	7.51	4.35	27 0.2	29 3.0
31	9	. .	. .	1.5	. .	35.5	52.2	. .	31 18.42	29.26	0.86	IV.	2	11.982	48 44.76	7.84	6.87	30 48.3	45 29.5
32	9.10	. .	. .	. .	. .	37.5	54.1	. .	31 20.28	29.26	0.86	V.	2	10.316	50 29.81	7.84	7.15	31 50.2	47 14.8
33	8	. .	. .	. .	. .	. .	. .	. .	32	. .	0.97	VII.	5	51.698	7 10.86	8.0	0.57	32	3 49.4
34	10	. .	. .	. .	44.	60.2	. .	. .	36 43.50	29.26	0.84	IV.	2	7.885	53 1.63	8.29	7.53	36 13.4	49 47.5
35	9	. .	. .	. .	. .	38.5	. .	. .	38 21.64	29.26	0.94	V.	4	45.202	13 57.53	8.42	1.60	37 51.4	10 37.5
36	9	. .	. .	. .	. .	. .	16.5	. .	38 42.75	29.26	0.91	VI.	4	40.493	18 53.44	8.46	2.50	38 12.6	15 34.4
37	8	. .	. .	. .	. .	. .	40.5	. .	39 6.71	29.26	0.95	VI.	5	53.228	5 34.96	8.49	0.32	38 36.5	2 13.8
38	8	. .	. .	. .	. .	. .	. .	. .	39	. .	0.93	VI.	4	47.328	11 44.47	8.5	1.26	39	8 24.3
39	9	. .	. .	. .	. .	53.2	. .	. .	40 36.13	29.27	0.84	V.	3	18.845	41 39.78	8.61	5.78	40 6.0	38 24.2
40	10	. .	. .	. .	. .	. .	25.5	. .	40 51.78	29.27	0.88	VI.	.	F.Wire.	29 59.13	8.64	4.00	40 21.63	26 41.8
41	8.9	. .	. .	. .	. .	. .	0.2	. .	41 26.45	29.27	0.90	VI.	4	41.021	18 20.17	8.67	2.26	40 56.3	15 1.1
42	10	. .	. .	48.3	5.2	. .	. .	. .	45 5.19	29.27	0.88	IV.	4	37.423	22 5.33	8.97	2.83	44 35.0	18 47.1
43	10	. .	. .	. .	0.5	. .	. .	. .	46 0.42	29.27	0.82	IV.	2	18.275	42 10.27	9.04	5.87	45 30.3	38 55.2
44	8	. .	6.5	24.2	41.	. .	. .	. .	48 40.86	29.27	0.87	III.	3	37.882	21 45.19	9.25	2.75	48 10.7	18 27.2
45	8	. .	. .	. .	50.2	. .	23.8	. .	48 50.05	29.27	0.91	IV.	4	50.555	8 21.17	9.26	0.75	48 19.9	5 1.2
46	8	. .	. .	. .	. .	. .	58.5	. .	48 24.70	29.27	0.92	VII.	5	54.061	4 42.57	9.23	0.20	47 54.5	1 22.0
47	10	. .	. .	. .	37.2	. .	. .	. .	51 37.08	29.28	0.87	IV.	4	41.972	17 19.68	9.49	2.09	51 6.9	14 1.2
48	10	. .	. .	47.2	3.2	. .	. .	. .	53 3.61	29.28	0.83	IV.	3	30.304	29 41.12	9.59	3.95	52 33.5	26 24.7
49	10	. .	. .	20.2	37.2	. .	. .	. .	11 54 37.16	−29.28	−0.85	IV.	4	42.348	−16 56.33	−9.72	−2.04	11 54 7.0	−24 13 38.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(249) 11. T. V assumed as 18ˢ.5, not 19ˢ.5.
(249) 14. Micrometer revolutions assumed as 10.462, not 9.462.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 249	April 14, 10 30	83 17 {32.9 32.7	35.1 34.6	36.3 36.2	36.2 36.5	26.1 26.5	26.3 26.6	32.17	30.070	46.5	33.1	48.5	47.5	48.8
	10 40	. . .	. .	. .	. .	. .	. .	. .	. .	. .	32.8			
	11 0	. . .	. .	. .	. .	. .	. .	. .	30.070	44.8	32.5			
	11 20	. . .	. .	. .	. .	. .	. .	. .	. .	. .	32.2			
	11 40	. . .	. .	. .	. .	. .	. .	. .	30.064	42.6	32.			
	12 0	{32.6 32.1	36.5 35.8	39.1 38.7	37.1 37.3	27.1 27.5	25.1 25.4	32.86	30.060	42.2	31.8	48.	37.5	45.3

ZONE 249. APRIL 14. C. $D_0 = -23° 56' 30''$—Continued.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	9.10	. .	. .	14.2	31.5	. .	. .	. .	11 57 31.34	−29.28	−0.87	IV.	5	51.762	− 7 6.42	− 9.95	− 0.55	11 57 1.2	− 24 3 46.9
51	9.10	. .	. .	46.2	2.5	. .	. .	. .	11 59 2.46	29.28	0.87	IV.	5	53.823	4 57.04	10.06	0.22	11 58 32.3	1 37.3
52	10	. .	. .	15.2	. .	. .	. .	. .	12 0 32.19	29.28	0.81	III.	3	34.204	25 36.17	10.18	3.33	12 0 2.1	22 19.7
53	10	. .	. .	. .	. .	52.5	. .	. .	0 35.51	29.28	0.79	V.	3	26.716	33 26.09	10.18	4.52	0 5.4	30 10.8
54	8	. .	. .	. .	16.5	33.3	. .	. .	12 3 16.43	−29.28	−0.85	IV.	3	48.423	−10 36.18	−10.39	− 1.08	12 21 46.3	− 24 7 17.7

ZONE 250. APRIL 16. S. $D_0 = -22° 43' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	4.5	. .	. .	25.	42.	59.	15.5	. .	9 52 41.99	−28.80	−3.10	.	3	29.840	−30 9.98	− 3.45	−10.03	9 52 10.1	− 23 14 3.5
2	7	. .	45.	2.	. .	. .	. .	. .	55 18.76	28.82	3.18	.	4	38.200	21 16.01	3.69	8.74	54 46.8	23 5 8.4
3	9	. .	. .	. .	. .	35.	. .	. .	55 18.33	28.82	3.31	.	5	50.575	8 21.30	3.69	6.86	54 46.2	22 52 11.9
4	7	. .	14.5	. .	. .	. .	. .	. .	57 48.24	28.83	2.95	.	3	20.783	39 37.71	3.91	11.42	57 16.5	23 23 33.0
5	4.5	. .	. .	. .	56.5	. .	. .	. .	57 56.46	28.83	2.84	.	2	11.172	49 35.69	3.92	12.81	57 24.8	33 32.4
6	9	. .	. .	. .	. .	. .	48.	. .	58 14.56	28.83	3.00	.	3	26.388	33 46.80	3.95	10.55	57 42.7	17 41.3
7	8	. .	. .	. .	. .	31.	. .	. .	9 59 14.07	28.83	2.91	.	2	17.860	42 33.97	4.04	11.89	58 42.4	23 26 29.9
8	9	. .	. .	. .	28.5	. .	. .	. .	10 0 28.39	28.84	3.33	.	.	.808	5 6.29	4.15	6.66	9 59 56.22	22 48 57.1
9	7.6	. .	. .	. .	. .	43.	. .	. .	1 26.16	28.84	2.97	.	3	24.678	35 33.95	4.24	10.81	10 0 54.4	23 19 29.0
10	9	. .	. .	. .	43.	. .	. .	. .	2 42.87	28.85	3.06	.	3	32.653	27 13.61	4.35	9.60	2 11.0	11 7.6
11	9	. .	. .	. .	. .	29.5	. .	. .	3 12.74	28.85	3.08	.	3	34.555	25 14.40	4.40	9.31	2 40.8	9 8.1
12	10	. .	. .	. .	. .	. .	11.5	. .	3 38.05	28.85	3.18	.	4	43.103	16 9.58	4.43	8.01	3 6.0	0 2.0
13	9	. .	. .	31.	. .	. .	. .	. .	5 47.85	28.86	2.90	.	2	22.298	37 57.41	4.63	11.20	5 16.1	21 53.2
14	4	. .	5.5	22.	39.	. .	. .	. .	7 38.97	28.87	3.11	.	3	39.172	20 24.62	4.79	8.59	7 7.0	4 18.0
15	5	. .	29.	46.	. .	. .	. .	. .	11 2.76	28.88	3.03	.	3	35.985	23 44.28	5.10	9.09	10 30.9	23 7 38.5
16	8	. .	. .	. .	48.8	. .	. .	. .	11 48.68	28.88	3.13	.	4	44.372	14 49.30	5.17	7.81	11 16.7	22 58 42.3
17	10	. .	. .	22.5	. .	. .	. .	. .	13 39.38	28.89	3.10	.	4	42.771	16 28.96	5.34	8.05	13 7.4	23 0 22.4
18	7	. .	. .	. .	. .	18.	. .	. .	14 1.33	28.89	3.17	.	5	49.734	9 13.96	5.37	6.99	13 29.3	22 53 6.3
19	6.5	. .	. .	. .	56.8	. .	. .	. .	14 56.68	28.89	3.12	.	4	45.618	13 30.98	5.45	7.62	14 24.7	22 57 24.5
20	7.6	. .	53.	10.	27.	. .	. .	. .	16 26.89	28.89	2.69	.	2	10.210	50 36.02	5.60	13.06	15 55.3	23 34 34.7
21	7	. .	12.	. .	. .	. .	. .	. .	20 45.68	28.91	3.04	.	4	42.035	17 14.60	5.98	8.17	20 13.7	1 8.8
22	9.8	. .	. .	59.5	. .	. .	. .	. .	21 16.34	28.91	2.97	.	3	37.150	22 31.32	6.03	8.91	20 44.5	6 26.3
23	8.9	. .	16.	. .	. .	. .	. .	. .	23 49.68	28.92	2.96	.	3	38.580	21 1.26	6.26	8.70	23 17.8	23 4 56.2
24	9	. .	. .	55.	. .	. .	. .	. .	24 11.89	28.92	3.04	.	4	45.372	13 45.98	6.30	7.66	23 39.9	22 57 39.9
25	7	. .	. .	. .	. .	. .	3.5	. .	24 30.02	28.92	2.74	.	2	19.770	40 36.99	6.32	11.57	25 58.4	23 24 34.9
26	3	. .	. .	7.5	. .	. .	. .	. .	27 24.39	28.93	3.02	.	4	44.724	14 26.46	6.58	7.75	26 52.4	22 58 20.8
27	7	. .	. .	. .	. .	54.5	11.	. .	27 37.50	28.93	2.63	.	2	12.974	47 42.93	6.60	12.55	27 5.9	23 31 42.1
28	8	. .	. .	13.5	. .	. .	. .	. .	30 30.34	28.94	2.90	.	3	36.709	22 58.86	6.86	8.99	29 58.5	6 54.7
29	10	. .	. .	43.	. .	. .	. .	. .	31 59.81	28.95	2.78	.	3	28.298	31 46.78	7.00	10.27	31 28.1	23 5 44.0
30	9	. .	. .	. .	3.	. .	. .	. .	33 2.89	28.95	2.99	.	5	48.972	10 1.54	7.09	7.19	32 31.0	22 53 55.8
31	7	. .	. .	. .	. .	. .	53.5	. .	33 20.02	28.95	3.04	.	5	52.325	6 31.70	7.12	6.69	32 48.0	22 50 25.5
32	6	. .	14.8	32.	. .	. .	. .	. .	37 48.65	28.97	2.78	.	3	31.952	27 57.34	7.51	9.71	37 16.9	23 11 54.6
33	8	. .	5.2	22.	. .	. .	. .	. .	44 38.90	28.98	2.93	.	5	49.388	9 35.30	8.12	7.13	44 7.0	22 53 30.6
34	8	. .	. .	. .	18.	. .	. .	. .	45 17.96	28.99	2.46	.	2	10.340	50 27.92	8.18	12.95	44 46.5	23 34 29.1
35	8	. .	27.8	. .	. .	. .	. .	. .	47 1.58	28.99	2.47	.	2	12.649	48 1.86	8.34	12.60	46 30.1	32 2.8
36	10	. .	. .	. .	7.	. .	. .	. .	47 6.88	28.99	2.63	.	3	26.015	34 10.01	8.35	10.59	46 35.3	18 9.0
37	9	. .	13.5	. .	. .	. .	. .	. .	48 47.19	29.00	2.67	.	3	30.515	29 27.38	8.50	9.92	48 15.5	13 25.8
38	7	. .	. .	1.2	. .	. .	. .	. .	49 18.00	29.00	2.66	.	3	29.556	30 27.79	8.55	10.07	48 46.3	14 26.4
39	10	. .	. .	27.5	. .	. .	. .	. .	50 44.33	29.00	2.71	.	3	35.526	24 13.22	8.67	9.18	50 12.6	8 11.1
40	8	. .	. .	. .	. .	20.8	. .	. .	10 51 4.01	−29.00	−2.65	.	3	29.860	−30 8.79	− 8.71	−10.03	10 50 32.4	− 23 14 7.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(249) 51. Transit over T. III assumed as at 45ˢ.2, not 46ˢ.2.

(250) 8. Micrometer reading assumed as 53ʳ.808.

(250) 26. Minutes of transit assumed as 26, not 27.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 250	April 16, 9 50	82 4 61.2	61.2	66.	59.0	52.	52.2	58.60	29.838	48.	41.5	47.5	51.8	49.0
	10 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	41.4			
	10 20	. .	. .	. .	. .	. .	. .	. .	29.848	. .	40.8			
	10 40	. .	. .	. .	. .	. .	. .	. .	29.850	46.5	40.2			
	11 0	61.2	61.2	66.	59.0	52.	51.6	58.50	29.858	46.2	40.			
	11 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	39.5			
	11 40	61.2	62.2	66.3	60.5	52.8	51.6	59.10	. .	. .	38.8			
	12 0	. .	. .	. .	. .	. .	. .	. .	29.856	45.	38.5			
	12 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	37.3			

ZONE 250. APRIL 16. S. $D_0 = -22° 43' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
41	7	. .	. .	. .	. .	6.	22.8	. .	10 51 49.21	−29.00	−2.53	VI.	2	20.479	−39 52.71	− 8.77	−11.43	10 51 17.7	− 23 23 52.9
42	7	. .	35.3	. .	9.	. .	. .	. .	56 8.93	29.01	2.65	.	3	32.995	26 52.08	9.15	10.55	55 37.3	23 10 51.8
43	9	. .	. .	. .	. .	53.5	10.	. .	10 56 36.67	29.01	2.80	.	4	44.637	14 32.93	9.18	7.81	56 4.9	22 58 39.9
44	7.8	. .	35.8	52.8	. .	. .	. .	. .	11 0 9.58	29.02	2.51	.	3	23.928	36 20.74	9.51	10.90	10 59 38.1	23 20 21.2
45	7.6	. .	. .	. .	10.	27.	. .	. .	1 10.08	29.03	2.70	.	4	40.580	18 47.16	9.60	8.42	11 0 38.3	2 45.2
46	9	. .	. .	40.	. .	. .	. .	. .	5 56.88	29.04	2.69	.	4	42.953	16 17.55	10.03	8.07	5 25.2	0 15.6
47	10	. .	. .	. .	. .	. .	34.	. .	6 0.56	29.04	2.66	.	4	41.107	18 14.84	10.04	8.35	5 28.8	23 2 13.2
48	10.9	. .	. .	38.3	. .	. .	. .	. .	7 55.25	29.04	2.79	.	5	52.970	5 50.28	10.21	6.58	7 23.4	22 49 47.1
49	9	. .	57.	14.	30.5	. .	. .	. .	9 30.62	29.04	2.51	.	3	30.253	29 44.25	10.36	9.96	8 59.1	22 13 44.6
50	9	. .	. .	13.8	. .	. .	. .	. .	10 30.71	29.05	2.28	.	2	11.253	49 30.11	10.45	12.82	9 59.4	23 33 33.4
51	6.7	. .	10.5	27.5	. .	. .	. .	. .	11 44.34	29.05	2.30	.	2	13.318	47 20.66	10.55	12.51	11 13.0	31 23.7
52	9.8	. .	. .	. .	. .	28.	. .	. .	12 11.26	29.05	2.59	.	4	38.058	21 25.80	10.60	8.80	11 39.6	23 5 25.2
53	7	. .	. .	. .	25.7	. .	. .	. .	13 25.59	29.05	2.70	.	5	40.800	10 12.33	10.71	7.19	12 53.8	22 54 10.2
54	7	. .	. .	. .	33.	. .	. .	. .	14 32.87	29.05	2.51	.	3	33.553	26 17.20	10.81	9.47	14 1.3	23 10 17.5
55	8	. .	. .	. .	. .	12.2	. .	. .	14 55.32	29.06	2.36	.	2	22.283	37 59.23	10.84	11.16	14 23.9	23 22 1.2
56	7	. .	. .	. .	. .	57.	. .	. .	15 40.32	29.06	2.69	.	4	48.530	10 28.72	10.90	7.23	15 8.6	22 54 36.8
57	6	. .	. .	. .	. .	41.	. .	. .	16 24.32	29.06	2.67	.	4	47.860	9 5.09	10.96	7.02	15 52.6	53 3.1
58	10	. .	48.	. .	. .	. .	. .	. .	19 21.68	29.06	2.65	.	4	48.032	10 58.22	11.23	7.31	18 50.0	55 6.8
59	9	. .	. .	8.	. .	. .	. .	. .	20 24.88	29.07	2.59	.	4	43.745	15 27.90	11.32	7.94	19 53.2	59 27.2
60	6	. .	53.3	. .	27.	. .	. .	. .	21 26.93	29.07	2.57	.	4	43.278	15 57.90	11.41	8.02	20 55.3	22 59 57.3
61	9	. .	54.5	. .	27.8	. .	. .	. .	24 28.00	29.07	2.23	.	2	16.488	44 2.34	11.69	12.04	23 56.7	23 28 6.1
62	8.7	. .	17.8	34.5	. .	. .	. .	. .	25 51.42	29.07	2.48	.	4	38.250	21 12.93	11.81	8.77	25 19.9	5 13.5
63	8	. .	. .	. .	. .	20.	36.8	. .	26 3.31	29.07	2.49	.	4	38.768	20 37.79	11.82	8.69	25 31.8	23 4 38.3
64	10	. .	. .	. .	. .	46.5	. .	. .	27 29.83	29.08	2.60	.	5	50.142	8 48.47	11.95	7.00	26 58.2	22 52 47.4
65	8	. .	. .	. .	. .	37.8	54.5	. .	28 21.07	29.08	2.51	.	4	43.082	16 10.52	12.03	8.05	27 49.5	23 0 10.6
66	5	. .	. .	. .	47.	4.	. .	. .	29 46.97	29.08	2.10	.	2	8.570	52 18.87	12.16	13.25	29 15.8	36 24.3
67	10	. .	. .	21.	. .	. .	. .	. .	31 37.88	29.08	2.49	.	5	42.653	16 37.88	12.32	8.11	31 6.3	0 38.3
68	8	. .	. .	. .	. .	20.	36.8	. .	32 3.17	29.08	2.17	.	2	16.196	44 21.03	12.36	12.07	31 31.9	28 25.5
69	9	. .	38.	. .	. .	. .	. .	. .	34 11.78	29.09	2.12	.	2.	13.466	47 10.69	12.55	12.50	33 40.6	31 15.7
70	10	. .	. .	. .	. .	35.	. .	. .	34 18.21	29.09	2.31	.	3	29.413	30 31.99	12.56	10.09	33 46.8	14 34.6
71	6.7	. .	. .	. .	. .	13.5	30.5	. .	34 56.73	29.09	2.10	.	2	11.679	49 4.20	12.61	12.77	34 25.5	33 9.6
72	9	. .	. .	17.8	. .	. .	. .	. .	36 34.66	29.09	2.21	.	3	21.429	38 57.69	12.76	11.29	36 3.4	23 1.7
73	10	. .	36.5	. .	. .	. .	. .	. .	44 10.26	29.10	2.09	.	2	16.658	43 50.42	13.41	12.02	43 39.1	27 55.9
74	8	. .	. .	. .	. .	39.	. .	. .	44 22.29	29.10	2.39	.	4	42.680	16 35.74	13.43	8.11	43 50.8	0 37.3
75	10	. .	. .	. .	. .	. .	19.	. .	44 45.56	29.10	2.36	.	4	40.	19	13.	8.	44 14.1	3
76	9	. .	32.3	49.2	. .	. .	. .	. .	51 6.01	29.11	2.28	.	4	38.370	21 5.41	14.01	8.76	50 34.6	5 8.2
77	10	. .	. .	. .	. .	. .	46.	. .	51 12.49	29.11	2.01	.	2	14.638	45 58.94	14.02	12.32	50 41.4	30 5.3
78	9	. .	39.5	. .	. .	. .	. .	. .	53 13.18	29.11	2.30	.	4	42.402	16 51.69	14.19	8.15	52 41.8	23 0 54.0
79	10	. .	. .	49.	. .	. .	. .	. .	55 5.91	29.11	2.35	.	5	47.520	11 32.49	14.35	7.37	54 34.4	22 55 34.2
80	9	. .	. .	. .	. .	. .	54.	. .	55 20.59	29.11	2.15	.	3	30.708	29 15.58	14.37	9.90	54 49.3	23 13 19.9
81	9	. .	20.8	37.8	. .	. .	. .	. .	57 54.56	29.11	2.09	.	3	27.383	32 44.18	14.59	10.38	57 23.4	23 16 49.2
82	10	. .	. .	. .	. .	55.5	. .	. .	58 38.81	29.12	2.31	.	5	46.472	12 38.89	14.65	7.54	58 7.4	22 56 41.1
83	6	. .	. .	. .	51.3	. .	. .	. .	11 59 51.18	29.12	2.31	.	5	47.228	11 51.19	14.75	7.41	59 19.8	55 53.4
84	5	. .	. .	. .	. .	43.2	60.	. .	12 0 26.53	29.12	2.42	.	5	56.000	2 48.36	14.80	6.12	11 59 55.0	22 46 49.3
85	10	. .	30.	. .	. .	. .	. .	. .	7 3.69	29.12	2.08	.	3	31.516	28 24.57	15.33	9.77	12 6 32.5	23 12 29.7
86	10	. .	39.2	. .	. .	. .	. .	. .	8 12.88	29.12	2.24	.	5	46.190	12 55.46	15.44	7.56	7 41.5	22 56 58.5
87	10	. .	. .	. .	. .	53.	. .	. .	8 36.29	29.12	2.20	.	4	42.869	16 23.82	15.47	8.08	8 5.0	23 0 27.4
88	7	. .	. .	24.	. .	. .	. .	. .	10 40.82	29.12	2.07	.	3	33.232	26 37.21	15.63	9.51	10 9.6	10 42.4
89	9	. .	. .	. .	. .	39.	. .	. .	12 11 22.17	−29.12	−1.97	.	3	26.419	−33 44.91	−15.69	−10.53	12 10 51.1	− 23 17.51.1

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(250) 57. Micrometer reading assumed as $49^r.860$, not $47^r.860$.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 250	April 16, 12 40	82 4 61.0	63.2	66.3	61.0	52.8	51.6	59.32	. .	. .	35.9			
	13 0	. .	. .	. .	. .	. .	. .	. .	29.866	43.7	35.5			
	13 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	34.3			
	13 40	. .	. .	. .	. .	. .	. .	. .	29.858	42.2	34.2			

ZONE 250. APRIL 16. S. $D_{\circ} = -22° \; 43' \; 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' "	"	"	h. m. s.	° ' "
90	9	. .	. .	59.8	. .	. .	. .	. .	12 14 16.66	−29.12	−1.89	.	3	21.279	−39 7.10	−15.91	−11.32	12 13 45.7	− 23 23 14.3
91	6	. .	. .	. .	10.	. .	. .	. .	15 9.91	29.12	1.87	.	3	20.400	40 2.43	15.98	11.45	14 38.9	24 9.9
92	8	. .	. .	33.	. .	. .	. .	. .	16 49.86	29.12	1.86	.	3	19.948	40 30.40	16.11	11.52	16 18.9	24 38.0
93	9	. .	. .	. .	31.5	. .	. .	. .	17 31.38	29.12	2.13	.	5	43.202	16 3.86	16.17	8.02	17 0.1	0 8.0
94	9	. .	. .	. .	. .	16.	. .	. .	17 58.99	29.12	1.75	.	2	11.318	49 25.59	16.20	11.84	17 28.1	33 33.6
95	7	. .	. .	. .	. .	18.2	. .	. .	19 1.28	29.13	1.83	.	2	18.315	42 6.75	16.28	11.78	18 30.3	23 26 14.8
96	6	. .	24.8	41.8	59.	. .	. .	. .	22 58.70	29.13	2.18	.	5	51.015	7 53.37	16.59	6.85	22 27.4	22 51 56.8
97	7	. .	. .	59.5	. .	33.	. .	. .	25 16.24	29.13	1.82	.	3	22.248	38 6.43	16.75	11.17	24 45.3	23 22 14.3
98	8	. .	20.	. .	. .	.	. .	. .	26 53.76	29.13	1.75	.	2	17.189	43 17.19	16.87	11.95	26 22.9	27 26.0
99	9	. .	. .	. .	12.5	. .	. .	. .	27 12.38	29.13	1.85	.	3	25.779	34 24.75	16.89	10.62	26 41.4	18 32.3
100	9	. .	. .	. .	33.5	. .	. .	. .	28 33.38	29.13	2.05	.	5	42.913	16 21.81	16.99	8.06	28 2.2	0 26.9
101	7.6	. .	. .	. .	33.2	. .	. .	. .	29 33.08	29.13	1.82	.	3	25.088	35 8.22	17.07	10.73	29 2.1	19 16.0
102	9	. .	. .	. .	6.	. .	. .	. .	32 5.86	29.13	1.88	.	5	31.820	27 57.90	17.25	9.73	31 34.9	23 12 4.9
103	7	. .	. .	. .	. .	. .	45.8	. .	32 12.34	29.13	2.04	.	4	44.292	14 55.01	17.25	7.83	31 41.2	22 59 0.1
104	8	. .	. .	1.8	18.2	. .	. .	. .	34 18.37	29.12	1.97	.	4	40.740	18 37.00	17.40	8.38	33 47.2	23 2 42.8
105	7	. .	. .	24.	40.3	. .	. .	. .	35 40.53	29.12	1.97	.	4	42.340	16 56.90	17.49	8.15	35 9.4	1 2.5
106	8	. .	. .	. .	24.8	41.5	. .	. .	36 24.64	29.12	1.68	.	2	16.960	43 32.55	17.55	12.00	35 53.8	27 42.1
107	8	. .	. .	56.	. .	. .	. .	. .	42 12.91	29.12	1.54	.	2	9.489	51 20.74	17.95	13.13	41 42.3	35 31.8
108	7	. .	. .	. .	52.	. .	. .	. .	42 51.91	29.12	1.62	.	3	20.930	39 28.93	18.00	11.37	42 21.2	23 38.3
109	9	. .	41.	58.	. .	. .	. .	. .	45 14.81	29.12	1.58	.	2	18.812	41 35.82	18.15	11.71	44 44.1	23 25 45.7
110	10	. .	20.3	. .	53.	. .	. .	. .	47 53.43	29.12	1.97	.	5	49.792	9 10.06	18.33	7.03	47 22.3	22 53 15.4
111	7.8	. .	9.	25.2	. .	. .	. .	. .	52 42.36	29.12	1.79	.	4	37.540	21 57.43	18.65	8.90	52 11.5	23 6 5.0
112	9	. .	. .	. .	. .	1.6	. .	. .	52 44.77	29.12	1.65	.	3	25.960	34 13.46	18.65	10.60	52 14.0	18 22.7
113	8	. .	0.5	17.5	. .	. .	. .	. .	55 34.27	29.11	1.61	.	3	24.050	36 13.16	18.84	10.88	55 3.5	23 20 22.9
114	10	. .	59.	16.5	. .	. .	. .	. .	12 58 33.06	29.11	1.91	.	5	51.706	7 9.62	19.03	6.73	12 58 2.0	22 51 15.4
115	7	. .	. .	. .	. .	24.	. .	. .	13 1 7.28	29.11	1.77	.	4	42.323	16 58.27	19.21	8.13	13 0 36.4	23 1 5.6
116	8	. .	13.	. .	. .	. .	. .	. .	2 46.68	29.11	1.74	.	4	39.933	19 26.44	19.31	8.49	2 15.8	3 34.2
117	9	. .	. .	. .	. .	11.	. .	. .	2 54.25	29.11	1.69	.	3	36.372	23 20.44	19.31	9.04	2 23.4	7 28.8
118	7	. .	. .	. .	. .	. .	48.	. .	3 14.53	29.11	1.52	.	2	21.863	38 25.63	19.33	11.26	2 43.9	22 36.2
119	7	. .	45.2	2.	. .	. .	. .	. .	7 18.87	29.10	1.71	.	4	40.202	19 10.37	19.57	8.45	6 48.1	3 18.4
120	8	. .	. .	27.	44.	. .	. .	. .	7 43.83	29.10	1.60	.	3	31.816	28 6.00	19.59	9.73	7 13.1	12 15.3
121	10	. .	. .	. .	. .	. .	55.	. .	8 21.53	29.10	1.48	.	2	21.752	38 32.66	19.63	11.26	7 51.0	22 43.5
122	9	. .	. .	58.5	. .	. .	. .	. .	10 15.40	29.10	1.36	.	2	13.276	47 23.30	19.74	12.58	9 44.9	31 35.6
123	9	. .	. .	. .	. .	. .	58.	. .	10 24.54	29.10	1.46	.	3	22.538	37 48.25	19.75	11.15	9 54.0	23 21 59.2
124	6.7	. .	. .	51.	. .	24.5	. .	. .	13 7.84	29.10	1.72	.	4	44.978	14 11.11	19.90	7.73	12 37.0	22 58 18.7
125	9	. .	42.3	59.	. .	. .	. .	. .	15 15.95	29.09	1.76	.	5	50.312	8 37.30	20.01	6.92	14 45.1	22 52 44.2
126	8	. .	28.5	45.3	. .	. .	. .	. .	19 2.23	29.09	1.31	.	2	14.340	46 16.56	20.22	12.39	18 31.8	23 30 29.2
127	8	. .	. .	. .	25.	42.	. .	. .	19 24.99	29.09	1.31	.	2	14.472	46 8.79	20.24	12.37	18 54.6	23 30 19.4
128	6.7	. .	. .	31.	48.	. .	. .	. .	22 47.90	29.08	1.71	.	5	50.766	8 8.94	20.39	6.85	22 17.1	22 52 16.2
129	10	. .	. .	14.8	. .	. .	. .	. .	24 31.66	29.08	1.57	.	3	39.499	20 3.97	20.47	8.56	24 1.0	23 4 13.0
130	9	. .	. .	. .	. .	. .	8.3	. .	25 34.77	29.08	1.26	.	2	13.472	47 12.20	20.52	12.56	25 4.4	23 31 25.3
131	7.6	. .	. .	10.5	. .	. .	. .	. .	29 27.44	29.07	1.67	.	5	52.248	6 35.72	20.69	6.62	28 56.7	22 50 43.0
132	9	. .	. .	. .	6.8	. .	. .	. .	30 6.69	29.07	1.32	.	2	22.692	37 33.00	20.72	11.14	29 36.3	23 21 44.9
133	8	. .	. .	. .	. .	48.	4.8	. .	30 31.32	29.07	1.62	.	4	47.655	11 23.51	20.74	7.32	30 0.6	22 55 31.6
134	9	. .	. .	. .	25.8	. .	. .	. .	32 25.74	29.07	1.20	.	2	14.712	45 53.54	20.80	12.35	31 55.5	23 30 6.7
135	10	. .	. .	. .	. .	28.	. .	. .	35 11.05	29.06	1.20	.	2	16.598	43 55.76	20.90	12.06	34 40.8	28 8.7
136	10	. .	47.2	. .	21.	. .	. .	. .	13 38 20.94	−29.06	−1.21	.	2	17.670	−42 48.08	−21.01	−11.91	13 37 50.7	− 23 27 1.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ' "	r.

REMARKS.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ' "						"	in.	°	°	°	°	°

ZONE 251. APRIL 20. S. $D_0 = -24° 34′ 0″$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	8	. .	. .	16.	33.	. .	. .	. .	10 49 33.01	−27.99	−2.20	.	5	46.203	−12 51.13	− 0.25	− 7.41	10 49 2.8	− 24 46 58.8
2	9	. .	22.8	39.	. .	. .	. .	. .	51 56.60	28.00	2.24	.	2	16.163	44 22.09	0.46	12.23	51 26.4	25 18 34.8
3	10	. .	. .	4.	. .	. .	. .	. .	52 21.10	28.00	2.23	.	2	20.992	39 19.14	0.51	11.45	51 50.9	13 31.1
4	7	. .	. .	49.5	. .	. .	. .	. .	54 49.36	28.00	2.22	.	3	31.090	28 51.49	0.67	9.83	53 19.1	25 3 2.0
5	7	. .	. .	. .	. .	. .	32.8	. .	53 58.89	28.00	2.21	.	4	38.895	20 33.46	0.66	8.57	53 28.6	24 54 42.7
6	6	. .	. .	39.	. .	. .	. .	. .	55 56.05	28.01	2.22	.	3	29.300	30 43.92	0.84	10.11	55 25.8	25 4 54.9
7	5	. .	. .	. .	19.9	. .	. .	. .	56 19.78	28.01	2.20	.	5	47.090	11 59.78	0.87	7.27	55 49.6	24 46 7.9
8	7.6	. .	. .	. .	. .	12.5	. .	. .	10 56 55.53	28.01	2.21	.	4	42.300	16 59.71	0.93	8.04	56 25.3	24 51 8.7
9	10	. .	48.	. .	. .	. .	. .	. .	11 0 22.25	28.02	2.23	.	2	17.960	42 28.64	1.26	11.93	10 59 52.0	25 16 41.8
10	10	. .	. .	. .	. .	51.	. .	. .	0 33.94	28.02	2.22	.	3	28.128	31 57.58	1.28	10.30	11 0 3.7	6 9.2
11	7.8	. .	5.	23.	. .	. .	. .	. .	2 39.65	28.02	2.23	.	3	23.956	36 18.98	1.47	10.97	2 9.4	10 31.4
12	6	. .	5.6	. .	. .	. .	. .	. .	3 39.82	28.03	2.23	.	3	23.689	36 35.49	1.56	11.03	3 9.5	25 10 48.1
13	8	. .	. .	. .	7.	. .	. .	. .	4 6.87	28.03	2.22	.	4	35.590	24 0.29	1.60	9.10	3 36.6	24 58 11.0
14	7	. .	. .	. .	. .	45.2	. .	. .	4 28.13	28.03	2.22	.	3	27.692	32 24.87	1.63	10.37	3 57.9	25 6 36.9
15	6	. .	. .	. .	. .	. .	43.	. .	5 9.00	28.03	2.23	.	2	15.613	44 57.79	1.69	12.32	4 38.7	25 19 11.8
16	8	. .	. .	. .	. .	. .	33.	. .	5 59.10	28.03	2.22	.	3	35.478	24 16.41	1.77	9.12	5 28.9	24 58 27.3
17	6.7	. .	. .	30.	. .	. .	. .	. .	7 47.10	28.04	2.23	.	2	19.162	41 14.00	1.93	11.75	7 16.8	25 15 27.7
18	7	. .	. .	55.	. .	. .	. .	. .	10 12.13	28.04	2.23	.	2	15.992	44 32.76	2.15	12.26	9 41.9	18 47.2
19	9	. .	. .	54.5	. .	. .	. .	. .	11 11.59	28.04	2.23	.	3	21.818	38 33.04	2.23	11.32	10 41.3	12 46.6
20	8	. .	0.5	17.3	. .	. .	8.8	. .	13 34.67	28.05	2.24	.	2	14.820	45 46.71	2.44	12.45	13 4.4	25 20 1.6
21	10	. .	. .	. .	. .	2.	. .	. .	14 45.07	28.05	2.20	.	5	47.102	11 59.22	2.53	7.26	14 14.8	24 46 9.0
22	9	. .	. .	. .	. .	. .	54.8	. .	15 20.86	28.05	2.20	.	5	47.963	11 5.24	2.59	7.12	14 50.6	45 14.9
23	8	. .	. .	. .	. .	42.	. .	. .	16 25.07	28.05	2.20	.	5	48.250	10 47.29	2.68	7.08	15 54.8	24 44 57.0
24	10	. .	34.6	. .	. .	. .	. .	. .	18 8.89	28.06	2.23	.	2	11.532	49 11.98	2.83	12.99	17 38.6	25 23 27.8
25	7	. .	. .	37.3	. .	. .	. .	. .	18 54.39	28.06	2.22	.	3	22.286	38 3.93	2.89	11.24	18 24.1	25 12 18.1
26	9	. .	. .	. .	42.3	. .	. .	. .	19 25.80	28.06	2.20	o	4	37.870	21 37.09	2.96	8.74	18 55.54	24 55 48.8
27	5	. .	. .	. .	. .	39.5	. .	. .	20 22.47	28.06	2.21	.	3	31.932	27 58.78	3.02	9.69	19 52.2	25 2 11.5
28	9	. .	. .	. .	. .	. .	54.	. .	21 20.09	28.06	2.20	.	4	38.328	21 9.29	3.10	8.67	20 49.8	24 55 21.1
29	4	. .	. .	7.5	. .	. .	. .	. .	23 24.58	28.07	2.20	.	3	35.629	24 6.70	3.27	9.10	22 54.3	58 19.1
30	7	. .	. .	. .	. .	6.	. .	. .	23 49.02	28.07	2.20	.	4	40.063	19 19.98	3.31	8.39	23 18.7	24 53 31.7
31	6	. .	. .	. .	. .	. .	38.	. .	24 4.11	28.07	2.21	.	3	29.850	30 9.35	3.33	10.02	23 33.8	25 4 22 7
32	10	. .	. .	. .	. .	. .	9.5	. .	26 35.60	28.07	2.21	.	3	34.870	24 54.38	3.54	9.22	26 5.3	24 59 7.1
33	10	. .	. .	. .	. .	. .	37.	. .	28 3.06	28.08	2.19	.	4	48.360	10 39.69	3.66	7.07	27 32.8	44 50.4
34	9	. .	. .	. .	. .	35.	. .	. .	29 18.01	28.08	2.20	.	3	38.642	20 57.88	3.77	8.62	28 47.7	24 55 10.3
35	10	. .	. .	. .	. .	. .	33.	. .	29 58.99	28.08	2.23	.	2	14.089	46 33.37	3.83	12.57	29 28.7	25 20 49.8
36	8	. .	. .	. .	17.	. .	. .	. .	31 16.89	28.08	2.19	.	5	47.703	11 21.25	3.93	7.17	30 46.6	24 45 32.4
37	9	. .	. .	. .	. .	. .	53.	. .	31 19.07	28.08	2.19	.	5	46.182	12 57.15	3.95	7.41	30 48.8	24 47 8.5
38	8	. .	26.	. .	. .	. .	. .	. .	34 0.30	28.09	2.23	.	2	10.632	50 8.36	4.16	13.13	33 30.0	25 24 25.6
39	10	. .	. .	. .	. .	7.	. .	. .	33 49.84	28.09	2.22	.	3	20.623	39 48.38	4.14	11.51	33 19.5	25 14 4.0
40	10	. .	46.8	. .	. .	. .	. .	. .	36 20.96	28.09	2.19	.	5	49.898	9 2.54	4.35	6.81	35 50.7	24 43 13.7
41	9.8	. .	. .	. .	41.8	. .	. .	. .	36 41.68	28.09	2.20	.	4	43.580	15 38.89	4.39	7.83	36 11.4	24 49 51.1
42	9	. .	43.	. .	. .	. .	. .	. .	38 17.30	28.09	2.23	.	2	10.808	49 57.20	4.51	13.11	37 47.0	25 24 14.8
43	10	. .	. .	. .	. .	33.5	. .	. .	38 16.37	28.09	2.22	.	3	23.359	36 56.88	4.51	11.08	37 46.1	11 12.5
44	9	. .	28.	. .	. .	. .	. .	. .	40 2.21	28.09	2.20	.	3	25.348	34 51.54	4.65	10.75	39 31.9	9 6.9
45	6	. .	. .	. .	16.8	. .	. .	. .	40 16.67	28.10	2.20	.	3	26.730	33 25.15	4.67	10.52	39 46.4	7 40.3
46	8	. .	. .	. .	. .	55.5	. .	. .	40 38.41	28.10	2.20	.	3	25.959	34 13.52	4.72	10.65	40 8.1	8 28.9
47	.	. .	. .	. .	. .	48.8	. .	. .	41 31.76	28.10	2.20	.	.	F.wire	29 59.13	4.77	10.00	41 1.5	4 13.9
48	8	. .	. .	. .	. .	. .	22.5	. .	41 48.55	28.10	2.21	.	2	21.672	38 37.74	4.79	11.35	41 18.2	25 12 53.9
49	10	. .	31.8	. .	. .	. .	. .	. .	11 46 5.97	−28.10	−2.19	.	3	41.056	−18 25.82	− 5.13	− 8.23	11 45 35.7	− 24 52 39.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 251	April 20, 11 0	. . . .	. .	. .	. .	. .	. .	. . .	30.018	50.	43.8	50.	48.2	50.
	11 20	. .	. .	. .	. .	. .	. .	. . .	. . .	. .	43.9	. .	. .	. .
	11 45	83 54 60.	59.8	66.9	57.0	53.2	50.	57.82	. . .	. .	42.			
	12 0	. .	. .	. .	. .	. .	. .	. . .	30.028	49.	41.8			
	12 20	60.	60.	66.9	57.0	53.2	50.	57.85	. . .	. .	40.8			
	12 40	. .	. .	. .	. .	. .	. .	. . .	. .	. .	39.3			
	13 0	. .	. .	. .	. .	. .	. .	. . .	30.050	47.5	39.3	. .	43.5	47.5

REMARKS.

(251) 3. Right ascension 1^m different from Arg. Z. 288, 123.

(251) 4. Transit over T. IV assumed as recorded over T. III, and minutes as 53, not 54.

(251) 12. Right ascension differs 3^s from Arg. Z. 281, 115; 293, 7, and Mer. Cir. Z., April 11, 1849. Transit over T. II probably $8^s.6$.

(251) 26. Transit over T. V assumed as recorded over T. IV.

Ex. therm. assumed as 42.9.

ZONE 251. APRIL 20. S. $D_0 = -24° 34' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	° ′ ″.	″	″	h. m. s.	° ′ ″
50	8.7	..	..	..	44.6	..	..	..	11 46 44.47	−28.10	−2.20	.	3	33.970	−25 50.91	− 5.18	− 9.36	11 46 14.2	− 25 0 5.5
51	2	..	..	..	..	52.	9.	..	47 35.06	28.10	2.19	.	4	40.690	18 40.64	5.24	8.29	47 4.8	24 52 54.2
52	8	..	38.	55.	..	..	..	..	50 12.20	28.11	2.22	.	2	16.092	44 26.55	5.45	12.25	49 41.9	25 18 44.2
53	3.4	..	12.	29.	46.	..	..	..	51 46.03	28.11	2.20	.	3	29.918	30 0.69	5.57	10.01	51 15.7	25 4 16.3
54	10	..	..	..	..	..	30.	..	51 56.09	28.11	2.19	.	4	38.269	21 13.00	5.58	8.68	51 25.8	24 55 27.3
55	9	..	26.	..	..	..	..	..	57 0.18	28.12	2.19	.	3	35.943	23 46.61	5.95	9.05	56 29.9	58 1.6
56	8.7	..	..	34.	50.5	..	..	..	58 50.75	28.12	2.19	.	3	36.664	23 1.94	6.10	8.94	58 20.4	57 17.0
57	9	..	..	..	..	..	47.8	..	11 59 13.84	28.12	2.18	.	5	51.743	7 7.99	6.12	6.51	11 58 43.5	24 41 20.6
58	8	..	..	..	..	5.5	..	..	12 0 48.26	28.12	2.22	.	2	12.952	47 44.31	6.24	12.75	12 0 17.9	25 22 3.3
59	6	..	11.	28.	..	..	..	..	4 45.12	28.12	2.20	.	3	27.970	32 7.17	6.53	10.32	4 14.8	6 24.0
60	8.7	..	..	..	13.2	..	..	..	5 13.07	28.12	2.20	.	3	32.483	27 24.34	6.56	9.60	4 41.6	25 1 40.5
61	8	..	..	..	..	..	1.	..	5 27.10	28.12	2.20	.	3	34.849	24 55.69	6.57	9.23	4 56.3	24 59 11.5
62	8	..	..	45.5	..	..	..	..	7 2.62	28.12	2.21	.	2	17.328	43 9.16	6.68	12.06	6 32.3	25 17 27.9
63	9	..	..	..	..	42.	..	..	7 24.74	28.12	2.22	.	2	11.580	49 10.48	6.71	13.00	6 54.4	23 30.2
64	8	..	..	..	..	..	35.7	..	8 1.80	28.13	2.20	.	3	33.083	26 46.63	6.75	9.51	7 31.5	25 1 2.9
65	8	..	..	33.	..	..	..	..	9 50.08	28.13	2.20	.	4	34.663	24 57.89	6.89	9.25	9 19.5	24 59 14.0
66	8	..	..	..	..	..	19.8	..	9 45.87	28.13	2.20	.	3	25.968	34 12.89	6.88	10.64	9 15.5	25 8 30.4
67	9	..	..	..	39.	..	..	..	11 38.96	28.13	2.22	.	2	10.932	49 50.56	7.02	13.10	11 8.6	24 10.7
68	7.8	..	..	..	..	25.8	43.	..	12 8.83	28.13	2.21	.	3	18.599	41 55.33	7.05	11.84	11 38.5	16 14.2
69	7.8	..	8.6	..	..	0.	..	..	14 42.87	28.13	2.20	.	3	29.446	30 35.00	7.23	10.08	14 12.5	25 4 52.3
70	8	..	..	15.	32.	..	..	..	15 32.00	28.13	2.19	.	4	41.453	17 52.44	7.29	8.17	15 1.7	24 52 7.9
71	7.8	..	..	28.	..	..	..	..	16 45.08	28.13	2.21	.	3	23.679	36 36.43	7.37	11.01	16 14.7	25 10 54.8
72	7.8	..	..	..	..	..	33.8	..	16 59.85	28.13	2.18	.	5	49.832	9 7.86	7.39	6.84	16 29.5	24 43 22.1
73	5.6	..	..	..	..	..	30.	..	17 56.07	28.13	2.20	.	3	25.089	35 8.16	7.45	10.79	17 25.7	25 9 26.4
74	9.8	..	1.2	18.2	..	..	..	..	19 35.35	28.13	2.19	.	5	43.446	15 48.24	7.63	7.85	20 5.0	24 50 3.7
75	.	..	..	42.	..	..	..	..	24 59.14	28.13	2.18	.	5	45.028	14 8.77	7.93	7.61	24 28.8	48 24.3
76	10	..	36.8	..	11.	..	..	..	27 10.92	28.13	2.19	.	4	41.520	17 48.24	8.08	8.15	26 40.5	24 52 4.5
77	9	..	7.8	24.8	..	..	..	..	28 41.94	28.13	2.20	III.	3	24.720	35 31.06	8.19	10.84	28 11.6	25 9 50.1
78	9	..	15.5	32.3	..	..	..	..	29 49.55	28.13	2.21	III.	3	23.146	37 9.93	8.26	11.12	29 19.2	25 11 29.3
79	9	..	..	..	..	28.5	..	..	30 11.55	28.13	2.19	.	5	45.666	13 29.34	8.28	7.49	29 41.2	24 47 45.1
80	.	..	..	..	..	..	44.	..	31 10.03	28.13	2.16	.	.	.612	5 18.59	8.35	6.20	30 39.7	24 39 33.1
81	9	..	..	36.7	..	..	30.	..	33 53.76	28.13	2.20	.	3	32.178	27 43.48	8.51	9.65	33 23.4	25 2 1.6
82	9	..	..	..	..	41.5	..	..	35 24.54	28.13	2.19	.	4	42.732	16 32.42	8.61	7.96	34 54.2	24 50 49.0
83	9.10	..	9.8	..	44.	..	..	..	39 43.95	28.13	2.21	.	3	24.305	35 57.48	8.88	10.91	39 13.6	25 10 17.3
84	8	..	..	..	52.	..	..	..	40 51.86	28.13	2.19	.	3	29.830	30 10.61	8.95	10.03	40 21.5	4 29.6
85	8	..	..	..	35.2	..	..	..	41 35.06	28.13	2.19	.	3	31.610	28 19.05	9.00	9.75	41 4.7	2 37.8
86	8.7	..	..	23.	..	..	13.5	..	42 39.83	28.13	2.19	III.	3	32.908	26 57.29	9.06	9.54	42 9.5	1 15.9
87	8	..	..	..	1.	..	..	..	44 0.87	28.13	2.20	.	3	27.650	32 27.51	9.14	10.38	43 30.5	6 47.0
88	9.8	..	..	..	..	..	41.2	..	44 7.30	28.13	2.18	.	3	33.313	26 32.32	9.15	9.47	43 37.0	25 0 50.9
89	9	..	..	..	..	..	48.8	..	45 14.84	28.13	2.16	.	5	53.228	5 34.96	9.21	6.26	44 44.6	24 39 50.4
90	7.8	..	..	..	..	47.	4.	..	46 30.05	28.13	2.17	V.	3	37.718	21 55.79	9.28	8.77	45 59.7	56 13.8
91	10	..	..	..	..	..	52.	..	47 18.04	28.13	2.16	.	3	53.030	5 54.54	9.33	6.30	46 47.8	40 10.2
92	10	..	..	5.2	..	..	..	..	55 22.29	28.12	2.17	.	3	37.623	22 1.57	9.79	8.78	54 52.0	56 20.1
93	5.6	..	..	0.5	17.2	..	..	..	56 17.32	28.12	2.18	IV.	3	34.432	25 22.11	9.84	9.30	55 47.0	24 59 41.2
94	9	..	..	..	57.	..	..	..	57 56.90	28.12	2.19	.	2	21.816	38 27.89	9.92	11.34	57 26.6	25 12 49.1
95	8	..	..	..	..	..	8.	..	12 58 34.06	28.12	2.19	.	2	22.608	37 39.03	9.96	11.21	12 58 3.7	25 12 0.2
96	7.8	..	..	..	34.	..	..	..	13 2 33.89	28.12	2.16	.	4	49.110	9 51.80	10.17	6.91	13 2 3.6	24 44 8.9
97	7.8	..	..	..	..	..	28.5	..	13 2 54.60	−28.12	−2.18	.	3	29.070	−30 58.35	−10.19	−10.15	13 2 24.3	− 25 5 18.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

REMARKS.

(251) 74. Minutes assumed as 20, not 19.
(251) 80. Micrometer reading assumed as $53^r.612$.
(251) 81. Transits discordant; T. VI rejected.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

ZONE 252. MAY 2. S. $D_0 = -21° 24' 0''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	7.8	. .	37.	54.	. .	. .	. .	. .	14 49 10.56	−15.66	−2.15	.	4	50.422	− 8 29.02	− 0.63	− 0.04	14 48 52.7	− 21 32 29.7
2	7.8	. .	51.2	9.	. .	. .	. .	. .	50 25.12	15.66	2.29	.	3	36.098	23 37.26	0.65	2.11	50 7.2	21 47 40.0
3	7.8	. .	38.	55.	. .	28.5	. .	. .	52 11.62	15.66	2.49	.	2	9.955	50 51.88	0.67	5.95	51 53.5	22 14 58.5
4	9.8	. .	. .	. .	. .	27.	43.8	. .	53 10.56	15.66	2.31	.	5	45.140	14 2.43	0.68	0.80	52 52.6	21 38 3.9
5	10	. .	. .	. .	. .	. .	7.	. .	53 33.84	15.66	2.43	.	2	18.502	41 56.71	0.69	4.69	53 15.7	22 6 2.1
6	9	. .	. .	. .	. .	. .	5.5	. .	55 32.40	15.65	2.50	.	3	28.485	31 35.24	0.72	3.23	55 14.2	21 55 39.2
7	10	. .	. .	. .	. .	. .	11.	. .	56 37.86	15.65	2.42	.	5	45.260	13 55.14	0.73	0.78	56 29.8	37 56.7
8	7	. .	. .	. .	. .	1.2	. .	. .	57 44.60	15.65	2.52	.	3	34.782	24 59.97	0.75	2.31	57 26.4	21 49 3.0
9	9	. .	. .	11.	. .	. .	. .	. .	14 59 27.71	15.65	2.71	.	2	17.572	42 53.78	0.77	− 4.81	59 9.4	22 6 59.4
10	7	. .	. .	. .	3.	. .	. .	. .	15 0 2.89	15.64	2.50	.	5	51.899	6 57.81	0.78	+ 0.16	14 59 44.7	21 30 58.4
11	8	. .	. .	. .	. .	54.	. .	. .	0 37.46	15.64	2.55	.	4	45.018	14 9.02	0.79	− 0.82	15 0 19.3	21 38 10.6
12	8	. .	. .	. .	. .	56.5	. .	. .	1 39.71	15.64	2.77	.	2	16.048	44 30.19	0.80	− 5.05	1 21.3	22 8 36.0
13	.8	. .	. .	. .	46.	. .	. .	. .	2 45.89	15.64	2.59	.	5	52.678	6 8.97	0.81	+ 0.28	2 27.7	21 30 9.5
14	10	. .	. .	. .	. .	. .	19.	. .	3 45.89	15.63	2.71	.	3	36.144	23 34.62	0.82	− 2.10	3 27.6	47 37.5
15	10	. .	27.5	44.	. .	. .	. .	. .	5 0.75	15.63	2.79	.	3	29.736	30 16.37	0.83	3.04	4 42.3	54 20.3
16	11	. .	. .	. .	. .	43.	. .	. .	6 26.35	15.63	2.84	.	3	27.950	32 8.61	0.84	3.29	6 7.9	56 12.7
17	3	. .	. .	45.5	2.	. .	. .	. .	8 2.01	15.63	2.87	.	3	33.464	26 22.84	0.86	2.48	7 43.5	50 26.2
18	8	. .	31.	. .	. .	. .	. .	. .	12 4.36	15.62	2.96	.	4	40.715	18 37.44	0.89	1.44	11 45.8	42 39.8
19	9	. .	. .	. .	. .	12.5	. .	. .	11 55.87	15.62	3.02	.	3	30.408	29 34.65	0.89	2.94	11 37.2	53 38.5
20	9	. .	. .	. .	. .	1.5	. .	. .	12 44.95	15.61	2.96	.	4	43.091	16 9.95	0.90	1.11	12 26.4	40 12.0
21	10	. .	. .	. .	. .	. .	44.5	. .	13 11.39	15.61	3.02	.	3	35.842	23 53.39	0.90	2.15	12 52.8	21 47 56.4
22	9	. .	. .	. .	. .	. .	36.	. .	14 2.87	15.61	3.14	.	2	22.870	37 22.53	0.91	4.03	13 44.1	22 1 27.5
23	9	. .	. .	. .	30.5	. .	. .	. .	15 30.37	15.61	3.10	.	3	35.052	24 43.08	0.92	2.26	15 11.6	21 48 46.3
24	8	. .	. .	. .	. .	. .	20.3	. .	15 47.11	15.61	3.24	.	2	13.615	47 3.17	0.92	− 5.41	15 29.2	22 11 9.5
25	8	. .	. .	. .	. .	. .	8.5	. .	16 35.33	15.60	3.02	.	5	52.390	6 27.61	0.93	+ 0.23	16 16.7	21 30 28.3
26	7	. .	. .	. .	21.	. .	. .	. .	18 20.88	15.60	3.25	.	3	25.800	34 23.51	0.94	− 3.61	18 2.0	58 28.1
27	8	. .	. .	. .	. .	21.	. .	. .	20 4.45	15.60	3.20	.	4	43.270	15 58.84	0.95	1.08	19 45.6	40 0.9
28	10	. .	. .	. .	5.5	. .	. .	. .	22 5.37	15.59	3.31	.	3	36.220	23 29.85	0.96	2.09	21 46.5	47 32.9
29	7.8	. .	. .	. .	. .	. .	. .	54.	22 20.86	15.59	3.30	.	4	43.042	16 13.60	0.96	1.12	22 2.0	40 15.7
30	10.9	. .	14.	30.5	. .	. .	. .	. .	26 47.29	15.57	3.40	.	4	45.060	14 5.44	0.97	0.81	26 28.3	38 7.2
31	5	. .	32.5	49.2	6.	. .	. .	. .	29 5.89	15.57	3.48	.	4	46.100	13 0.73	0.98	0.67	28 46.8	37 2.4
32	7	. .	1.5	18.2	. .	. .	. .	. .	30 34.88	15.57	3.64	.	3	25.550	34 39.12	0.98	3.65	30 15.7	58 43.8
33	10	. .	. .	23.	. .	. .	. .	. .	31 39.64	15.56	3.65	.	3	29.190	30 50.76	0.98	3.12	31 20.4	54 54.9
34	11	. .	. .	. .	. .	. .	12.	. .	31 38.89	15.56	3.63	.	3	33.953	25 51.97	0.98	2.41	31 19.7	21 49 55.4
35	9	. .	2.8	19.5	. .	. .	. .	. .	35 36.26	15.55	3.91	.	2	11.462	49 17.06	0.99	5.72	35 16.8	22 13 23.8
36	10	. .	. .	. .	. .	9.	26.	. .	35 52.64	15.55	3.79	.	3	30.252	29 44.38	0.99	2.96	35 33.3	21 53 48.4
37	7.6	. .	. .	. .	. .	31.	. .	. .	37 14.13	15.55	3.98	.	2	8.324	52 34.73	0.99	6.06	36 54.6	22 16 41.8
38	10	. .	. .	38.	. .	. .	. .	. .	39 54.71	15.54	3.87	.	4	41.422	17 53.89	0.99	1.33	39 35.3	21 41 56.2
39	9	. .	. .	. .	40.	. .	. .	. .	40 39.87	15.54	3.92	.	3	33.710	26 7.82	0.99	2.46	40 20.4	21 50 10.7
40	7	. .	. .	. .	36.	. .	. .	. .	42 35.94	15.53	3.10	.	2	14.733	45 52.24	0.98	5.25	42 17.3	22 9 58.5
41	9	. .	. .	. .	. .	12.3	29.	. .	42 55.68	15.53	3.12	.	2	16.613	43 54.82	0.97	− 4.97	42 37.0	22 8 0.8
42	8	. .	20.8	37.3	. .	. .	. .	. .	44 54.12	15.52	3.96	.	5	51.785	7 4.58	0.96	+ 0.14	44 34.6	21 31 5.4
43	11	. .	. .	. .	. .	59.5	. .	. .	45 42.87	15.52	4.10	.	3	29.724	30 17.38	0.96	− 3.04	45 23.3	54 21.4
44	8	. .	38.2	55.	. .	. .	. .	. .	47 11.66	15.52	4.05	.	4	47.955	11 3.68	0.95	0.39	46 52.1	35 5.0
45	8	. .	. .	. .	. .	. .	54.5	. .	48 21.39	15.51	4.16	.	3	37.102	22 34.45	0.95	2.96	48 1.7	21 46 38.4
46	9	. .	. .	. .	. .	. .	2.3	. .	49 29.15	15.51	4.34	.	2	18.073	42 23.56	0.94	4.75	49 9.3	22 6 29.2
47	10	. .	. .	5.	. .	. .	. .	. .	51 21.72	15.50	4.40	.	2	16.475	44 2.66	0.93	4.99	51 1.8	8 8.6
48	2	. .	. .	. .	48.	5.	. .	. .	51 48.06	15.50	4.41	.	2	13.390	47 16.65	0.92	5.45	51 28.2	22 11 23.0
49	9	. .	. .	. .	. .	54.3	. .	. .	15 52 37.73	−15.50	−4.27	.	4	39.048	−20 23.68	− 0.91	− 1.67	15 52 18.0	− 21 44 26.3

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.		B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′	″						″	in.	°	°	°	°	°
Zone 252	May 2,	14 40	80 44	59.3 / 59.8	60.5 / 60.5	63.0 / 64.3	58.8 / 59.	47.2 / 47.2	53.2 / 53.2	57.17	30.438	. .	50.9			
		15 0	. .		. .	. .	. .	. .	. .	. .	30.436	56.2	50.4			
		15 10	. .		. .	. .	. .	. .	. .	. .	. .	. .	. .	52.5	63.	56.5
		15 20	. .		. .	. .	. .	. .	. .	. .	. .	. .	50.			
		15 40	. .		. .	. .	. .	. .	. .	. .	. .	. .	49.3			
		16 0	. .		. .	. .	. .	. .	. .	. .	30.420	55.2	49.2			

REMARKS.

(252) 11. Right ascension differs 10^s from Arg. Z. 295, 138.

(252) 29. Transit over T. VI assumed as recorded over T. VII.

(252) 46. Transit over T. VI assumed as $2^s.3$, not 23^s.

ZONE 252. MAY 2. S. $D_0 = -21° 24' 0''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	7	. .	. .	. .	. .	42.	. .	. .	15 53 25.49	−15.50	−4.24	.	5	49.772	− 9 11.57	− 0.91	− 0.14	15 53 5.7	− 21 33 12.6
51	8	. .	. .	19.2	36.	. .	. .	. .	55 35.93	15.49	4.31	.	5	52.850	5 58.11	0.88	+ 0.27	55 16.1	21 29 58.7
52	10	. .	52.	9.	. .	. .	. .	. .	57 25.58	15.48	4.60	.	2	13.580	47 4.17	0.87	− 5.41	57 5.5	22 11 10.5
53	10	. .	. .	. .	5.	. .	. .	. .	58 4.88	15.48	4.45	.	4	38.912	20 31.70	0.86	1.68	57 45.0	21 44 34.2
54	.	. .	. .	. .	. .	3.	19.5	. .	58 46.41	15.48	4.44	.	4	44.202	15 0.35	0.85	0.92	58 26.5	21 39 2.1
55	9	. .	. .	. .	. .	13.	. .	. .	15 59 56.31	15.48	4.62	.	2	24.130	36 3.30	0.84	3.88	15 59 36.2	22 0 8.0
56	7	. .	. .	8.5	. .	. .	. .	. .	16 1 25.18	15.47	4.67	.	2	23.783	36 24.00	0.82	3.92	16 1 5.0	22 0 28.7
57	6	. .	. .	. .	. .	4.8	. .	. .	1 48.22	15.47	4.56	.	3	38.242	21 23.03	0.82	1.77	1 28.2	21 45 25.6
58	8	. .	. .	. .	. .	. .	51.	. .	2 17.89	15.47	4.64	.	3	35.780	23 57.33	0.81	2.14	1 57.8	21 48 0.3
59	8	. .	. .	. .	. .	. .	52.	. .	3 18.82	15.46	4.79	.	2	15.620	44 57.41	0.79	5.13	2 58.6	22 9 3.3
60	9	. .	. .	. .	. .	54.8	. .	. .	4 38.05	15.46	4.80	.	2	18.850	41 34.38	0.77	4.68	4 17.8	22 5 39.8
61	7	. .	. .	. .	48.	. .	. .	. .	5 47.88	15.45	4.70	.	3	38.655	20 57.00	0.75	1.71	5 27.7	21 44 59.7
62	6.7	. .	. .	. .	. .	36.5	53.	. .	16 6 19.85	−15.45	−4.82	.	3	24.628	−35 37.15	− 0.74	− 3.79	16 5 59.6	− 21 59 41.7

ZONE 253. MAY 11. S. $D_0 = -24° 59' 0''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	48.	5.	. .	. .	. .	14 15 4.99	−16.63	−0.42	IV.	5	49.653	− 9 18.86	− 3.89	− 2.96	14 14 47.94	− 25 8 25.7
2	8	. .	. .	. .	54.	. .	. .	. .	15 53.86	16.63	0.44	.	3	31.202	28 44.71	3.92	5.81	15 36.79	27 54.4
3	10	. .	2.	. .	. .	. .	. .	. .	17 36.28	16.63	0.45	.	2	18.652	41 45.36	3.98	7.77	17 19.20	40 57.1
4	11	. .	. .	. .	. .	49.	. .	. .	18 31.88	16.63	0.48	.	2	15.599	44 58.43	4.02	8.25	18 14.77	44 10.7
5	7	. .	. .	11.	28.	. .	. .	. .	21 11.00	16.62	0.43	IV.	3	38.479	21 8.10	4.13	4.70	20 53.95	20 16.9
6	10	. .	. .	. .	. .	33.5	. .	. .	22 16.33	16.62	0.49	.	2	11.312	49 27.35	4.15	8.94	21 59.22	48 40.4
7	9	. .	57.	14.	. .	. .	. .	. .	26 30.98	16.62	0.51	III.	3	30.365	29 37.10	4.30	5.94	26 13.85	28 47.3
8	8	. .	. .	. .	. .	49.5	. .	. .	26 32.58	16.62	0.50	.	3	35.372	24 23.19	4.30	5.16	26 15.46	23 32.6
9	10	. .	. .	. .	. .	. .	47.5	. .	27 13.75	16.62	0.51	.	4	39.653	19 46.03	4.32	4.50	26 56.62	18 54.8
10	8	. .	. .	. .	42.5	. .	. .	. .	28 42.39	16.62	0.50	.	5	49.770	9 11.45	4.37	2.93	28 25.27	8 18.7
11	5	. .	26.	. .	. .	. .	. .	. .	31 0.05	16.62	0.54	.	3	23.242	37 3.65	4.48	7.06	31 42.89	36 15.2
12	9	. .	. .	. .	. .	22.5	. .	. .	32 5.48	16.62	0.54	.	3	23.632	36 39.63	4.49	6.99	31 48.32	35 51.1
13	6	. .	. .	. .	. .	. .	5.	. .	32 31.16	16.62	0.56	.	2	13.052	47 38.42	4.51	8.66	32 13.98	46 51.6
14	9	. .	. .	. .	. .	21.	. .	. .	34 4.18	16.61	0.52	.	5	52.345	6 30.25	4.55	2.54	33 47.05	5 37.3
15	7	. .	. .	. .	24.5	. .	. .	. .	35 24.37	16.61	0.54	.	3	36.668	23 1.69	4.59	4.97	35 7.22	22 11.3
16	8	. .	. .	. .	. .	14.6	. .	. .	35 57.73	16.61	0.54	.	4	43.354	15 53.57	4.61	3.94	35 40.58	15 2.1
17	6.7	. .	. .	. .	. .	54.6	. .	. .	36 37.75	16.61	0.56	.	4	46.902	12 10.71	4.63	3.39	36 20.58	11 18.7
18	3	. .	43.2	. .	17.5	. .	. .	. .	39 17.28	16.61	0.60	.	3	31.906	28 0.35	4.72	5.70	39 0.07	27 10.8
19	10	. .	. .	. .	. .	20.	. .	. .	43 3.06	16.60	0.63	.	3	32.004	27 54.33	4.83	5.68	42 45.83	27 4.8
20	10	. .	. .	. .	20.	. .	. .	. .	44 19.87	16.60	0.63	.	3	33.913	25 54.42	4.87	5.37	44 2.64	25 4.7
21	11	. .	. .	. .	. .	. .	10.5	. .	44 36.73	16.60	0.61	.	5	47.397	11 40.90	4.88	3.31	44 19.52	10 49.1
22	11	. .	. .	. .	. .	. .	8.	. .	46 34.21	16.60	0.64	.	2	20.340	40 1.42	4.94	7.52	46 16.97	39 13.9
23	5	. .	. .	10.5	27.2	. .	. .	. .	48 27.32	16.59	0.66	III.	2	19.248	41 8.67	4.98	7.69	48 10.07	40 21.3
24	9.8	. .	. .	4.5	. .	. .	55.2	. .	51 21.50	16.59	0.65	.	5	47.710	11 20.81	5.06	3.26	51 4.26	10 29.1
25	7	. .	41.	58.	. .	. .	48.5	. .	53 14.93	16.59	0.68	III.	3	23.602	36 41.32	5.11	7.00	52 57.66	35 53.4
26	10	. .	. .	34.	. .	. .	. .	. .	54 51.06	16 59	0.67	.	5	46.439	12 40.40	5.13	3.45	54 33.80	11 49.0
27	5.4	. .	. .	59.2	. .	. .	. .	. .	57 16.26	16.58	0.69	.	5	46.260	12 51.63	5.18	3.47	56 58.99	12 0.3
28	9	. .	. .	37.	. .	. .	. .	. .	57 53.96	16.58	0.72	.	3	30.770	29 11.50	5.20	5.88	57 36.66	28 22.6
29	7	. .	. .	. .	. .	. .	22.5	. .	57 48.77	16.58	0.72	.	3	28.132	31 57.27	5.20	6.29	57 31.47	31 8.8
30	9	. .	. .	. .	. .	. .	39.5	. .	14 59 5.78	16.58	0.73	.	3	32.229	27 40.28	5.23	5.62	14 58 48.47	26 51.1
31	8	. .	36.	. .	. .	. .	. .	. .	15 1 10.03	16.58	0.73	.	3	27.069	33 3.45	5.27	6.46	15 0 52.72	32 15.2
32	5	. .	. .	. .	44.2	. .	. .	. .	15 1 44.14	−16.58	−0.75	.	2	14.479	−46 8.35	− 5.28	− 8.45	15 1 26.81	− 25 45 22.1

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 253	May 11, 14 20	83 19 {59.2 / 59.2	59.2 / 59.8	62.2 / 62.7	60.2 / 61.2	45.6 / 45.9	52.2 / 52.2}	56.63	29.858	55.2	49.2	56.9	62.	53.8
	14 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	48.3			
	15 0	. .	. .	. .	. .	. .	. .	. .	29.858	54.5	47.5			
	15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	47.2			
	15 40	. .	. .	. .	. .	. .	. .	. .	29.870	53.5	47.1			

REMARKS.

(252) 51. Declination differs from Arg. Z. 209, 92; 213, 1; micrometer reading perhaps $52^r.650$.

(253) 5. Transits over T.'s IV and V assumed as recorded over T.'s III and IV.

(253) 11. Minutes assumed as 32, not 31.

ZONE 253. MAY 11. S. $D_0 = -24° 59' 0''$—Continued.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	8	. .	. .	. .	. .	25.8	. .	. .	15 2 8.88	−16.58	−0.72	.	3	35.590	−24 9.39	− 5.28	− 5.11	15 1 51.58	− 25 23 19.8
34	6	. .	36.8	. .	. .	. .	. .	. .	4 10.79	16.57	0.73	.	5	51.178	7 42.38	5.31	2.70	3 53.49	6 50.4
35	8	. .	. .	. .	47.2	. .	. .	. .	4 47.08	16.57	0.75	.	3	25.672	34 31.53	5.33	6.69	4 29.76	33 43.5
36	5	. .	. .	. .	. .	35.	. .	. .	5 18.02	16.57	0.76	.	3	27.020	38 20.72	5.33	7.24	5 0.69	37 33.3
37	7	. .	. .	. .	. .	21.5	. .	. .	9 4.42	16.56	0.80	.	2	18.428	42. 1.04	5.38	7.83	8 47.06	41 14.3
38	9	. .	. .	. .	45.	. .	. .	. .	10 44.88	16.56	0.81	.	3	26.252	33 55.26	5.42	6.59	10 27.51	33 7.3
39	9	. .	. .	. .	. .	. .	29.5	. .	10 55.74	16.56	0.83	.	3	23.572	36 43.39	5.42	7.01	10 38.35	35 55.8
40	6	. .	. .	. .	. .	22.	. .	. .	12 5.07	16.56	0.81	.	3	32.918	26 56.91	5.43	5.53	11 47.70	26 7.9
41	8	. .	. .	46.	. .	. .	. .	. .	14 3.02	16.55	0.82	.	4	41.092	18 14.46	5.45	4.27	13 45.65	17 24.2
42	9	. .	. .	. .	35.	. .	. .	. .	14 34.86	16.55	0.83	.	3	30.610	29 21.80	5.46	5.90	14 17.48	28 33.2
43	8.7	. .	. .	37.5	. .	. .	28.8	. .	15 54.76	16.55	0.84	III.	2	19.392	40 59.69	5.48	7.67	15 37.37	40 12.8
44	9	. .	54.5	. .	28.8	. .	. .	. .	17 28.60	16.55	0.82	.	5	53.015	5 47.83	5.49	2.42	17 11.23	4 55.7
45	9	. .	. .	6.5	. .	. .	. .	. .	19 23.54	16.54	0.87	.	2	17.233	43 15.06	5.51	8.00	19 6.13	42 28.6
46	6.7	. .	. .	11.5	28.5	. .	2.5	. .	24 28.55	16.53	0.90	IV.	4	41.376	17 57.27	5.55	4.23	24 11.12	17 7.0
47	7.8	. .	2.5	19.5	. .	52.5	. .	. .	25 36.23	16.53	0.92	III.	4	44.788	14 22.37	5.56	3.70	26 18.78	13 31.6
48	8.9	. .	. .	. .	. .	. .	32.	. .	26 58.15	16.53	0.94	.	2	12.222	48 30.52	5.57	8.83	26 40.68	47 44.9
49	9	. .	. .	. .	. .	39.	. .	. .	28 22.09	16.53	0.91	.	4	37.112	22 25.22	5.58	4.87	28 4.65	21 35.7
50	5	. .	. .	. .	. .	. .	20.5	. .	28 46.65	16.52	0.94	.	2	13.208	47 28.69	5.58	8.67	28 29.19	46 42.9
51	8	. .	. .	40.5	. .	14.	. .	. .	31 57.39	16.52	0.91	V.	5	52.069	6 47.46	5.60	2.56	31 39.96	5 55.6
52	9	. .	. .	. .	6.8	23.5	. .	. .	33 6.57	16.51	0.94	IV.	2	19.908	40 27.58	3.60	7.60	32 49.12	39 40.8
53	10.9	. .	. .	25.	. .	. .	. .	. .	36 42.06	16.50	0.98	.	2	11.770	50 0.24	5.61	9.00	36 24.58	49 14.8
54	8	. .	. .	47.	. .	. .	. .	. .	38 3.96	16.50	0.98	.	3	29.286	30 44.79	5.61	6.11	37 46.48	29 56.5
55	8	. .	. .	. .	19.	. .	. .	. .	38 18.86	16.50	0.98	.	3	31.153	28 47.79	5.61	5.82	38 1.38	27 59.2
56	6	. .	. .	. .	. .	57.5	. .	. .	38 40.58	16.50	0.98	.	3	35.278	24 29.09	5.62	5.17	38 23.10	23 39.9
57	5	. .	. .	. .	. .	29.	46.2	. .	39 12.25	16.50	0.99	V.	3	28.329	31 45.09	5.62	6.26	38 54.76	30 57.0
58	6	. .	16.	. .	. .	. .	. .	. .	41 50.13	16.49	1.01	.	2	10.275	50 30.82	5.62	9.15	41 32.63	49 45.6
59	4	. .	. .	. .	15.	. .	. .	. .	42 14.88	16.49	0.98	.	5	41.189	18 10.13	5.62	4.24	41 57.41	17 20.0
60	8	. .	. .	. .	17.5	. .	. .	. .	43 17.41	16.49	0.99	.	3	19.770	40 41.70	5.62	7.62	42 59.93	39 54.9
61	10.9	. .	. .	. .	4.	. .	. .	. .	44 3.89	16.48	1.03	.	3	22.802	37 31.51	5.62	7.12	43 46.38	36 44.2
62	8	. .	21.	. .	. .	. .	. .	. .	45 55.04	16.48	1.03	.	3	25.775	34 24.56	5.63	6.67	45 37.53	33 36.9
63	7	. .	. .	10.8	. .	. .	. .	. .	46 27.81	16.48	1.04	.	4	38.670	20 46.15	5.63	4.66	46 10.29	19 56.7
64	6	. .	. .	3.2	. .	. .	. .	. .	47 20.16	16.47	1.04	.	3	29.860	30 8.53	5.63	6.02	47 2.65	29 20.2
65	8	. .	. .	. .	. .	45.	. .	. .	47 28.09	16.47	1.03	.	4	37.160	22 22.21	5.63	4.87	47 10.59	21 32.7
66	2	. .	30.	47.2	64.5	. .	. .	. .	15 49 4.23	−16.47	−1.05	IV.	2	19.102	−41 18.27	− 5.63	− 7.72	15 48 46.71	− 25 40 31.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(253) 36. Micrometer reading assumed as $22^r.020$, not $27^r.020$.

(253) 47. Minutes assumed as 26, not 25.

(253) 53. Micrometer reading assumed as $10^r.770$, not $11^r.770$.

ZONE 254. JUNE 16. C. $D_0 = -19° 33' 40''$.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	57.2	13.2	. .	. .	. .	15 32 56.96	+ 4.99	+0.74	IV.	5	53.307	− 5 38.78	− 1.83	− 2.04	15 33 27.9	− 19 39 22.7
2	9	33.2	49.6	26.2	22.6	38.5	. .	. .	6.02	4.	. .	IV.	4	47.265	11 58.15	1.8	3.08	. . .	45 43.1
3	8	1.6	17.6	33.7	50.5	6.5	. .	. .	38 33.98	4.98	0.75	IV.	3	33.976	25 50.53	1.86	5.32	38 39.7	59 37.7
4	9	. .	. .	35.2	51.8	. .	. .	. .	39 35.28	4.98	0.75	IV.	3	37.782	21 51.72	1.88	4.68	39 41.0	55 38.3
5	8	. .	. .	7.2	23.9	. .	. .	. .	40 7.33	4.98	0.75	IV.	3	33.631	26 12.31	1.88	5.43	40 13.1	59 59.6
6	8	. .	. .	. .	51.5	8.3	. .	. .	40 35.40	4.98	0.74	IV.	4	43.943	15 26.35	1.88	3.63	40 41.1	49 11.9
7	9.10	. .	. .	. .	. .	20.2	. .	. .	41 47.62	4.98	0.74	V.	3	33.545	26 11.43	1.90	5.40	41 53.3	19 59 58.7
8	9	. .	. .	. .	. .	14.2	. .	. .	41 41.53	4.98	0.78	V.	1	11.509	49 19.20	1.90	9.17	41 47.3	20 23 10.3
9	8	. .	. .	. .	57.4	14.3	. .	. .	42 41.27	4.98	0.75	IV.	3	26.234	33 56.46	1.91	6.64	42 47.0	20 7 45.0
10	5	0.2	16.5	32.8	49.2	5.2	. .	. .	44 32.78	4.97	0.70	IV.	5	50.045	9 3.35	1.93	2.60	44 38.4	19 42 47.9
11	9	. .	. .	. .	. .	37.1	. .	. .	45 4.54	4.97	0.71	V.	4	41.438	18 4.42	1.93	4.06	45 10.2	19 51 50.4
12	9.10	. .	. .	. .	15.2	. .	. .	. .	46 58.61	4.97	0.75	IV.	1	12.424	48 22.93	1.95	9.01	47 4.3	20 22 13.9
13	9.10	. .	. .	. .	30.2	. .	. .	. .	46 13.62	4.97	0.76	IV.	1	13.899	46 50.19	1.95	8.75	46 19.3	20 40.9
14	8.9	. .	15.2	32.2	48.5	4.5	. .	. .	47 31.90	4.97	0.74	IV.	2	14.662	46 2.58	1.96	8.62	47 37.6	19 53.2
15	9	. .	. .	. .	. .	20.?	. .	. .	48	4.97	0.70	V.	4	33.321	26 33.76	. .	5.43	48	0 21.2
16	7.8	. .	23.3	39.2	55.4	12.5	. .	. .	49 39.40	4.97	0.73	IV.	1	7.495	53 31.98	1.98	9.87	49 45.1	27 23.8
17	10	. .	58.	. .	30.8	47.	. .	. .	53 14.29	4.97	0.71	IV.	2	14.701	46 0.14	2.00	8.61	53 20.0	20 19 50.7
18	9	. .	45.8	2.3	. .	. .	. .	. .	56 2.23	4.96	0.66	III.	5	40.077	19 28.89	2.02	4.29	56 7.8	19 53 15.2
19	8	. .	. .	46.5	3.5	19.7	. .	. .	57 46.89	4.96	0.67	IV.	3	32.438	27 27.22	2.04	5.59	57 52.5	20 1 14.8
20	3	. .	40.8	56.2	13.2	29.8	. .	. .	58 56.81	4.96	0.68	IV.	2	18.884	41 37.71	2.04	7.89	58 2.4	15 27.6
21	6	. .	. .	. .	47.5	4.3	. .	. .	58 31.26	4.96	0.70	IV.	1	7.398	53 38.13	2.04	9.88	58 36.9	27 30.0
22	9	. .	. .	43.2	59.4	. .	. .	. .	15 59 43.08	4.96	0.69	IV.	2	13.454	47 18.47	2.05	8.82	15 59 48.7	21 9.3
23	9	. .	26.3	43.2	59.6	16.1	. .	. .	16 0 43.11	4.96	0.68	IV.	3	20.468	38 55.42	2.05	7.62	16 0 48.7	12 45.1
24	9	. .	. .	. .	. .	39.2	. .	. .	2 6.61	4.96	0.65	V.	3	33.548	26 17.51	2.06	5.40	2 12.2	20 0 5.0
25	9.10	15.5	31.5	58.5	4.6	. .	. .	. .	6 48.16	4.96	0.61	IV.	4	42.378	17 4.86	2.08	3.90	6 53.7	19 50 50.8
26	9	. .	42.3	59.5	15.3	32.3	. .	. .	7 59.20	4.95	0.59	IV.	5	51.205	7 50.67	2.09	2.41	8 4.7	41 35.2
27	7	. .	. .	8.2	24.6	40.9	. .	. .	8 8.23	4.95	0.58	IV.	5	49.346	9 47.32	2.09	2.73	8 13.8	43 32.1
28	7	43.5	59.7	15.8	32.4	48.4	. .	. .	10 15.96	4.95	0.59	IV.	4	42.435	17 1.28	2.10	3.89	10 21.5	19 50 47.3
29	9	. .	. .	1.7	18.	34.5	. .	. .	11 1.70	4.95	0.62	IV.	1	9.937	50 58.66	2.10	9.43	11 7.3	20 24 50.2
30	9	. .	. .	. .	. .	11.2	. .	. .	11 38.65	4.95	0.58	V.	5	42.952	11 14.76	2.10	2.95	11 44.2	19 44 59.8
31	9.10	. .	. .	. .	. .	12.0	. .	. .	11 39.45	4.95	0.58	VI.	5	43.170	11 2.22	2.10	2.93	11 45.0	44 47.2
32	6	42.2	58.3	14.8	30.9	47.2	. .	. .	15 14.68	4.95	0.58	IV	5	51.893	7 7.30	2.11	2.29	15 20.2	19 40 51.7
33	9	. .	14.3	. .	46.5	3.4	. .	. .	23 30.41	4.95	0.59	IV.	1	9.286	51 39.73	2.12	9.55	23 35.9	20 25 31.4
34	10	. .	25.2	42.5	59.2	. .	. .	. .	27 42.26	4.95	0.54	IV.	4	37.066	22 38.09	2.11	4.80	26 47.8	19 56 25.0
35	10	. .	. .	. .	. .	29.2	. .	. .	28 56.54	4.94	0.58	V.	2	15.209	45 28.53	2.11	8.54	29 2.1	20 19 19.2
36	6.7	. .	22.8	39.	55.7	11.7	. .	. .	31 39.11	4.94	0.53	IV.	3	27.318	32 48.45	2.11	6.46	31 44.6	20 6 37.0
37	7	. .	43.2	59.2	16.	32.6	. .	. .	33 59.61	4.94	0.49	IV.	5	54.763	4 7.19	2.10	1.80	33 5.0	19 37 51.1
38	9.10	. .	. .	. .	. .	54.2	. .	. .	33 21.66	4.94	0.49	V.	4	46.928	12 19.68	2.10	3.12	33 27.1	19 46 4.9
39	9	. .	. .	. .	. .	13.4	. .	. .	34 40.72	4.94	0.55	V.	1	10.308	50 35.71	2.10	9.38	34 46.2	20 24 27.2
40	8	29.4	45.3	1.8	18.2	34.7	. .	. .	38 1.87	4.94	0.49	IV.	4	43.942	15 26.52	2.09	3.62	38 7.3	19 49 12.2
41	9.10	19.9	36.	52.5	. .	. .	. .	. .	40 52.46	4.94	0.48	III.	4	45.439	13 51.81	2.08	3.37	39 57.9	19 47 37.3
42	9.10	. .	. .	. .	21.4	. .	. .	. .	40 4.85	4.94	0.52	IV.	2	23.029	37 17.77	2.08	7.20	40 10.3	20 11 7.0
43	9	. .	. .	10.3	27.	. .	. .	. .	42 10.43	4.94	0.52	IV.	1	12.818	47 57.99	2.07	8.96	42 15.9	20 21 49.0
44	10	. .	44.2	0.3	. .	. .	. .	. .	44 0.43	4.94	0.47	II.	4	37.859	21 47.50	2.06	4.67	44 5.8	19 55 34.2
45	6	. .	12.2	28.8	45.3	1.5	. .	. .	44 28.76	4.94	0.49	IV.	3	24.526	35 43.61	2.06	6.93	44 34.2	20 9 32.6
46	9.10	11.5	27.8	44.2	. .	. .	. .	. .	47 44.17	4.94	0.45	III.	4	41.944	17 31.28	2.04	3.96	47 49.6	19 51 17.3
47	10	17.5	34.1	50.5	. .	. .	. .	. .	50 50.38	4.94	0.44	III.	4	39.458	20 7.48	2.02	4.38	50 55.7	19 53 53.9
48	10	3.8	36.2	. .	. .	. .	. .	. .	52 36.47	4.94	0.52	II.	2	13.499	47 15.20	2.00	8.85	52 41.9	20 21 6.0
49	7.8	44.7	0.2	17.2	. .	49.8	. .	. .	16 53 17.12	+ 4.94	+0.47	IV.	3	21.711	−38 40.06	− 1.99	− 7.42	16 53 22.5	− 20 12 29.5

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point,	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 254	June 16, 15 30	78 54 61.	59.5	64.8	56.5	63.3	55.1	60.03	30.122	. .	66.7	73.	70.8	72.
	15 50	. .	. .	. .	. .	. .	. .	. .	30.122	74.3	66.1			
	16 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.9			
	16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.4			
	16 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	65.1			
	17 0	. .	. .	. .	. .	. .	. .	. .	30.130	72.	64.7			
	17 10	61.4	60.4	65.6	58.7	63.2	54.6	60.65	30.136	. .	65.	. .	69.2	70.4

REMARKS.

(254) 12. Right ascension differs 1^m from Arg. Z. 208, 99.

(254) 20. Minutes of transit assumed as 57, not 58.

(254) 23. Micrometer reading assumed as $21^r.468$ instead of $20^r.468$.

(254) 25. Transit over T. III assumed as at $48^s.5$ instead of $58^s.5$.

(254) 26. Right ascension differs 1^m from Arg. Z. 211, 16; 305, 12; minutes probably 6.

(254) 30. Micrometer reading assumed as $47^r.952$, not $42^r.952$.

(254) 31. Micrometer reading assumed as $48^r.170$, not $43^r.170$.

(254) 34. Minutes assumed as 26, not 27.

(254) 37. Minutes of transit assumed as 32, not 33.

(254) 41. Minutes assumed as 39, not 40.

(254) 48. Assumed transit over T. III at $36^s.2$.

ZONE 254. JUNE 16. C. $D_0 = -19° 33' 40''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
50	8.9	. .	. .	. .	20.2	36.2	. .	. .	16 53 3.57	+ 4.94	+0.46	IV.	1	12.456	−48 20.93	− 1.99	− 9.03	16 53 9.0	− 20 22 11.9
51	9.10	16.2	32.8	. .	. .	. .	. .	. .	55 49.02	4.95	0.45	II.	3	23.907	36 22.05	1.97	7.05	54 54.4	10 11.1
52	9	. .	. .	59.1	16.2	. .	. .	. .	55 59.43	4.95	0.45	IV.	3	18.995	41 30.42	1.96	7.89	55 4.8	15 20.3
53	7.8	. .	33.8	50.2	. .	19.8	. .	. .	56 47.16	4.95	0.44	IV.	2	17.719	42 50.77	1.95	8.12	55 52.6	20 16 40.8
54	9.10	27.3	43.8	59.8	. .	. .	. .	. .	58 59.96	4.95	0.38	III.	5	48.623	10 32.68	1.93	2.82	58 5.3	19 44 17.4
55	8.9	2.5	. .	34.8	51.3	7.4	. .	. .	16 59 34.93	4.95	0.41	IV.	3	32.765	27 6.51	1.92	5.54	16 59 40.3	20 0 54.0
56	8.9	. .	. .	5.2	21.5	. .	. .	. .	17 2 5.14	4.95	0.43	IV.	1	7.528	53 29.92	1.89	9.90	17 2 10.5	27 21.7
57	8.9	. .	. .	. .	40.	56.5	. .	. .	2 23.65	4.95	0.42	IV.	3	20.364	40 4.76	1.89	7.66	2 29.0	20 13 54.3
58	9.10	24.5	40.7	57.2	13.3	29.6	. .	. .	6 57.06	4.95	0.35	IV.	5	51.767	7 15.20	1.83	2.29	7 2.4	19 40 59.3
59	10	15.3	31.8	. .	. .	. .	. .	. .	10 48.08	4.96	0.38	II.	2	22.342	38 0.61	1.80	7.32	9 53.4	20 11 49.7
60	9.10	. .	. .	52.3	. .	25.5	. .	. .	10 52.64	4.96	0.38	IV.	2	14.530	46 10.98	1.80	8.66	9 58.0	20 1.4
61	10	. .	. .	. .	. .	35.3	. .	. .	10 2.62	4.96	0.38	V.	1	10.523	50 22.16	1.79	9.36	10 8.0	20 24 13.3
62	9	. .	. .	. .	. .	36.2	. .	. .	17 11 3.66	+ 4.96	+0.32	V.	5	44.029	−15 20.94	− 1.81	− 3.60	17 11 8.9	− 19 49 6.3

ZONE 255. JUNE 18. C. $D_0 = -20° 48' 40''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	4.2	20.6	37.3	. .	. .	14 43 4.21	+ 5.40	+1.23	IV.	2	22.631	−37 42.80	− 0.70	−11.35	14 43 10.8	− 21 26 34.9
2	9	. .	. .	38.3	55.2	. .	. .	. .	44 38.44	5.40	0.86	IV.	5	48.777	10 22.87	0.74	6.61	44 44.7	20 59 10.2
3	9	. .	. .	. .	20.2	36.5	. .	. .	45 3.64	5.39	0.95	IV.	4	42.581	16 52.06	0.76	7.72	45 10.0	21 5 40.5
4	8.9	10.5	26.6	43.2	59.6	. .	. .	. .	47 43.20	5.39	1.17	IV.	3	26.556	33 36.19	0.84	10.63	47 49.7	22 27.7
5	8	. .	27.7	43.3	0.3	17.	. .	. .	49 43.81	5.38	1.29	IV.	2	17.014	43 35.06	0.88	12.36	48 50.5	32 28.3
6	8.9	40.3	56.8	13.5	29.6	46.3	. .	. .	51 13.30	5.38	1.17	IV.	3	25.686	34 30.72	0.92	10.79	51 19.8	23 22.4
7	10	2.5	18.5	. .	. .	. .	. .	. .	53 35.22	5.37	1.09	II.	3	30.499	29 28.69	0.98	9.91	53 41.7	18 19.6
8	8	. .	. .	46.5	3.4	19.7	. .	. .	54 46.72	5.37	1.18	IV.	3	24.033	36 14.41	1.01	11.09	54 53.3	25 6.5
9	9	. .	. .	. .	. .	36.9	. .	. .	54 4.04	5.37	1.04	V.	3	34.515	25 16.78	1.00	9.18	54 10.5	14 7.0
10	9.10	. .	54.2	. .	27.	. .	. .	. .	56 10.46	5.36	1.35	IV.	1	11.806	49 1.45	1.04	13.30	56 17.2	37 55.8
11	9	9.2	25.5	. .	. .	. .	. .	. .	57 42.07	5.36	1.06	II.	3	32.616	27 15.80	1.09	9.53	57 48.5	16 6.4
12	7.8	. .	. .	41.8	58.8	15.4	. .	. .	57 42.18	5.36	1.21	IV.	2	22.584	37 45.74	1.09	11.35	57 48.7	26 38.2
13	8	. .	19.5	36.5	53.2	9.4	. .	. .	14 59 36.39	5.36	1.25	IV.	2	18.469	41 32.37	1.12	12.00	14 59 43.0	30 25.5
14	9.10	. .	. .	. .	34.7	51.4	. .	. .	15 0 18.32	5.36	0.97	IV.	4	39.605	19 58.83	1.15	8.26	15 0 24.6	8 48.2
15	9	. .	. .	. .	17.5	34.5	. .	. .	1 1.26	5.36	0.98	IV.	4	38.628	21 0.08	1.16	8.43	1 7.6	9 49.7
16	9	. .	. .	. .	. .	52.5	. .	. .	2 19.59	5.35	1.24	IV.	2	19.228	41 16.32	1.19	11.96	2 26.2	30 9.5
17	9.10	48.5	5.3	. .	38.2	. .	. .	. .	8 21.60	5.34	1.05	III.	3	33.800	26 1.52	1.33	9.31	8 28.0	14 52.2
18	9.10	. .	. .	. .	. .	31.3	. .	. .	9 58.49	5.33	0.84	V.	5	47.044	12 11.84	1.36	6.93	10 4.6	1 0.1
19	9	4.8	21.3	37.5	54.2	10.5	. .	. .	11 37.66	5.33	1.39	IV.	1	7.345	53 41.46	1.39	14.11	11 44.4	42 37.0
20	9.10	. .	. .	. .	34.8	. .	. .	. .	12 18.07	5.33	1.36	IV.	1	9.656	51 16.41	1.40	13.68	12 24.8	40 11.5
21	9.10	. .	. .	. .	. .	3.3	. .	. .	12 30.38	5.33	1.23	V.	2	18.217	42 19.79	1.41	12.14	12 36.9	31 13.3
22	9.10	. .	. .	31.3	. .	4.4	. .	. .	14 31.44	5.32	0.93	IV.	4	40.439	19 6.54	1.45	8.12	14 37.7	7 56.1
23	8	36.4	52.8	8.2	24.	. .	. .	. .	16 8.58	5.32	1.22	IV.	2	18.952	41 33.43	1.47	12.01	16 15.1	30 26.9
24	10	. .	. .	33.3	. .	7.0	. .	. .	16 33.77	5.32	1.20	IV.	3	25.278	34 56.42	1.48	10.86	16 40.3	23 48.8
25	9	. .	. .	33.4	. .	7.1	. .	. .	16 33.87	5.32	1.20	IV.	3	25.464	34 44.76	1.48	10.82	16 40.4	23 37.1
26	9.10	. .	. .	. .	34.2	. .	. .	. .	18 17.53	5.32	1.11	IV.	3	28.318	31 45.78	1.52	10.31	18 24.0	20 37.6
27	9.10	. .	. .	38.2	. .	11.5	. .	. .	20 38.44	5.31	0.93	IV.	4	39.475	20 7.04	1.56	8.28	20 44.7	8 56.9
28	9.10	. .	. .	. .	. .	18.5?	. .	. .	20 45.49	5.31	1.03	V.	3	31.514	28 25.14	1.56	9.73	20 51.8	17 16.4
29	8.9	21.4	37.5	. .	10.6	27.1	. .	. .	22 54.13	5.31	1.09	IV.	3	27.396	32 43.56	1.59	11.48	22 0.5	21 36.6
30	9	. .	. .	. .	. .	27.5	. .	. .	22 54.55	5.31	1.33	V.	1	9.612	51 19.23	1.59	13.69	22 1.2	40 14.5
31	7	. .	3.5	20.4	37.2	53.2	. .	. .	23 20.32	5.30	1.15	IV.	3	22.238	38 7.13	1.61	11.42	23 26.8	27 0.2
32	10	. .	. .	. .	. .	25.2	. .	. .	15 24 52.33	+ 5.30	+1.02	V.	3	31.238	−28 42.45	− 1.63	− 9.78	15 24 58.6	− 21 17 33.9

CORRECTIONS.

Date.	Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849. h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	Circle. A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 255	June 18, 14 40	80 9 62.2	58.6	63.9	56.1	61.3	54.5	59.43	30.348	75.8	71.4			
	15 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.4			
	15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.4			
	15 40	. .	. .	. .	. .	. .	. .	. .	30.344	74.5	68.5			
	16 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.7			
	16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	67.			
	16 40	61.7	59.	64.7	57.9	61.5	54.6	59.90	30.340	72.5	66.2			
	17 0	. .	. .	. .	. .	. .	. .	. .	30.332	72.	66.1	74.2	69.8	72.3

REMARKS.

(254) 51. Minutes assumed as 54, not 55.
(254) 52. Minutes assumed as 54, not 55.
(254) 53. Minutes assumed as 55, not 56; transits discordant; those over T.'s II and III rejected.
(254) 54. Minutes assumed as 57, not 58.
(254) 59. Minutes assumed as 9, not 10.
(254) 60. Minutes assumed as 9, not 10.
(255) 1. Declination differs 2′ from Arg. Z. 209, 15; micrometer reading perhaps $24^r.631$.
(255) 5. Minutes assumed as 48, not 49.
(255) 8. Right ascension differs 1^m from Arg. Z. 209, 27.
(255) 13. Declination differs 35″ from Arg. Z. 209, 31; micrometer reading perhaps $18^r.469$.
(255) 17. Transit over T. IV assumed as $38^s.2$.
(255) 28. Transit over T. IV assumed as at 2^s.
(255) 29. Minutes assumed as 21, not 22.
(255) 30. Minutes assumed as 21, not 22.

ZONE 255. JUNE 18. S. $D_o = -20° 48' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
33	8	. .	23.5	39.2	56.2	12.6	. .	. .	15 25 39.62	+ 5.30	+1.12	IV.	3	24.569	−35 40.85	− 1.64	−10.98	15 25 46.0	− 21 24 33.5
34	8	. .	. .	17.7	34.3	50.7	. .	. .	27 17.75	5.30	0.98	IV.	4	34.334	25 29.65	1.68	9.21	27 24.0	21 14 20.5
35	10	. .	. .	29.2	45.4	. .	. .	. .	28 28.99	5.30	0.72	IV.	5	52.735	6 14.50	1.69	5.90	28 35.0	20 55 2.1
36	9.10	. .	. .	. .	. .	34.7	. .	. .	29 1.87	5.29	0.87	V.	4	41.949	17 32.10	1.70	7.84	29 8.0	21 6 21.6
37	8.9	. .	. .	. .	0.5	17.3	. .	. .	30 44.19	5.29	0.87	IV.	4	42.165	17 18.18	1.73	7.80	30 50.3	6 7.7
38	8.9	20.7	37.3	53.2	9.8	26.6	. .	. .	32 53.52	5.29	0.88	IV.	4	41.488	18 0.72	1.76	7.92	32 59.7	6 50.4
39	8.9	45.2	1.7	18.2	34.6	. .	. .	. .	33 18.15	5.29	1.10	IV.	3	24.398	35 51.64	1.76	11.02	33 24.5	24 44.4
40	10	. .	. .	4.3	. .	. .	. .	. .	34 4.42	5.29	1.11	III.	3	23.378	36 55.62	1.78	11.21	34 10.8	25 48.6
41	9	31.5	48.	4.6	21.	37.6	. .	. .	36 4.54	5.28	1.04	IV.	3	28.725	31 20.05	1.80	9.33	36 10.9	20 11.2
42	10	45.2	1.7	. .	. .	. .	. .	. .	38? 18.16	5.28	0.82	III.	5	44.527	14 49.74	1.83	7.38	37 24.3	3 38.9
43	8.9	. .	. .	4.3	21.1	37.5	. .	. .	41 4.49	5.27	0.79	IV.	5	46.477	12 47.42	1.87	7.02	41 10.5	1 36.3
44	8.9	. .	59.3	15.8	32.3	. .	. .	. .	43 15.76	5.27	0.93	IV.	3	35.064	24 42.33	1.90	9.08	43 22.0	13 33.3
45	9	. .	. .	27.4	44.2	0.3	. .	. .	44 27.47	5.27	1.16	IV.	2	18.374	42 9.95	1.91	12.11	44 33.9	31 4.0
46	9.10	. .	. .	. .	. .	12.8?	. .	. .	44 39.93	5.27	0.99	V.	3	30.760	29 12.25	1.92	9.87	44 46.2	18 4.0
47	9.10	. .	. .	. .	. .	. .	. .	. .	45	5.27	0.98	VI.	3	31.622	28 17.55	1.9	9.71	45	17 9.2
48	9	. .	54.5	11.2	27.5	. .	. .	. .	47 11.03	5.26	0.82	IV.	4	43.400	16 0.72	1.94	7.58	47 17.1	4 50.2
49	9	42.2	58.2	. .	. .	47.9	. .	. .	48 14.96	5.26	0.86	II.	4	40.061	19 29.46	1.96	8.18	48 21.1	6 19.6
50	8	. .	. .	19.5	35.5	52.6	. .	. .	48 19.39	5.26	0.78	IV.	5	45.480	13 49.80	1.96	7.20	48 25.4	21 2 39.0
51	9.10	. .	. .	36.2	. .	8.8	. .	. .	49 36.08	5.26	0.72	IV.	5	50.091	9 0.53	1.98	6.37	49 42.1	20 57 48.9
52	10	54.8	10.4	. .	. .	. .	. .	. .	51 27.31	5.26	0.80	II.	4	44.528	14 49.18	1.99	7.38	51 33.4	21 3 38.5
53	8	. .	42.5	59.5	15.6	32.3	. .	. .	53 59.21	5.26	1.17	IV.	2	16.536	44 5.17	2.02	12.46	54 5.6	32 59.6
54	9	36.7	53.6	9.6	26.6	. .	. .	. .	55 9.85	5.25	1.13	IV.	2	19.242	41 15.44	2.02	11.96	55 16.2	21 30 9.4
55	9.10	. .	. .	41.5	57.5	. .	. .	. .	55 41.20	5.25	0.68	IV.	5	51.795	7 13.44	2.03	6.05	55 47.1	20 56 1.5
56	8	. .	. .	47.3	. .	20.4	. .	. .	57 47.46	5.25	1.07	IV.	2	23.738	36 33.22	2.04	11.14	56 53.8	21 25 26.4
57	8.9	. .	. .	54.2	10.6	. .	. .	. .	58 54.12	5.25	1.09	IV.	2	22.066	38 18.18	2.06	11.46	58 0.5	27 11.7
58	9	. .	. .	. .	. .	25.2	. .	. .	58 52.29	5.25	1.14	V.	2	18.837	41 40.72	2.06	12.04	57 58.7	30 34.8
59	8.9	. .	. .	. .	. .	22.8	. .	. .	15 59 49.99	5.25	0.74	V.	5	47.776	11 25.64	2.07	6.78	15 58 56.0	0 14.5
60	10	. .	. .	17.8	34.	. .	. .	. .	16 0 17.61	5.25	1.15	IV.	2	17.474	43 6.33	2.07	12.29	16 0 24.0	21 22 0.7
61	10	. .	. .	. .	28.2?	. .	. .	. .	3 11.64	5.24	0.71	IV.	5	48.536	10 38.19	2.09	6.64	3 17.6	20 59 26.9
62	7	. .	. .	45.5	2.6	18.3	. .	. .	5 45.66	5.24	0.73	IV.	5	47.342	11 53.20	2.11	6.89	4 51.6	21 0 42.2
63	9.10	58.8	15.4	31.9	. .	5.3	. .	. .	7 32.01	5.24	0.88	IV.	3	36.252	23 27.91	2.12	8.87	6 38.1	21 12 18.9
64	7.8	30.2	46.3	2.8	19.4	35.3	. .	. .	8 2.80	5.24	0.65	IV	5	52.299	6 42.05	2.13	5.96	8 8.7	20 55 30.1
65	8	. .	. .	48.5	5.3	21.4	. .	. .	9 48.57	5.24	1.11	IV.	2	18.009	42 32.66	2.14	12.18	8 54.9	21 31 27.0
66	9	59.3	. .	32.3	48.7	. .	. .	. .	10 32.21	5.24	0.73	IV.	4	46.146	13 8.33	2.14	7.10	10 38.2	1 57.6
67	9	. .	14.2	. .	47.3	3.4	. .	. .	11 30.64	5.23	0.82	IV.	4	39.930	19 38.30	2.15	8.19	11 36.7	8 28.6
68	10	. .	. .	. .	48.	4.	. .	. .	11 31.29	5.23	0.78	V.	4	43.321	16 6.18	2.15	7.58	11 37.3	4 55.9
69	9	. .	. .	. .	28.2	44.5	. .	. .	13 11.58	5.23	0.93	IV.	3	31.240	28 42.39	2.15	9.78	13 17.7	21 17 34.3
70	9.10	. .	. .	13.2?	29,6?	. .	. .	. .	14 13.10	5.23	0.63	IV.	5	52.282	6 43.12	2.16	5.96	14 19.0	20 55 31.2
71	9.10	51.6	. .	24.5	. .	. .	. .	. .	16 24.61	5.23	0.97	III.	3	28.688	31 22.32	2.16	10.24	16 30.8	21 20 14.7
72	9	48.7	5.3	21.3	. .	. .	. .	. .	20 21.60	5.23	0.88	III.	3	34.764	25 1.03	2.18	9.14	20 27.7	13 52.3
73	9	. .	. .	. .	4.3	. .	. .	. .	21 47.70	5.22	0.77	IV.	4	41.701	17 47.17	2.18	7.87	20 53.7	6 37.2
74	6	36.2	52.6	9.	. .	42.	. .	. .	24 9.10	5.22	0.81	IV.	4	39.002	19 33.79	2.18	8.19	23 15.1	8 24.2
75	10	. .	. .	. .	51.	. .	. .	. .	24 34.42	5.22	0.70	IV.	4	46.206	13 4.57	2.18	7.08	24 40.3	1 53.8
76	9	55.6	11.9	. .	45.5	. .	. .	. .	26 28.59	5.22	1.11	IV.	2	16.159	44 28.75	2.19	12.53	26 34.9	33 23.5
77	9.10	28.7	. .	1.7	18.3	34.5	. .	. .	34 1.67	5.22	0.69	IV.	5	45.121	14 12.47	2.19	7.26	34 7.6	3 1.9
78	9.10	40.	56.7	12.8	29.6	. .	. .	. .	39 12.98	5.21	0.75	IV.	4	40.906	18 37.06	2.19	8.02	39 18.9	7 27.3
79	9.10	. .	. .	. .	49.3	6.8	. .	. .	39 33.21	5.21	1.18	IV.	1	9.729	51 11.76	2.19	13.68	39 39.6	40 7.6
80	9.10	. .	. .	. .	. .	32.	. .	. .	40 59.17	5.21	0.73	V.	5	41.900	17 34.43	2.19	7.83	40 5.1	6 24.4
81	8.9	. .	. .	. .	. .	5.2	. .	. .	16 40 32.27	+5.21	+1.11	V.	2	14.647	−46 3.65	− 2.19	−12.80	16 40 38.6	− 21 34 58.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(255) 42. Minutes assumed as 37.
(255) 56. Minutes assumed as 56, not 57.
(255) 57. Minutes assumed as 57, not 58.
(255) 58. Minutes assumed as 57, not 58.
(255) 59. Minutes assumed as 58, not 59.
(255) 62. Minutes assumed as 4, not 5.
(255) 63. Minutes assumed as 6, not 7.
(255) 65. Minutes assumed as 8, not 9.
(255) 73. Minutes assumed as 20, not 21.
(255) 74. Minutes assumed as 23, not 24, and micrometer reading as $40^r.002$, not $39^r.002$.
(255) 80. Minutes assumed as 39, not 40.

ZONE 255. JUNE 18. C. $D_0 = -20° 48' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
82	9	55.3	12.3	. .	45.3	. .	. .	. .	16 43 28.56	+ 5.21	+0.95	IV.	3	25.562	−34 38.56	− 2.18	−10.81	16 42 34.7	− 21 23 31.6
83	9.10	. .	. .	10.5	. .	. .	. .	. .	45 10.48	5.21	0.66	III.	5	46.155	13 7.39	2.18	7.06	45 16.4	1 56.6
84	9	. .	. .	. .	51.5	7.3	. .	. .	45 34.56	5.21	1.14	IV.*	1	12.049	48 46.64	2.18	13.29	45 40.9	37 42.1
85	9.10	. .	. .	20.2	36.2	. .	. .	. .	46 19.92	5.21	0.98	IV.	3	23.465	36 50.10	2.18	11.18	46 26.1	25 43.5
86	8	. .	. .	. .	. .	3.5	. .	. .	46 30.63	5.21	0.90	V.	3	29.623	30 23.47	2.18	10.06	46 36.7	19 15.7
87	9	. .	. .	. .	58.3	14.6	. .	. .	47 41.62	5.21	1.07	IV.	2	16.366	44 15.96	2.18	12.51	47 47.9	33 10.6
88	9	. .	. .	38.6	. .	. .	. .	. .	48 38.74	5.21	1.04	III.	2	17.494	43 5.01	2.17	12.28	48 45.0	31 59.5
89	9	. .	. .	58.7	. .	. .	. .	. .	49 58.82	5.21	0.93	III.	3	26.436	33 43.78	2.17	10.66	49 5.0	22 36.6
90	9	. .	. .	. .	. .	28.2?	. .	. .	49 55.36	5.21	0.75	V.	4	39.606	19 59.71	2.17	8.25	50 1.3	8 50.1
91	10	. .	. .	. .	. .	8.5	. .	. .	50 35.64	5.21	0.80	V.	3	35.456	24 17.60	2.17	9.01	50 41.6	13 8.8
92	8	. .	. .	. .	44.	0.5	. .	. .	51 27.50	5.21	0.81	IV.	3	34.974	24 47.84	2.16	9.09	51 33.5	13 39.1
93	10	. .	17.5	. .	. .	. .	. .	. .	54 33.97	5.21	0.75	II.	3	38.362	21 15.51	2.15	8.48	54 39.9	10 6.1
94	10	. .	. .	. .	56.2	. .	. .	. .	54 39.58	5.21	0.77	IV.	3	36.925	22 45.37	2.15	8.74	54 45.6	11 36.3
95	10	. .	. .	. .	. .	17.5	. .	. .	55 44.63	5.21	0.86	V.	3	30.478	29 29.94	2.14	9.91	55 50.7	18 22.0
96	8	. .	. .	40.7	56.5	. .	. .	. .	56 40.30	5.21	0.67	IV.	4	44.162	15 13.35	2.14	7.40	56 46.2	4 3.0
97	9.10	. .	. .	8.	. .	. .	. .	. .	57 8.01	5.21	0.70	IV.	3	42.032	17 25.01	2.13	7.81	57 13.9	6 14.9
98	8.9	. .	. .	12.3	45.2	. .	. .	. .	16 57 12.33	5.21	0.65	IV.	3	44.864	14 27.15	2.13	7.30	16 57 18.2	3 16.6
99	.	. .	. .	45.8	. .	18.7	. .	. .	17 0 45.85	+ 5.21	+1.09	IV.	1	13.918	−46 48.99	− 2.12	−12.94	17 0 52.1	− 21 35 44.1

ZONE 256. JUNE 19. S. $D_0 = -21° 23' 40''$.

[Throughout this zone transits over T.'s I–V assumed to have been recorded as over II–VI, respectively.]

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	10.9	. .	. .	. .	45.	. .	. .	. .	15 47 44.96	+ 5.36	+1.13	.	5	47.918	−11 16.79	− 2.15	− 2.85	15 47 51.4	− 21 35 1.8
2	10	. .	. .	. .	28.	. .	. .	. .	50 28.16	5.36	1.20	.	1	9.802	51 7.13	2.16	9.61	50 34.7	22 14 58.9
3	1	. .	. .	. .	21.5	38.	55.	. .	51 21.59	5.35	1.18	IV.	2	13.222	47 33.01	2.16	9.02	51 28.1	22 11 24.2
4	9	. .	. .	. .	59.	. .	. .	. .	52 58.95	5.35	1.09	.	5	49.610	9 30.72	2.16	2.55	53 5.4	21 33 15.4
5	9.8	. .	. .	. .	. .	58.	. .	. .	53 41.20	5.35	1.17	.	1	9.028	51 55.79	2.17	9.75	53 47.7	22 15 47.7
6	10	. .	. .	. .	. .	53.	. .	. .	15 58 20.05	5.35	1.08	.	5	44.080	15 17.74	2.18	3.56	15 58 26.5	21 39 3.5
7	8	. .	25.	. .	. .	. .	. .	. .	16 0 58.18	5.34	1.10	.	2	23.570	36 43.51	2.18	7.17	16 1 4.6	22 0 32.9
8	7.8	. .	. .	. .	21.5	. .	. .	. .	1 21.54	5.34	1.06	.	3	38.018	21 36.96	2.18	4.59	1 27.9	21 45 23.7
9	9	. .	. .	. .	. .	24.5	. .	. .	2 51.51	5.34	1.07	.	3	35.610	24 8.08	2.18	5.05	1 57.9	21 47 55.3
10	10	. .	. .	. .	. .	25.?	. .	. .	3 51.92	5.34	1.10	.	1	15.508	45 9.52	2.18	8.63	2 59.4	22 9 0.3
11	9	. .	48.	5.	. .	. .	. .	. .	5 21.31	5.34	1.04	III.	4	38.460	21 10.11	2.18	4.50	5 27.7	21 44 56.8
12	8	. .	. .	37.	53.5	. .	. .	. .	5 53.56	5.34	1.06	IV.	3	24.382	35 52.64	2.18	7.04	6 0.0	59 41.9
13	10	. .	16.	. .	. .	5.5	. .	. .	8 48.94	5.33	1.00	.	5	51.300	7 44.39	2.18	2.26	8 55.3	21 31 28.8
14	11	. .	2.5	. .	. .	. .	. .	. .	10 35.69	5.33	1.05	.	1	20.243	40 12.02	2.18	7.74	10 42.1	22 4 1.9
15	11	. .	15.	31.5	. .	. .	. .	. .	11 48.12	5.33	1.06	.	1	10.980	49 53.19	2.18	9.39	11 54.5	22 13 44.8
16	9	. .	. .	. .	21.	. .	. .	. .	12 21.03	5.33	0.99	.	4	38.695	20 55.81	2.18	4.46	12 27.3	21 44 42.4
17	11	. .	18.	. .	. .	. .	. .	. .	14 51.18	5.33	1.01	.	2	23.310	36 55.94	2.18	7.23	14 57.5	22 0 45.3
18	8	. .	. .	36.	52.5	. .	. .	. .	15 52.54	5.32	0.99	IV.	3	30.788	29 10.56	2.17	5.87	15 58.8	21 52 58.6
19	8	. .	42.2	58.5	. .	. .	47.8	. .	18 15.05	5.32	0.96	III.	3	37.243	22 25.66	2.17	4.73	18 21.3	46 12.6
20	10	. .	. .	11.	28.	. .	. .	. .	26 27.78	5.32	0.89	IV.	4	49.470	9 39.50	2.15	2.58	26 34.0	33 24.2
21	11	. .	4.	. .	36.	. .	. .	. .	28 36.56	5.31	0.89	.	3	38.728	20 52.35	2.14	4.48	28 42.8	44 39.0
22	11	. .	. .	41.5	. .	. .	. .	. .	29 58.04	5.31	0.88	.	3	39.005	20 34.97	2.13	4.42	30 4.2	21 44 21.5
23	8	. .	40.	56.3	13.	. .	. .	. .	35 13.07	5.31	0.90	IV.	1	10.332	50 34.14	2.09	9.51	35 19.3	22 14 25.7
24	10	. .	. .	8.5	. .	. .	. .	. .	38 24.99	5.31	0.86	.	3	29.900	30 6.21	2.07	6.02	38 31.2	21 53 54.3
25	9	. .	. .	. .	33.	. .	. .	. .	39 33.00	5.31	0.80	.	4	43.083	16 20.50	2.06	3.71	39 39.1	40 6.3
26	7	. .	. .	. .	32.5	. .	5.5	. .	40 32.52	5.31	0.80	IV.	5	42.969	11 13.76	2.06	2.86	40 38.6	21 34 58.7
27	10	. .	24.	. .	. .	. .	30.	. .	16 42 57.07	+ 5.30	+0.84	IV.	2	20.842	−39 34.89	− 2.03	− 7.63	16 43 3.2	− 22 3 24.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 256	June 19,	15 40	80 44 59.9	53.6	57.3	52.9	55.2	51.2	55.02						
		16 0	. .	. .	. .	. .	. .	. .	. .	30.234	75.5	72.5	74.	75.	75.
		16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.	. .	74.	73.5
		16 40	. .	. .	. .	. .	. .	. .	. .	30.232	75.	72.			
		17 0	59.3	54.	57.6	52.9	55.6	51.2	55.10	. .	. .	71.9			
		17 20	. .	. .	. .	. .	. .	. .	. .	30.228	74.2	71.9			
		17 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	71.9			
		17 50	59.0	54.5	57.8	52.9	55.8	50.8	55.13						

REMARKS.

(255) 82. Minutes assumed as 42, not 43.
(255) 89. Minutes assumed as 48, not 49, to agree with Arg. Z. 392, 19; 393, 12.
(255) 98. Time of transit over T. V assumed as $45^s.2$.
(256) 2. Right ascension differs 16^s from Arg. Z. 209, 87; perhaps one thread interval in error.
(256) 6. Transit over T. V assumed as recorded over T. IV.
(256) 9. Transit over T. V assumed as recorded over T. IV, and minutes as 1, not 2.
(256) 10. Transit over T. V assumed as recorded over T. IV, and minutes as 2, not 3.
(256) 23. Declination differs 16″ from Arg. Z. 213, 46; 302, 3; micrometer reading, perhaps, $10^r.532$.
(256) 26. Micrometer reading assumed as $47^r.969$, not $42^r.969$.
[(*255) From 84 to 99, inclusive, under Micrometer, add I to IV, IV, V, etc.]

ZONE 256. JUNE 19. S. $D_0 = -21° 23' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s	° ' ''
28	10	. .	3.	. .	. .	. .	. .	. .	16 45 36.12	+ 5.31	+0.80	II.	3	36.000	−23 43.41	− 2.01	− 4.97	16 45 42.2	− 21 47 30.4
29	8	. .	. .	. .	. .	51.5	. .	. .	45 34.84	5.31	0.78	V.	4	45.430	13 53.82	2.01	3.31	45 40.9	37 39.1
30	7	. .	9.	25.8	42.	. .	. .	. .	47 42.12	5.30	0.77	IV.	5	49.718	9 23.88	1.99	2.52	47 48.2	33 8.4
31	10.9	. .	. .	. .	39.	. .	. .	. .	48 38.95	5.30	0.74	IV.	5	50.792	8 16.41	1.98	2.33	48 45.0	32 0.7
32	7	. .	52.	. .	25.	. .	58.	. .	16 56 25.08	5.30	0.74	IV.	3	32.148	27 45.36	1.88	5.63	16 56 31.1	51 32.9
33	10	. .	. .	21.5	. .	. .	. .	. .	17 1 38.02	5.30	0.70	III.	3	35.003	24 46.09	1.82	5.15	17 1 44.0	48 33.1
34	10	. .	. .	4.	. .	. .	. .	. .	2 20.55	5.30	0.68	III.	4	40.990	18 31.21	1.80	4.05	2 26.5	42 17.0
35	10	. .	. .	. .	0.	. .	33.	. .	3 0.01	5.30	0.68	IV.	5	47.133	12 6.20	1.79	2.98	3 6.0	35 51.0
36	10	. .	. .	35.5	. .	. .	. .	. .	5 52.00	5.30	0.67	III.	3	31.639	28 17.24	1.75	5.71	5 58.0	52 4.7
37	8	. .	. .	3.	19.2	. .	. .	. .	7 19.38	5.30	0.64	IV.	4	42.603	16 50.68	1.73	3.79	7 25.3	50 36.2
38	9	. .	58.5	. .	31.2	. .	. .	. .	14 31.24	5.30	0.59	IV.	5	48.958	10 11.51	1.62	2.66	14 37.1	33 55.8
39	9	. .	. .	. .	. .	. .	16.	. .	14 43.08	5.30	0.58	VI.	5	53.082	5 52.72	1.61	1.94	14 48.9	29 36.3
40	9	. .	. .	. .	31.5	. .	. .	. .	16 31.41	5.30	0.56	IV.	5	56.360	5 35.36	1.58	1.83	16 37.3	29 19.8
41	9	. .	. .	16.8	. .	. .	. .	. .	23 33.32	5.31	0.54	III.	3	37.948	21 41.24	1.46	4.59	23 39.1	45 27.3
42	10	. .	. .	. .	. .	11.	. .	. .	23 54.32	5.31	0.54	V.	4	40.816	18 43.20	1.46	4.08	24 0.2	42 28.7
43	7.6	. .	38.	54.	. .	27.3	. .	. .	26 10.74	5.31	0.56	III.	3	27.703	32 24.11	1.39	6.44	26 16.6	56 11.9
44	6	. .	5.	21.6	37.3	. .	. .	. .	29 37.87	5.31	0.51	IV.	3	34.485	25 18.79	1.33	5.24	29 43.7	49 5.4
45	11	. .	. .	7.	. .	. .	. .	. .	32 23.50	5.31	0.51	III.	3	32.088	27 49.06	1.28	5.65	32 29.3	51 36.0
46	4	. .	47.	4.	20.	37.	. .	. .	34 20.23	5.32	0.46	IV.	4	46.730	12 31.55	1.24	3.04	34 26.0	21 36 15.8
47	8.7	. .	. .	. .	15.	. .	. .	. .	35 15.17	5.32	0.53	IV.	2	7.132	43 27.47	1.20	7.95	35 21.0	22 7 16.6
48	10	. .	. .	. .	. .	. .	7.	. .	17 35 33.97	+ 5.32	+0.49	VI.	3	26.958	−33 10.78	− 1.19	− 6.57	17 35 39.8	− 21 56 58.5

ZONE 257. JUNE 20. C. $D_0 = -20° 11' 10''$.

1	9.10	. .	. .	55.8	11.7	28.6	. .	. .	16 3 55.62	+ 6.14	+0.88	IV.	3	31.108	−28 50.61	− 3.75	− 5.82	16 4 2.64	− 20 40 10.2
2	7	. .	28.8	44.2	1.5	17.8	. .	. .	5 44.84	6.13	0.88	IV.	1	11.505	49 20.51	3.74	9.19	5 51.85	21 0 43.4
3	7	. .	. .	. .	49.2	5.8	. .	. .	5 32.84	6.13	0.89	IV.	3	28.165	31 55.26	3.74	6.32	5 39.86	20 43 15.3
4	8	29.	45.6	1.7	18.5	34.7	. .	. .	8 1.90	6.13	0.88	IV.	2	16.451	44 10.49	3.73	8.34	8 8.91	55 32.6
5	9.10	27.3	43.5	59.5	. .	32.7	. .	. .	11 59.88	6.12	0.90	IV.	5	45.745	13 33.24	3.71	3.32	11 6.90	24 50.3
6	10	. .	. .	. .	. .	46.?	. .	. .	14 13.21	6.12	0.89	V.	2	16.416	44 12.82	3.70	8.34	14 20.22	55 34.9
7	9.10	55.9	12.4	28.6	45.4	1.2	. .	. .	24 28.70	6.11	0.92	IV.	5	45.071	14 15.60	3.64	3.43	23 35.73	20 25 32.7
8	10	27.3	44.3	0.4	16.8	33.2	. .	. .	34 0.40	6.11	0.94	IV.	1	9.264	51 41.05	3.56	9.57	34 7.45	21 3 4.2
9	9	. .	. .	. .	. .	11.8	. .	. .	34 39.12	6.11	0.92	V.	5	46.127	13 9.27	3.56	3.24	34 46.15	20 24 26.1
10	9	. .	56.6	12.8	29.4	. .	. .	. .	39 12.89	6.10	0.95	IV.	3	30.961	28 59.70	3.52	5.83	39 19.94	40 19.1
11	9	. .	52.7	8.2	25.2	. .	. .	. .	42 8.68	6.10	0.95	IV.	5	48.625	10 32.55	3.49	2.80	42 15.73	21 48.8
12	10	. .	35.3	51.3	7.6	24.2	. .	. .	46 51.39	6.10	0.96	IV.	3	38.285	21 20.34	3.44	4.58	46 58.45	32 38.4
13	9.10	54.6	. .	27.2	43.5	. .	. .	. .	49 27.20	6.10	0.96	IV.	3	38.013	21 37.28	3.41	4.63	49 34.26	32 55.3
14	10	2.2	. .	34.5	. .	7.2	. .	. .	51 34.64	6.10	0.97	IV.	5	49.338	9 47.92	3.39	2.69	51 41.71	21 4.0
15	8.9	29.2	45.3	2.	18.3	34.9	. .	. .	53 1.94	6.10	0.97	IV.	5	48.235	10 57.08	3.36	2.86	53 9.01	22 13.3
16	9	25.3	41.3	58.2	. .	. .	. .	. .	55 57.97	6.10	0.98	III.	5	54.786	4 5.62	3.32	1.75	55 5.05	15 20.7
17	9.10	. .	. .	13.2	29.2	. .	. .	. .	55 12.96	6.10	0.97	IV.	2	22.217	38 8.83	3.34	7.35	55 20.03	49 29.5
18	7	. .	. .	. .	1.9	18.2	. .	. .	16 56 45.48	6.10	0.98	V.	5	53.524	5 25.03	3.31	1.96	16 56 52.56	16 40.3
19	9.10	53.7	10.2	26.7	. .	. .	. .	. .	17 0 26.62	6.10	0.98	III.	3	36.532	23 10.28	3.27	4.87	17 0 33.70	34 28.4
20	9	. .	. .	56.4	. .	29.3	. .	. .	1 56.50	6.10	0.98	IV.	4	41.815	17 40.02	3.25	3.97	2 3.58	28 57.2
21	9.10	. .	. .	. .	24.3	. .	. .	. .	1 7.74	6.10	0.98	IV.	4	35.774	23 59.10	3.26	5.01	1 14.82	35 17.4
22	8.9	. .	. .	. .	19.3	. .	. .	. .	2 2.77	6.10	0.98	IV.	5	43.339	16 4.56	3.24	3.71	2 9.85	27 21.5
23	9	. .	. .	. .	. .	36.2	. .	. .	17 2 3.48	+ 6.10	+0.98	V.	3	33.438	−26 24.41	− 3.24	− 5.39	17 2 10.56	− 20 37 43.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ' ''	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.		B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ' ''							''	in.	°	°	°	°	°
Zone 257	June 20,	*16 0	79.32	33.7 35.1	28.9 29.4	32.2 33.6	30.4 32.1	33.8 35.5	28.8 30.9	32.03	30.166	80.5	76.1	76.8	82.2	
		16 20	. .		. .	. .	. .	. .	. .	. .	. .	. .	75.8			
		16 40	. .		. .	. .	. .	. .	. .	. .	30.166	79.8	75.9			
		17 0	. .		. .	. .	. .	. .	. .	. .	. .	. .	74.9			
		17 20	. .		. .	. .	. .	. .	. .	. .	30.168	78.5	75.			
		17 30		33.6 34.2	28.9 29.9	32.2 32.8	30.8 33.0	33.5 35.1	28.8 30.4	31.93	. .	. .	. .	. .	76.8	78.5
		17 40	. .		. .	. .	. .	. .	. .	. .	. .	. .	73.4			

REMARKS.

(256) 40. Micrometer reading assumed as $53^r.360$, not $56^r.360$.
(256) 47. Micrometer reading assumed as $17^r.132$, not $7^r.132$.
(257) 5. Minutes assumed as 10, not 11.
(257) 7. Minutes assumed as 23, not 24.
(257) 12. Right ascension differs 1^m from Arg. Z. 211, 51; minutes probably 45, not 46.
(257) 16. Minutes assumed as 54, not 55.

*Minutes of circle reading assumed as 33 instead of 32.

ZONE 257. JUNE 20. C. $D_0 = -20° 11' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
24	10	45.2	. .	18.4	. .	. .	. .	. .	17 4 18.18	+ 6.10	+0.98	III.	5	46.425	−12 50.37	− 3.21	− 3.18	17 4 25.26	− 20 24 6.8
25	8.9	17.7	34.3	50.3	7.1	23.6	. .	. .	6 50.60	6.10	0.98	IV.	3	23.252	37 3.53	3.17	7.16	6 57.68	48 23.9
26	10	20.2	. .	53.2	. .	. .	. .	. .	9 53.04	6.10	1.00	III.	5	52.489	6 29.75	3.12	2.14	10 0.14	17 45.0
27	9.10	. .	. .	46.3	3.4	. .	. .	. .	10 46.59	6.10	0.99	IV.	4	41.187	17 16.81	3.11	3.95	9 53.68	28 33.9
28	9.10	. .	. .	. .	. .	24.7	. .	. .	10 52.04	6.10	0.99	V.	5	50.336	8 45.21	3.11	2.50	9 59.13	20 0.8
29	9.10	. .	. .	. .	17.3	. .	. .	. .	10 0.78	6.10	0.99	VII.	5	46.324	12 56.40	3.12	3.19	10 7.87	24 12.7
30	5	. .	. .	54.2	10.3	26.8	. .	. .	12 54.00	6.10	0.98	IV.	2	15.222	45 27.57	3.07	8.57	13 1.08	56 49.2
31	9	. .	. .	. .	6.3	22.3	. .	. .	13 49.70	6.10	0.99	IV.	5	45.675	13 37.64	3.05	3.30	13 56.79	24 54.0
32	9.10	. .	. .	. .	. .	34.2	. .	. .	13 1.48	6.10	0.99	V.	3	35.770	23 57.91	3.07	5.02	13 8.57	35 16.0
33	10	. .	. .	41.3	. .	. .	. .	. .	15 41.23	6.10	1.01	III.	5	52.723	6 15.19	3.03	2.10	15 48.34	17 30.3
34	10	. .	. .	49.3	. .	. .	. .	. .	17 49.38	6.10	1.01	III.	3	32.844	27 1.50	2.99	5.52	17 56.49	38 20.0
35	10	48.5	4.8	21.2	. .	. .	. .	. .	18 21.23	6.10	1.01	III.	5	47.603	11 36.69	2.97	2.98	18 28.34	22 52.6
36	9	. .	56.2	12.3	29.1	45.4	. .	. .	20 12.53	6.10	1.00	IV.	2	21.729	38 39.25	2.95	7.44	20 19.63	49 59.6
37	10	. .	. .	22.7	. .	. .	. .	. .	24 22.80	6.11	1.02	III.	3	31.457	28 28.77	2.87	5.75	24 29.93	39 47.4
38	10	. .	. .	. .	52.2	8.1	. .	. .	26 35.49	6.11	1.02	IV.	3	29.055	30 59 35	2.83	6.16	26 42.62	42 18.3
39	9.10	. .	. .	. .	35.2	. .	. .	. .	27 18.58	6.11	1.01	IV.	2	19.305	41 11.49	2.81	7.85	27 25.70	52 32.2
40	9	. .	. .	. .	. .	14.6	. .	. .	27 41.83	6.11	1.01	V.	2	20.481	39 57.85	2.81	7.65	27 48.95	51 18.3
41	9	. .	. .	. .	. .	0.7	. .	. .	28 27.98	6.11	1.02	V.	3	35.618	24 7.51	2.80	5.03	28 35.11	35 25.3
42	10	. .	. .	47.2	3.8	. .	. .	. .	32 47.26	6.11	1.02	IV.	3	24.854	35 22.84	2.72	6.90	31 54.39	46 42.5
43	8.9	54.5	10.4	27.4	43.6	59.5	. .	. .	38 27.08	6.11	1.02	IV.	3	25.048	35 10.73	2.62	6.87	38 34.21	46 30.2
44	9	. .	6.2	23.2	39.2	56.3	. .	. .	40 23.01	6.12	1.04	IV.	3	25.013	35 12.93	2.60	6.87	40 30.17	46 32.4
45	10	. .	. .	7.8	. .	. .	. .	. .	42 7.94	6.12	1.04	III.	2	16.949	43 38.63	2.55	8.27	42 15.10	20 54 59.4
46	10	. .	. .	44.5	. .	. .	. .	. .	43 44.66	6.12	1.04	III.	1	11.425	49 25.47	2.53	9.20	43 51.82	21 0 47.2
47	10	. .	. .	. .	. .	25.6	. .	. .	43 52.93	6.12	1.06	V.	5	47.051	12 11.84	2.52	3.08	44 0.11	20 23 27.4
48	10	. .	. .	. .	15.3	. .	. .	. .	44 58.69	6.12	1.05	IV.	2	23.229	37 5.35	2.50	7.18	45 5.86	48 25.0
49	9.10	. .	. .	. .	52.3	8.5	. .	. .	45 35.67	6.12	1.04	III.	1	12.902	47 52.59	2.49	8.99	45 42.83	59 14.1
50	10	. .	. .	. .	. .	32.	. .	. .	46 59.33	6.12	1.06	V.	5	48.172	11 0.92	2.46	2.86	46 6.51	22 16.2
51	10	1.6	. .	34.2	. .	. .	. .	. .	48 34.35	6.12	1.06	III.	3	34.878	24 53.87	2.43	5.15	48 41.53	20 36 11.4
52	8.9	. .	9.9	26.2	. .	. .	. .	. .	50 26.32	6.13	1.05	III.	1	10.581	50 18.09	2.39	9.39	50 33.50	21 1 39.9
53	7.8	. .	. .	57.6	13.8	30.7	. .	. .	51 57.63	6.13	1.06	IV.	5	50.990	8 4.03	2.36	2.51	51 4.82	20 19 18.9
54	9.10	. .	. .	4.2	21.2	. .	. .	. .	52 4.44	6.13	1.06	IV.	4	40.351	19 12.07	2.36	4.22	52 11.63	30 28.6
55	8	. .	16.8	33.2	49.8	6.5	. .	. .	53 33.36	6.13	1.07	IV.	3	27.577	32 32.14	2.32	6.43	53 40.56	43 50.9
56	10	. .	22.3	. .	. .	. .	. .	. .	55 38.67	6.13	1.07	II.	2	15.228	45 26.76	2.28	8.58	55 45.87	56 47.6
57	10	. .	. .	45.8	. .	18.6	. .	. .	56 45.86	6.13	1.07	IV.	3	22.323	38 1.81	2.25	7.33	55 53.06	49 21.4
58	10	47.3	3.8	. .	. .	. .	. .	. .	57 30.16	6.13	1.08	II.	5	42.809	16 37.19	2.24	3.79	57 37.37	27 53.2
59	10.11	. .	. .	. .	. .	1.8?	. .	. .	57 29.13?	6.13	1.08	V.	5	47.517	11 42.09	2.24	2.98	57 36.34	22 57.3
60	10	. .	. .	14.8	. .	. .	. .	. .	17 59 14.93	6.14	1.07	III.	2	20.335	40 6.70	2.20	7.68	59 22.14	51 26.6
61	9	. .	. .	. .	3.6	20.3	. .	. .	18 0 47.24	6.14	1.07	IV.	2	15.942	44 42.23	2.17	8.46	17 59 54.45	56 2.9
62	10	. .	. .	. .	18.6	. .	. .	. .	2 1.97	6.14	1.07	IV.	2	17.472	43 6.46	2.13	8.20	18 2 9.18	54 26.8
63	9.10	. .	. .	. .	. .	. .	. .	. .	2	6.14	1.08	VI.	3	27.164	32 57.80	2.12	6.51	. . .	44 16.4
64	9	. .	. .	. .	. .	. .	. .	. .	3	6.14	1.08	.	5	43.628	15 46.11	2.10	3.63	. . .	27 1.8
65	10	. .	. .	. .	. .	22.	. .	. .	4 49.28	6.14	1.08	V.	4	36.424	23 19.00	2.07	4.88	4 56.50	20 34 36.0
66	6	. .	. .	. .	56.2	13.2	. .	. .	4 39.95	6.14	1.07	IV.	1	6.798	54 15.50	2.08	10.08	4 47.16	21 5 37.7
67	9	. .	. .	57.4	. .	. .	. .	. .	6 57.54	6.15	1.08	III.	2	17.374	43 12.42	2.02	8.22	6 4.77	20 54 32.7
68	7	. .	. .	. .	25.3	41.5	. .	. .	6 8.72	6.14	1.08	IV.	3	25.478	34 43.88	2.04	6.80	6 15.94	46 2.7
69	8	. .	. .	. .	. .	. .	. .	. .	6	6.14	1.09	VI.	5	45.022	14 18.36	2.03	3.40	. . .	25 33.8
70	8	. .	. .	32.1	. .	5.4	. .	. .	7 32.42	6.15	1.10	IV.	3	35.734	24 0.23	2.01	5.00	7 39.67	35 17.2
71	10	. .	. .	30.2	. .	. .	. .	. .	8 30.30	6.15	1.10	III.	3	29.748	30 15.81	1.99	6.04	8 37.55	41 33.8
72	10	. .	. .	. .	. .	4.2	. .	. .	18 8 31.48	+ 6.15	+1.10	V.	3	32.672	−27 12.35	− 1.99	− 5.54	18 8 38.73	− 20 38 29.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c.	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 257	June 20, 18 0	. .	. .	. .	. .	. .	. .	. .	30.168	. .	73.6			
	18 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	72.5			
	18 40	79.32 {33.8 / 32.7	29.2 / 29.8	32.1 / 33.1	31.6 / 33.4	32.4 / 33.7	28.9 / 30.8	} 31.79	30.164	76.8	71.8	77.2	76.	

REMARKS.

(257) 26. Transits discordant. Assumed observation on T. I as $20^s.2$ instead of $26^s.2$, when R. A. differs 20^s from Arg. Z. 211, 78.

(257) 27. Minutes assumed as 9, not 10; and mic. reading as $42^r.187$, not $41^r.187$, to agree with Arg. Z.

(257) 28. Minutes assumed as 9, not 10.

(257) 36. R. A. differs 1^m from Arg. Z. 213, 95; minutes probably 19, not 20.

(257) 42. Minutes assumed as 31, not 32.

(257) 50. Minutes assumed as 45, not 46.

(257) 53. Minutes assumed as 50, not 51.

(257) 57. Minutes assumed as 55, not 56.

(257) 58. Transits over T.'s I and II ass'd as $57^s.3$ and $13^s.8$, not $47^s.3$ and $3^s.8$.

(257) 59. Transit over T. V perhaps belongs to preceding reading; and declination, with 1 mic. rev. in error, to Arg. Z. 310, 7.

(257) 61. R. A. assumed as 17^h 59^m.

(257) 65. R. A. differs 1^m from Arg. Z. 310, 19; minutes probably 3.

(257) 67. Minutes ass'd as 5, not 6, to agree with Arg. Z. 307, 66; 310, 22.

ZONE 257. JUNE 20. C. $D_0 = -20° 11' 10''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
73	9	. .	14.7	. .	47.7	. .	. .	. .	18 11 31.21	+ 6.15	+1.10	IV.	5	53.729	− 5 12.11	− 1.92	− 1.90	18 11 38.46	− 20 16 25.9
74	9.10	. .	. .	6.2	. .	38.8	. .	. .	12 6.15	6.15	1.10	IV.	4	49.508	9 37.39	1.90	2.62	12 13.40	20 51.9
75	9	. .	. .	16.2	32.3	. .	. .	. .	16.01	6.15	1.10	IV.	3	28.041	32 2.97	. .	6.37	14 23.26	43 21.2
76	9.10	. .	37.3	54.1	. .	. .	. .	. .	16 53.94	6.16	1.09	III.	2	20.331	40 6.94	1.77	7.68	17 1.19	51 26.4
77	6	. .	. .	17.3	. .	50.7	. .	. .	16 17.67	6.16	1.10	IV.	3	34.110	25 42.26	1.79	5.26	16 24.93	36 59.3
78	10	. .	. .	4.2	. .	. .	. .	. .	19 4.33	6.16	1.10	III.	1	18.600	41 55.33	1.73	7.98	19 11.59	20 53 15.0
79	8.9	13.7	29.9	46.5	3.4	. .	. .	. .	21 46.58	6.17	1.10	IV.	1	9.665	51 15.85	1.66	9.56	20 53.85	21 2 37.1
80	9	. .	15.5	31.4	48.1	4.3	. .	. .	21 31.64	6.17	1.11	IV.	5	47.588	11 37.69	1.65	2.95	21 38.92	20 22 52.3
81	9	53.5	10.5	26.5	43.5	. .	. .	. .	24 26.67	6.17	1.12	IV.	4	42.325	17 8.19	1.58	3.87	24 33.96	28 23.6
82	10.11	. .	. .	19.5	. .	. .	. .	. .	25 19.47	6.18	1.12	III.	5	47.439	11 47.04	1.56	2.97	25 26.77	23 1.6
83	8	. .	. .	17.3	33.6	49.7	. .	. .	26 17.10	6.18	1.11	IV.	2	14.880	45 48.85	1.53	8.65	26 24.39	57 9.0
84	9	. .	21.4	37.2	. .	. .	. .	. .	27 37.51	6.18	1.13	III.	5	44.748	14 35.75	1.50	3.43	27 44.82	25 50.7
85	9	. .	. .	. .	1.7	18.3	. .	. .	28 45.43	6.18	1.13	IV.	5	52.716	6 15.70	1.46	2.06	28 52.74	17 29.2
86	9.10	18.5	. .	50.8	. .	. .	. .	. .	30 51.03	6.19	1.13	III.	4	45.688	13 36.38	1.40	3.28	30 58.35	24 51.1
87	9.10	. .	. .	10.2	26.5	. .	. .	. .	30 10.08	6.19	1.13	IV.	4	42.998	16 25.76	1.43	3.75	30 17.40	20 27 40.9
88	10	. .	. .	. .	. .	6.5	. .	. .	30 33.69	6.19	1.12	V.	1	10.218	50 41.23	1.41	9.48	30 41.00	21 2 2.1
89	9	. .	. .	. .	. .	. .	. .	. .	31	6.19	1.12	VI.	3	23.451	36 50.79	1.4	7.14	. . .	20 48 9.3
90	10	. .	. .	. .	. .	23.	. .	. .	32 50.28	6.19	1.13	V.	3	33.539	26 18.02	1.34	5.37	32 57.60	37 34.7
91	8	. .	7.6	23.8	. .	56.8	. .	. .	33 23.98	6.19	1.13	IV.	4	43.676	15 43.28	1.33	3.64	33 31.30	26 58.3
92	9.10	. .	. .	. .	. .	. .	. .	. .	34	6.19	1.13	VII.	3	31.940	27 57.78	1.3	5.67	. . .	20 39 14.8
93	9	. .	. .	. .	. .	1.4	. .	. .	34 28.58	6.19	1.12	V.	1	8.673	52 21.82	1.30	9.75	34 35.89	21 3 42.9
94	8.9	41.8	57.7	14.3	31.2	. .	. .	. .	36 14.44	6.20	1.13	IV.	3	23.868	36 24.69	1.23	7.08	36 21.77	20 47 43.0
95	9.10	. .	. .	. .	40.5	56.3	. .	. .	36 23.68	6.20	1.13	IV.	2	16.031	44 36.71	1.23	8.46	36 31.01	55 56.4
96	10	. .	. .	. .	. .	43.8	. .	. .	37 11.01	6.20	1.13	V.	2	16.548	44 4.22	1.21	8.38	37 18.34	55 23.8
97	9.10	. .	. .	. .	12.2	. .	. .	. .	38 55.64	6.20	1.14	IV.	3	34.941	24 49.98	1.15	5.13	39 2.98	36 6.3
98	10	. .	. .	. .	. .	. .	. .	. .	38	6.20	1.14	VI.	3	37.935	21 41.86	1.14	4.62	39	32 57.6
99	8.9	. .	. .	. .	. .	23.8	. .	. .	39 51.12	6.20	1.14	V.	4	44.709	14 38.89	1.13	3.44	38 58.46	25 53.5
100	7	5.8	24.2	38.2	54.9	11.3	. .	. .	18 40 38.45	+ 6.21	+1.14	IV.	4	41.364	−18 8.50	− 1.12	− 4.04	18 40 45.80	− 20 29 23.7

ZONE 258. JUNE 21. S. $D_0 = -18° 53' 20''$.

[The column T for this zone has been computed on the supposition that the transits over T.'s I–V have been recorded as over II–VI, respectively, throughout the zone.]

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	. .	. .	. .	11.	. .	. .	. .	16 11 11.14	+ 6.49	+0.24	.	1	13.818	−46 55.14	− 8.34	−12.70	16 11 17.9	− 19 40 36.2
2	8	. .	. .	. .	. .	. .	45.	. .	11 12.46	6.49	0.24	.	1	13.122	47 39.11	8.34	12.79	11 19.2	41 20.2
3	9	. .	. .	. .	. .	. .	33.	. .	12 16.50	6.49	0.23	.	2	19.842	40 37.75	8.34	11.69	12 23.2	34 17.8
4	6	. .	40.	56.	12.	. .	. .	. .	15 12.35	6.48	0.24	IV.	2	13.543	47 12.64	8.37	12.74	15 19.1	40 53.7
5	10	. .	. .	17.	. .	. .	. .	. .	16 33.23	6.48	0.21	.	3	20.714	35 31.46	8.37	10.90	16 39.9	29 10.7
6	11	. .	14.	. .	47.	. .	. .	. .	23 46.80	6.47	0.22	IV.	4	37.373	22 18.32	8.41	8.77	23 53.5	15 55.5
7	10	. .	20.	36.2	. .	. .	. .	. .	25 52.54	6.47	0.26	III.	2	16.932	43 39.70	8.41	12.16	25 59.3	37 20.3
8	11	. .	13.	29.4	. .	. .	. .	. .	27 45.62	6.47	0.23	III.	3	35.989	23 44.09	8.41	9.00	27 52.3	17 21.5
9	12	. .	. .	. .	34.	. .	. .	. .	31 34.13	6.47	0.27	.	1	20.810	39 36.59	8.42	11.52	31 40.9	33 16.5
10	7	. .	. .	42.5	58.	14.	. .	. .	32 58.12	6.47	0.28	IV.	1	16.099	44 32.20	8.41	12.31	33 4.9	38 12.9
11	10	. .	57.	. .	29.2	. .	. .	. .	35 29.48	6.46	0.28	IV.	2	20.293	40 9.33	8.40	11.61	35 36.2	33 49.3
12	10	. .	19.	35.	51.4	. .	. .	. .	38 51.47	6.46	0.28	IV.	2	18.192	42 21.05	8.40	11.94	38 58.2	36 1.4
13	9	. .	. .	. .	50.	. .	. .	. .	39 50.08	6.46	0.24	.	3	33.379	26 28.18	8.39	9.43	39 56.8	20 6.0
14	9	. .	. .	. .	. .	. .	40.5	. .	40 8.06	6.46	0.25	.	4	41.458	18 3.09	8.39	8.09	40 14.8	11 39.6
15	9	. .	. .	. .	59.5	. .	. .	. .	41 59.63	6.46	0.29	.	2	19.685	40 47.28	8.38	11.72	42 6.4	34 27.4
16	8	. .	. .	11.	27.	. .	. .	. .	43 27.14	6.46	0.23	IV.	5	47.041	12 11.90	8.37	7.18	43 33.8	5 47.5
17	9	. .	. .	44.	0.2	. .	. .	. .	16 45 0.25	+ 6.46	+0.23	IV.	5	49.212	− 9 55.77	− 8.35	− 6.80	16 45 6.9	− 19 3 30.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 258	June 21, 16 0	78 14 60.	54.1	58.5	54.3	55.8	55.	56.28	30.164	83.	81.5	79.5	83.5	81.
	16 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	[a]81.2			
	16 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	77.2			
	17 0	. .	. .	. .	. .	. .	. .	. .	30.156	81.9	76.8			
	17 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	75.8			
	17 40	60.5	54.1	58.5	54.3	55.3	54.5	56.20	. .	. .	75.4			
	18 0	. .	. .	. .	. .	. .	. .	. .	30.154	79.9	75.2			
	18 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.9			
	18 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	74.8			

REMARKS.

(257) 75. Minutes assumed as 14.
(257) 79. Minutes assumed as 20, not 21.
(257) 82. Right ascension differs 36ˢ from Arg. Z. 310, 56.
(257) 85. Right ascension differs 1ᵐ from Arg. Z. 310, 61; minutes probably 27, not 28.
(257) 90. Right ascension differs 1ᵐ from Arg. Z. 310, 67; and minutes probably 31, not 32.
(257) 91. Transit over T. V assumed to have been recorded over T. IV.
(257) 99. Minutes assumed as 38, not 39.
(258) 3. Transit over T. IV assumed to have been recorded over T. VI.
(258) 5. Micrometer reading assumed as 24ʳ.714, not 20ʳ.714, to agree with Arg. Z. 211, 25, and 305, 25.
(258) 13. Right ascension differs 17ˢ from Arg. Z. 300, 53; transit over T. II perhaps recorded over T. III.

[a] Used as 79°.2.

ZONE 258. JUNE 21. S. $D_0 = -18° 53' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	' ''	''	''	h. m. s.	° ' ''
18	10	. .	. .	. .	. .	44.5	61.	. .	16 46 28.31	+ 6.46	+0.27	.	3	36.898	−22 47.19	− 8.35	− 8.85	16 46 35.0	− 19 16 24.4
19	8	. .	. .	52.	8.5	. .	. .	. .	48 8.40	6.46	0.27	IV.	3	35.549	24 11.96	8.33	9.08	48 15.1	17 49.4
20	9	. .	. .	. .	. .	. .	29.3	. .	48 56.78	6.46	0.30	.	2	20.980	39 26.42	8.33	11.49	49 3.5	33 6.2
21	10	. .	. .	. .	. .	. .	53.8	. .	50 21.36	6.45	0.27	.	4	41.420	18 5.55	8.32	8.10	50 28.1	11 42.0
22	7	. .	51.2	7.2	23.3	. .	. .	. .	54 23.53	6.45	0.28	IV.	3	37.078	22 35.96	8.28	8.82	54 30.3	16 13.1
23	11	. .	. .	. .	6.	. .	. .	. .	57 6.13	6.45	0.32	.	2	19.602	40 52.54	8.24	11.74	57 12.9	34 32.5
24	.	. .	. .	. .	11.	. .	. .	. .	58 11.06	6.45	0.30	.	3	35.651	24 5.50	8.23	9.04	58 17.8	17 42.8
25	8	. .	. .	. .	. .	47.	. .	. .	16 58 30.62	6.45	0.27	.	4	47.900	11 18.11	8.23	7.03	16 58 37.3	4 53.4
26	9	. .	. .	. .	. .	. .	44.	. .	17 0 11.50	6.45	0.32	.	3	25.058	35 10.04	8.21	10.83	17 0 18.3	28 49.1
27	7.8	. .	. .	. .	. .	35.	51.	. .	1 18.57	6.45	0.29	V.	4	38.810	20 48.58	8.20	8.53	1 25.3	14 25.3
28	11	. .	. .	. .	12.5	. .	. .	. .	5 12.47	6.45	0.29	.	5	47.872	11 19.62	8.14	7.03	5 19.2	4 54.8
29	9	. .	. .	15.8	32.	. .	. .	. .	7 32.05	6.45	0.29	IV.	4	43.202	16 12.47	8.11	7.79	7 38.8	9 48.4
30	11	. .	20.	36.	. .	. .	. .	. .	9 52.41	6.45	0.29	.	4	47.630	11 34.43	8.07	7.07	9 59.1	5 9.6
31	8.7	. .	6.8	23.	39.	. .	. .	. .	11 39.21	6.45	0.31	IV.	4	42.903	16 31.10	8.05	7.84	11 46.0	10 7.0
32	9.8	. .	. .	20.	. .	. .	. .	. .	13 36.22	6.45	0.35	.	3	26.285	33 53.13	8.01	10.62	13 43.0	27 31.8
33	9	. .	. .	2.8	. .	. .	51.5	. .	14 19.05	6.45	0.33	III.	4	35.448	24 19.05	8.01	9.08	14 25.8	17 56.1
34	9	. .	57.8	14.2	. .	. .	. .	. .	16 30.44	6.45	0.37	III.	2	18.232	42 18.35	7.96	11.96	16 37.3	35 58.3
35	10	. .	. .	. .	. .	7.5	. .	. .	16 51.09	6.45	0.32	.	4	43.732	15 39.70	7.96	7.70	16 57.8	9 15.4
36	11	. .	. .	. .	. .	2.5	. .	. .	18 46.12	6.45	0.32	.	4	47.514	11 42.34	7.93	7.09	18 52.9	5 17.4
37	9	. .	13.	29.6	45.5	. .	. .	. .	20 45.67	6.45	0.35	IV.	3	32.695	27 10.91	7.90	9.54	20 52.5	20 48.3
38	9	. .	. .	. .	40.	. .	. .	. .	21 40.11	6.45	0.37	.	3	27.650	32 27.57	7.89	10.38	21 46.9	26 5.8
39	9	. .	40.	56.	. .	28.	. .	. .	25 12.15	6.46	0.32	III.	5	48.848	10 18.17	7.82	6.84	25 18.9	3 52.8
40	10	. .	20.3	36.2	. .	. .	25.	. .	29 52.62	6.46	0.38	III.	3	27.083	33 2.95	7.73	10.49	29 59.5	26 41.2
41	10	. .	47.2	3.5	19.5	. .	. .	. .	32 19.71	6.46	0.37	IV.	3	30.310	29 40.74	7.69	9.95	32 26.5	23 18.4
42	11	. .	. .	. .	. .	. .	43.	. .	34 10.51	6.46	0.39	.	3	27.949	32 8.61	7.65	10.34	34 17.3	25 46.6
43	9	. .	9.	25.	41.	. .	. .	. .	39 41.36	6.46	0.43	IV.	1	11.152	49 42.47	7.54	13.18	39 48.2	43 23.2
44	9	. .	11.	. .	. .	. .	. .	. .	42 43.67	6.46	0.44	.	2	10.802	50 3.86	7.48	13.24	42 50.6	43 44.6
45	7	. .	. .	. .	49.5	6.	. .	. .	42 49.57	6.46	0.41	IV.	3	25.278	34 56.43	7.48	10.80	42 56.4	28 34.7
46	8	. .	. .	. .	. .	. .	55.	. .	43 22.59	6.47	0.36	.	5	48.224	10 56.78	7.45	6.95	43 29.4	4 31.2
47	8.9	. .	. .	. .	22.	. .	. .	. .	46 22.04	6.47	0.40	I.	3	37.680	21 58.12	7.40	8 71	46 28.9	15 34.2
48	10	. .	23.	. .	55.2	. .	. .	. .	47 55.42	6.47	0.40	IV.	3	34.984	24 47.28	7.37	9.16	48 2.3	18 23.8
49	10	. .	. .	. .	. .	. .	18.5	. .	48 46.01	6.47	0.42	.	3	28.188	31 53.81	7.34	10.32	48 52.9	25 31.5
50	9	. .	. .	10.5	. .	. .	. .	. .	51 26.81	6.47	0.39	.	4	45.190	14 7.64	7.28	7.45	51 33.7	7 42.4
51	10	. .	. .	. .	. .	57.5	14.	. .	51 41.22	6.47	0.45	V.	2	12.695	48 5.95	7.28	12.92	51 48.1	41 46.2
52	6	. .	. .	. .	. .	11.	27.2	. .	52 54.70	6.47	0.39	V.	5	47.042	12 11.84	7.24	7.15	53 1.6	5 46.2
53	9	. .	. .	45.8	2.	. .	. .	. .	55 2.07	6.48	0.44	IV.	3	26.373	33 47.74	7.19	10.61	55 9.0	27 25.5
54	11	. .	. .	56.	. .	. .	. .	. .	56 12.23	6.48	0.45	.	2	18.930	41 34.38	7.17	11.86	56 19.2	35 13.4
55	8	. .	. .	. .	. .	49.2	. .	. .	56 32.67	6.48	0.47	.	1	9.058	51 53.90	7.16	13.55	56 39.6	45 34.6
56	10	. .	. .	. .	. .	. .	57.	. .	57 57.14	6.48	0.47	.	1	11.590	49 15.18	7.14	13.12	57 4.1	19 42 55.4
57	9	. .	. .	36.	. .	. .	. .	. .	17 59 52.36	6.48	0.39	.	5	53.012	5 56.86	7.08	6.15	17 59 59.2	18 59 30.1
58	8	. .	. .	. .	38.	54.	. .	. .	18 0 37.82	6.48	0.44	IV.	3	31.042	28 54.62	7.07	9.83	18 0 44.7	19 22 31.5
59	10	. .	4.5	. .	. .	. .	. .	. .	2 37.13	6.49	0.45	.	5	25.990	34 12.20	7.02	10.68	2 44.1	31 49.9
60	8	. .	. .	59.2	. .	28.3	. .	. .	3 15.62	6.49	0.45	III.	3	26.135	34 2.42	7.01	10.62	3 22.6	27 40.0
61	10	. .	. .	38.	. .	. .	. .	. .	4 54.34	6.49	0.40	.	5	51.203	7 50.55	6.97	6.44	5 1.2	1 24.0
62	9	. .	. .	21.	. .	. .	. .	. .	5 37.33	6.49	0.41	.	4	47.208	12 0.99	6.95	7.12	5 44.2	19 5 35.1
63	7	. .	. .	3.5	. .	. .	. .	. .	6 3.46	6.49	0.40	.	5	53.580	5 21.27	6.93	6.07	6 10.4	18 58 54.3
64	8	. .	. .	. .	. .	. .	52.3	. .	6 19.89	6.49	0.41	.	5	50.745	8 19.35	6.93	6.51	6 26.8	19 1 52.8
65	9	. .	. .	. .	. .	45.	. .	. .	7 28.64	6.49	0.41	.	5	51.623	7 24.37	6.90	6.37	7 35.5	0 57.6
66	7	. .	. .	. .	. .	. .	34.5	. .	18 8 2.09	+ 6.49	+0.42	.	5	51.779	− 7 14.51	− 6.89	− 6.35	18 8 9.0	− 19 0 47.7

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ' ''	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ' ''						''	in.	°	°	°	°	°
Zone 258	June 21,	19 0	. .	. .	. .	. .	. .	. .	. .	30.150	79.	74.2			
		19 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	73.9			
		19 30	78 14 60.5	54.1	58.5	55.8	55.8	54.5	56.53						

REMARKS.

(258) 41. Declination differs 1' from Arg. Z. 211, 107.

(258) 56. Transit over T. III assumed as recorded over T. V; and minutes as 56, not 57.

(258) 60. Time of transit over T. III assumed as 32ˢ.3 instead of 28ˢ.3.

(258) 63. Transit over T. III assumed as recorded over T. II, to agree with Arg. Z. 218, 50; 219, 42; 227, 21; and 391, 129.

ZONE 258. JUNE 21. S. $D_0 = -18° 53' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r	′ ″	″	″	h. m. s.	° ′ ″
67	9	. .	. .	45.2	. .	. .	. .	. .	18 12 1.44	+ 6.50	+0.52	.	1	11.468	−49 22.39	− 6.79	−13.14	18 12 8.5	− 19 43 2.3
68	9	. .	32.3	49.	. .	. .	. .	. .	15 5.07	6.50	0.49	III.	3	25.869	34 18.98	6.71	10.70	15 12.1	27 56.4
69	10	. .	. .	. .	. .	26.	. .	. .	15 9.48	6.50	0.51	.	1	15.356	45 19.06	6.71	12.47	15 16.5	38 58.2
70	10	. .	42.5	59.5	. .	. .	47.5	. .	18 15.31	6.51	0.44	III.	5	50.470	8 36.55	6.62	6.54	18 22.3	2 9.7
71	11	. .	. .	. .	. .	. .	32.5	. .	18 0.09	6.51	0.45	.	4	47.653	11 34.24	6.63	7.00	18 7.1	5 7.8
72	8	. .	. .	11.	. .	. .	. .	. .	22 27.27	6.51	0.47	.	3	37.813	21 49.59	6.51	8.67	22 34.3	15 24.8
73	7	. .	. .	. .	56.	. .	. .	. .	22 56.02	6.51	0.47	.	3	39.672	19 53.19	6.50	8.37	23 3.0	13 28.1
74	9	. .	. .	. .	. .	32.	. .	. .	23 15.58	6.51	0.47	.	3	39.852	19 41.82	6.49	8.34	23 22.6	13 16.6
75	8	. .	53.	10.	. .	32.	. .	. .	26 25.79	6.52	0.49	IV.	2	30.730	29 14.39	6.41	9.88	26 32.8	22 50.7
76	9	. .	. .	45.	. .	. .	. .	. .	28 1.27	6.52	0.48	.	3	30.783	21 51.46	6.36	8.68	28 8.3	15 26.5
77	8	. .	. .	. .	. .	26.	. .	. .	28 9.55	6.52	0.49	.	3	33.789	26 2.27	6.36	9.37	28 16.6	19 38.0
78	9	. .	. .	40.	. .	. .	. .	. .	30 56.28	6.53	0.49	.	4	39.380	20 18.59	6.29	8.41	31 3.3	13 53.3
79	10	. .	. .	58.5	. .	. .	. .	. .	32 14.73	6.53	0.54	.	2	18.388	42 8.64	6.25	11.98	32 21.8	35 46.9
80	8	. .	25.3	41.	57.5	. .	. .	. .	33 57.58	6.53	0.51	IV.	3	28.388	31 41.33	6.20	10.29	34 4.6	25 17.8
81	10	. .	. .	. .	. .	37.	. .	. .	34 20.54	6.53	0.52	.	3	31.525	28 22.51	6.19	9.74	34 27.6	22 0.4
82	8.7	. .	. .	. .	. .	27.8	. .	. .	35 11.32	6.53	0.53	.	3	26.078	34 6.12	6.16	10.67	35 18.4	27 42.9
83	10	. .	. .	. .	. .	. .	17.	. .	35 44.50	6.54	0.53	.	3	25.631	34 34.17	6.14	10.75	35 51.6	28 11.1
84	7	. .	. .	. .	2.8	. .	. .	. .	37 2.96	6.54	0.57	.	1	9.122	51 49.78	6.11	13.55	37 10.1	45 29.4
85	7.8	. .	44.5	. .	16.3	. .	. .	. .	39 16.75	6.54	0.52	IV.	3	32.075	27 49.88	6.04	9.65	39 23.8	21 25.6
86	7	. .	6.2	. .	. .	. .	. .	. .	40 38.79	6.54	0.52	.	3	35.053	24 42.64	6.00	9.14	40 45.8	18 17.8
87	8	. .	. .	. .	. .	56.	. .	. .	40 39.62	6.54	0.49	.	4	48.480	10 41.89	6.00	6.90	40 46.6	4 14.8
88	9	. .	. .	. .	. .	47.5	. .	. .	41 31.02	6.55	0.54	.	3	25.920	34 15.97	5.97	10.69	41 38.1	27 52.6
89	10	. .	. .	44.2	0.5	. .	. .	. .	44 0.50	6.55	0.53	IV.	3	35.703	24 2.17	5.90	9.03	44 7.6	17 37.1
90	9	. .	. .	7.	23.	. .	. .	. .	46 23.15	6.56	0.51	.	4	43.353	16 3.05	5.83	7.75	46 30.2	9 36.6
91	7.8	. .	7.	23.	39.	. .	12.2	. .	48 39.41	6.56	0.54	IV.	3	32.753	27 7.26	5.76	9.54	48 46.5	20 42.6
92	7.8	. .	. .	10.6	26.6	43.	. .	. .	50 26.69	6.57	0.56	IV.	3	25.243	34 58.57	5.71	10.81	50 33.8	28 35.1
93	9	. .	. .	. .	. .	20.	. .	. .	51 3.52	6.57	0.57	.	3	23.692	36 35.80	5.69	11.08	51 10.7	30 12.6
94	9	. .	. .	. .	8.	. .	. .	. .	52 8.13	6.57	0.57	.	3	20.912	39 30.05	5.66	11.54	52 15.3	33 7.2
95	7	. .	35.	51.	. .	. .	. .	. .	54 7.42	6.57	0.57	III.	3	26.383	33 46.99	5.59	10.63	54 14.6	27 23.2
96	7	. .	. .	. .	11.	27.	. .	. .	54 10.81	6.57	0.55	.	3	34.518	25 16.66	5.59	9.22	54 17.9	18 51.5
97	9	. .	. .	44.2	0.2	. .	. .	. .	57 0.40	6.58	0.62	IV.	1	12.263	48 32.84	5.50	13.04	57 7.6	42 11.4
98	11	. .	8.	. .	. .	. .	. .	. .	58 40.65	6.59	0.61	.	2	17.980	42 33.72	5.44	12.04	58 47.8	36 11.2
99	5.6	. .	. .	. .	20.5	37.	. .	. .	18 59 20.57	6.59	0.59	IV.	3	22.760	37 34.20	5.42	11.24	18 59 27.7	31 10.9
100	10	. .	. .	. .	33.5	. .	. .	. .	19 0 33.64	6.59	0.61	.	2	15.603	45 3.37	5.38	12.45	19 0 40.8	38 41.2
101	9	. .	. .	. .	50.	. .	. .	. .	2 50.11	6.60	0.59	.	3	27.838	32 15.58	5.30	10.38	2 57.3	25 51.3
102	9	. .	. .	33.	50.	. .	. .	. .	3 49.67	6.60	0.60	IV.	3	25.295	34 55.37	5.27	10.81	3 56.9	28 31.4
103	10	. .	. .	. .	. .	46.5	. .	. .	4 30.11	6.60	0.56	.	5	46.719	12 32.12	5.25	7.16	4 37.3	6 4.5
104	10	. .	. .	34.	. .	. .	23.	. .	5 50.42	6.60	0.57	.	4	39.455	20 7.67	5.20	8.40	5 57.6	13 41.3
105	10	. .	13.8	30.	. .	. .	. .	. .	7 46.35	6.61	0.62	III.	2	15.082	45 35.86	5.14	12.54	7 53.6	39 13.5
106	7.6	. .	. .	28.2	. .	. .	. .	. .	8 44.48	6.61	0.58	.	4	40.245	19 18.04	5.11	8.26	8 51.7	12 51.4
107	8	. .	. .	1.	. .	. .	. .	. .	9 17.34	6.61	0.55	.	5	49.245	9 53.44	5.09	6.72	9 24.5	3 25.2
108	10	. .	. .	. .	. .	. .	41.3	. .	9 8.82	6.61	0.60	.	3	29.390	30 38.46	5.09	10.10	9 16.0	24 13.6
109	9	. .	. .	46.3	. .	. .	. .	. .	11 4.54	6.62	0.64	.	2	16.061	44 34.46	5.03	12.37	11 11.8	38 11.9
110	10	. .	. .	. .	35.	. .	. .	. .	11 35.04	6.62	0.60	.	4	37.150	22 32.26	5.01	8.77	11 42.3	16 6.0
111	6.7	. .	. .	26.	. .	. .	. .	. .	12 42.22	6.62	0.62	.	3	26.290	37 1.05	4.97	11.40	12 49.5	30 37.4
112	10	. .	. .	. .	9.5	. .	. .	. .	13 9.60	6.62	0.61	.	3	29.622	30 23.78	4.95	10.06	13 16.8	23 58.8
113	10	. .	. .	. .	. .	57.8	. .	. .	13 41.36	6.62	0.58	.	3	35.248	24 30.91	4.94	9.10	13 48.6	18 5.0
114	10	. .	. .	20.3	. .	. .	. .	. .	15 36.58	6.63	0.59	.	3	40.302	19 13.64	4.87	8.25	15 43.8	12 46.8
115	11	. .	. .	. .	. .	27.	. .	. .	19 16 10.55	+ 6.63	+0.61	.	3	32.988	−26 52.58	− 4.84	− 9.49	19 16 17.8	− 19 20 26.9

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(258) 74. Declination differs 10ˢ from Arg. Z. 227, 51; micrometer reading perhaps $39^r.752$, not $39^r.852$.

(258) 75. Time of transit over T. V assumed as 42^s instead of 32^s.

(258) 105. Declination differs 5′ 15″ from Arg. Z. 227, 117; micrometer reading probably $20^r.082$, not $15^r.082$.

(258) 109. Transit over T. II assumed as $48^s.3$, not $46^s.3$, to agree with Meridian Circle Z., August 25, 1849, and Transit August 14, 1848.

(258) 111. Micrometer reading assumed as $23^r.290$, not $26^r.290$.

ZONE 258. JUNE 21. S. $D_0 = -18° 53' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
116	11	. .	. .	. .	. .	. .	20.5	. .	19 16 48.00	+ 6.63	+0.63	.	3	26.030	−34 9.07	− 4.82	−10.69	19 16 55.3	− 19 27 44.6
117	10	. .	36.	52.3	. .	. .	. .	. .	19 8.60	6.64	0.65	III.	2	15.813	44 49.89	4.74	12.41	19 15.9	38 27.0
118	11	. .	. .	. .	. .	. .	27.5	. .	18 55.09	6.64	0.57	.	5	48.833	10 19.30	4.75	6.78	19 2.3	3 50.8
119	10	. .	. .	. .	34.5	. .	. .	. .	20 34.50	6.64	0.60	.	4	43.509	15 53.25	4.69	7.71	20 41.7	9 25.6
120	10	. .	. .	. .	. .	31.5	. .	. .	21 14.98	6.64	0.66	.	2	12.948	47 50.01	4.66	12.93	21 22.3	41 27.6
121	9	. .	. .	31.8	. .	. .	. .	. .	22 48.04	6.65	0.66	.	2	12.619	48 10.34	4.61	12.99	22 55.3	41 47.9
122	11	. .	. .	36.8	53.	. .	. .	. .	24 53.05	6.65	0.61	IV.	4	42.379	17 4.17	4.53	7.86	25 0.3	10 36.6
123	10	. .	48.5	5.	21.	. .	. .	. .	26 21.10	6.66	0.58	IV.	4	47.290	11 55.95	4.48	7.08	26 28.3	5 27.5
124	7	. .	. .	17.	34.	50.8	. .	. .	19 27 33.89	+ 6.66	+0.62	IV.	4	42.260	−17 11.65	− 4.42	− 7.92	19 27 41.2	− 19 10 44.0

ZONE 259. JUNE 22. C. $D_0 = -20° 8' 40'$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.10	. .	32.2	48.3	3.6	21.	. .	. .	15 3 48.06	+ 6.85	+0.92	IV.	3	24.735	−35 29.18	− 0.20	− 6.89	15 3 55.83	− 20 44 16.3
2	10	. .	. .	. .	. .	28.?	. .	. .	4 55.32	6.84	0.84	V.	5	45.596	13 42.59	0.22	3.37	5 3.00	22 26.2
3	9.10	30.1	45.2	2.	18.2	34.7	. .	. .	7 2.04	6.84	0.83	IV.	5	45.360	13 57.59	0.26	3.41	7 9.71	22 41.3
4	8.9	2.4	18.5	35.2	51.7	. .	. .	. .	9 35.12	6.83	0.80	IV.	5	49.430	9 42.14	0.30	2.75	9 42.75	18 25.2
5	8.9	. .	. .	. .	14.2	30.3	. .	. .	10 57.61	6.83	0.86	IV.	3	35.415	24 20.43	0.32	5.09	11 5.30	33 5.8
6	8.9	. .	. .	4.2	20.7	36.3	. .	. .	11 4.00	6.83	0.80	IV.	5	48.782	10 22.57	0.32	2.84	11 11.63	19 5.7
7	10	. .	7.7	24.3	. .	56.5	. .	. .	15 24.09	6.82	0.79	IV.	5	49.495	9 38.06	0.38	2.71	15 31.70	18 21.2
8	8	44.8	0.7	17.3	14.1	30.6	. .	. .	17 17.50	6.81	0.91	IV.	2	18.392	42 8.76	0.40	7.97	17 25.22	50 57.1
9	9.10	. .	. .	19.5	. .	52.4	. .	. .	18 19.59	6.81	0.76	IV.	5	55.051	3 49.12	0.41	1.79	18 27.16	12 31.3
10	8	. .	. .	30.5	46.7	3.3	. .	. .	19 30.43	6.81	0.87	IV.	3	27.856	32 14.52	0.43	6.37	19 38.11	41 1.3
11	8	16.3	32.5	49.2	. .	. .	. .	. .	22 49.04	6.80	0.76	III.	5	55.096	3 46.29	0.46	1.78	21 56.60	12 28.5
12	9	46.7	3.5	19.8	36.1	52.5	. .	. .	25 19.72	6.80	0.88	IV.	2	21.069	39 20.71	0.48	7.52	25 27.40	48 8.7
13	9.10	. .	. .	23.	38.7	. .	. .	. .	26 22.59	6.80	0.80	IV.	4	38.299	21 20.84	0.49	4.60	26 30.19	30 5.9
14	10	. .	. .	26.8	. .	0.2	. .	. .	28 27.17	6.79	0.89	V.	2	14.423	46 17.82	0.51	8.65	28 34.85	55 7.0
15	7	. .	. .	. .	. .	. .	. .	. .	30	6.79	0.80	VII.	4	37.438	22 15.85	0.53	4.74	30	31 1.1
16	9	. .	. .	. .	6.5	23.5	. .	. .	31 50.37	6.78	0.80	IV.	4	36.986	22 43.04	0.54	4.81	30 57.95	31 28.4
17	10	55.5	. .	. .	45.	1.4	. .	. .	34 28.48	6.78	0.82	IV.	3	30.728	29 14.32	0.55	5.88	34 36.08	38 0.7
18	8	6.4	22.4	39.	55.8	11.5	. .	. .	38 39.02	6.77	0.83	IV.	3	23.258	37 3.15	0.58	7.15	38 46.62	45 50.9
19	9	. .	37.6	54.1	10.5	27.1	. .	. .	40 54.10	6.76	0.83	IV.	3	23.886	36 23.56	0.59	7.04	41 1.69	20 45 11.2
20	8.9	. .	. .	3.1	19.4	36.	. .	. .	41 3.06	6.76	0.88	IV.	1	8.108	52 53.48	0.59	9.74	41 10.70	21 1 43.8
21	8.9	. .	. .	. .	. .	11.8	. .	. .	41 39.12	6.76	0.72	V.	5	44.891	14 26.71	0.59	3.48	41 46.60	20 23 10.8
22	9.10	23.9	40.5	56.6	. .	29.5	. .	. .	46 56.75	6.75	0.72	IV.	5	45.781	13 30.91	0.60	3.31	47 4.22	22 14.8
23	9.10	. .	55.5	. .	28.1	44.1	. .	. .	46 11.66	6.75	0.71	IV.	5	47.262	11 58.15	0.60	3.08	46 19.12	20 41.8
24	9	. .	. .	29.5	46.3	. .	. .	. .	47 29.63	6.75	0.70	IV.	5	48.011	11 11.01	0.60	2.95	47 37.08	19 54.6
25	6.7	. .	31.1	47.2	3.5	. .	. .	. .	49 47.23	6.75	0.76	IV.	3	35.877	23 51.26	0.61	5.01	48 54.74	32 36.9
26	8	. .	. .	. .	53.8	. .	. .	. .	49 37.26	6.75	0.74	IV.	4	40.876	18 38.94	0.61	4.17	49 44.75	27 23.7
27	8.9	. .	. .	. .	23.	39.5	. .	. .	50 6.60	6.75	0.77	IV.	3	33.667	26 9.99	0.61	5.37	50 14.12	34 56.0
28	8	39.2	55.5	11.5	28.2	44.4	. .	. .	52 11.76	6.74	0.79	IV.	3	25.372	34 50.54	0.61	6.80	52 19.29	43 37.9
29	10	. .	. .	. .	. .	45.3	. .	. .	53 12.63	6.74	0.69	V.	5	48.083	11 6.43	0.61	2.93	53 20.06	19 50.0
30	9	28.8	45.3	1.3	18.4	34.2	. .	. .	56 1.60	6.74	0.72	IV.	4	39.347	20 14.83	0.61	4.42	56 9.06	28 59.9
31	10	. .	. .	. .	15.7	32.5	. .	. .	57 59.43	6.74	0.77	IV.	3	24.554	35 41.79	0.61	6.94	58 6.94	44 29.3
32	4	. .	12.3	29.3	45.3	2.3	. .	. .	58 29.10	6.74	0.71	IV.	4	40.700	18 50.00	0.61	4.18	58 36.55	27 34.8
33	9	. .	. .	. .	47.3	4.5	. .	. .	58 31.26	6.74	0.73	IV.	3	36.466	23 14.48	0.61	4.89	58 38.73	32 0.0
34	9.10	. .	. .	. .	. .	13.3	. .	. .	15 59 40.63	6.73	0.69	V.	4	46.818	12 26.46	0.61	3.14	15 59 48.05	21 10.2
35	9.10	. .	. .	. .	57.3	14.	. .	. .	16 0 41.10	6.73	0.65	IV.	5	54.800	4 4.81	0.61	1.80	16 0 48.48	12 47.2
36	9.10	. .	38.3	. .	. .	28.	. .	. .	16 3 54.95	+ 6.73	+0.74	IV.	3	28.625	−31 26.40	− 0.60	− 6.23	16 4 2.42	− 20 40 13.2

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
			° ′ ″						″	in.	°	°	°	°	°
Zone 259	1849. June 22,	h. m. 15 0	79 29 64.6	57.1	61.1	58.1	57.9	59.5	59.72	30.070	84.5	80.4	81.7	84.	82.2
		15 20	. .	. .	. .	. .	. .	. .	. .	. .	. .	79.4			
		15 40	. .	. .	. .	. .	. .	. .	. .	. .	. .	78.7			
		16 0	. .	. .	. .	. .	. .	. .	. .	30.070	82.7	78.2			
		16 20	63.8	57.3	61.0	58.9	57.7	59.1	59.63	30.072	82.5	77.9	. .	83.	81.5

REMARKS.

(259) 1. Right ascen. differs 1^m from Arg. Z. 385, 42; min. probably 2.

(259) 2. Right ascension differs 1^m from Arg. Z. 208, 41; minutes perhaps 3, and transit over T. V 25^s, not 28^s.

(259) 5. Right ascen. differs 1^m from Arg. Z. 208, 52; min. probably 9.

(259) 8. Assumed the transits over T.'s IV and V as 34^s.1 and 50^s.6 instead of 14^s.1 and 30^s.6, respectively.

(259) 11. Minutes assumed as 21, not 22, to agree with Arg. Z. 208, 66; 385, 69.

(259) 16. Assumed the minutes as 30 instead of 31.

(259) 22. Right ascension differs 1^m from Arg. Z. 208, 99.

(259) 25. Minutes assumed as 48, not 49.

(259) 27. Declination differs 10′ from Arg. Z. 208, 84.

(259) 31. Right ascen. differs 1^m from Arg. Z. 209, 94; min. probably 56.

ZONE 259. JUNE 22. C. $D_\circ = -20° 8' 40''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
37	9.10	..	..	..	..	32.5	..	..	16 3 59.75	+ 6.73	+0.76	IV.	3	26.289	−33 53.00	− 0.60	− 6.64	16 4 7.24	− 20 42 40.2
38	8	..	..	44.2	0.3	..	..	..	5 44.00	6.73	0.82	IV.	1	8.976	51 58.98	0.59	9.61	5 51.55	21 0 49.2
39	7	..	..	32.5	49.	5.4	..	..	5 32.56	6.73	0.76	IV.	3	25.721	34 28.45	0.60	6.74	5 40.05	20 43 15.8
40	7.8	..	44.8	..	17.5	34.4	..	..	8 1.21	6.72	0.80	IV.	2	13.934	46 48.17	0.59	8.75	8 8.73	55 37.5
41	9	..	..	..	..	32.3	..	..	11 59.61	6.72	0.67	V.	5	43.282	16 7.88	0.57	3.75	11 7.00	24 52.2
42	10.11	..	..	54.2	..	..	..	..	22 54.33	6.71	0.74	III.	1	18.904	41 36.13	0.49	7.89	23 1.78	50 24.5
43	10	..	7.2	..	..	59.	..	..	23 23.96	6.71	0.66	IV.	4	40.871	18 39.19	0.49	4.16	23 31.33	27 23.8
44	9	..	..	28.	44.3	1.2	..	..	23 28.09	6.71	0.63	IV.	5	42.611	16 49.99	0.49	3.86	23 35.43	25 24.3
45	10.11	..	..	..	..	50.2	..	..	27 17.44	6.70	0.71	V.	2	21.542	38 51.11	0.46	7.45	27 24.85	47 39.0
46	9.10	..	..	..	..	59.2	..	..	28 26.56	6.70	0.57	V.	5	55.027	3 50.56	0.45	1.77	28 33.83	20 12 32.8
47	9	27.3	43.1	0.3	..	33.4	..	..	16 (?33) 0.19	+ 6.70	+0.78	IV.	1	6.745	−54 18.89	− 0.40	−10.00	16 33 7.67	− 21 3 9.3

ZONE 260. JUNE 22. C. $D_\circ = -19° 33' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9.10	..	42.	58.2	..	..	..	..	16 58 58.27	+ 6.68	+0.90	III.	5	48.550	−10 37.25	− 5.37	− 6.86	16 58 5.8	− 19 44 19.5
2	8.9	..	..	..	48.2	5.3	..	..	16 59 32.20	6.68	0.93	IV.	3	32.710	27 10.03	5.37	9.54	16 59 39.8	20 0 54.9
3	7.8	..	46.2	2.5	..	35.7	..	..	17 2 2.73	6.68	1.00	IV.	1	7.424	53 36.49	5.33	13.86	17 2 10.4	27 25.7
4	7.8	..	..	21.3	37.5	54.3	..	..	2 21.34	6.68	0.96	IV.	3	20.270	40 10.58	5.33	11.66	2 29.0	13 57.6
5	10	45.3	..	17.9	34.1	..	..	..	4 17.89	6.68	1.00	IV.	2	10.498	50 23.85	5.30	13.33	4 25.5	20 24 12.5
6	9	22.2	..	54.2	11.	27.3	..	..	6 54.57	6.68	0.90	IV.	5	51.671	7 21.36	5.26	6.32	7 2.2	19 41 2.9
7	10.11	..	..	..	..	..	..	..	6	6.68	0.95	VI.	3	28.135	31 56.95	5.26	10.31	7	20 5 42.5
8	10	..	29.7	..	..	..	..	..	9 46.00	6.68	0.98	II.	2	22.212	38 8.70	5.21	11.33	9 53.7	11 55.2
9	10	..	..	..	7.2	23.4	..	..	10 50.68	6.68	0.97	IV.	1	14.408	46 18.51	5.20	12.65	9 58.3	20 6.4
10	10	..	..	..	..	33.3	..	..	10 0.62	6.68	1.01	V.	1	10.376	50 31.44	5.21	13.35	10 8.3	20 24 20.0
11	9	..	..	..	17.4	..	..	..	11 0.94	6.68	0.93	IV.	5	43.946	15 26.08	5.19	7.63	11 8.6	19 49 8.9
12	10	..	..	2.2	..	35.2	..	..	12 2.44	6.68	0.99	IV.	2	15.761	44 53.59	5.18	12.43	12 10.1	20 18 41.2
13	10	..	..	5.2	21.6	37.7	..	..	12 5.13	6.68	0.99	IV.	2	14.738	45 57.74	5.18	12.59	12 12.8	19 45.5
14	8.9	..	..	41.2	..	13.5	..	..	13 41.10	6.68	0.96	IV.	3	29.272	30 45.86	5.15	10.12	13 48.7	4 31.1
15	8.9	..	..	55.2	12.5	..	..	..	14 55.64	6.68	0.97	IV.	3	29.879	30 7.59	5.13	10.02	15 3.3	3 52.7
16	10	..	..	40.	..	13.4	..	..	15 40.44	6.68	1.02	IV.	2	11.808	43 47.82	5.12	12.23	15 48.1	20 17 35.2
17	10	..	..	..	..	42.5	..	..	16 9.93	6.68	0.96	V.	4	36.664	24 6.62	5.11	8.86	16 17.6	19 57 50.6
18	10	..	..	..	37.2	..	..	..	18 20.61	6.68	1.03	IV.	1	11.681	49 9.35	5.07	13.12	18 28.3	20 22 57.5
19	10	..	..	..	..	54.3	..	..	19 21.66	6.68	1.00	V.	3	20.252	40 11.64	5.05	11.66	19 29.3	13 58.3
20	9.10	5.3	21.6	37.3	..	..	..	..	25 37.80	6.68	1.00	III.	3	23.381	36 55.44	4.95	11.13	25 45.5	20 10 41.5
21	10	0.5	..	33.2	..	..	..	..	26 33.16	6.68	0.96	III.	5	45.557	13 45.10	4.93	7.36	26 40.8	19 47 27.4
22	10	..	..	..	..	25.3	..	..	27 52.67	6.68	1.00	V.	3	23.022	37 17.77	4.90	11.19	28 0.4	20 11 3.9
23	9.10	..	..	..	52.3	..	..	..	27 35.80	6.68	0.98	IV.	4	35.075	24 43.02	4.90	9.14	27 43.5	19 58 27.0
24	9	..	52.	..	24 4	..	..	..	29 8.13	6.68	0.98	IV.	4	40.562	18 58.77	4.88	8.21	29 15.8	52 41.9
25	10.11	..	39.5	..	12.2	..	..	..	32 55.78	6.69	0.98	IV.	4	39.918	19 39.06	4.81	8.31	33 3.4	19 53 22.2
26	8	58.3	14.3	30.8	47.1	..	..	..	33 30.78	6.69	1.01	IV.	3	32.131	27 46.43	4.80	9.64	33 38.5	20 1 30.9
27	9.10	5.8	..	38.3	..	..	..	..	36 38.49	6.69	1.02	III.	3	25.831	34 21.49	4.75	10.70	36 46.2	20 8 6.9
28	8.9	..	24.3	41.	57.2	..	..	..	39 40.81	6.69	0.96	IV.	5	49.475	9 39.31	4.69	6.68	39 48.5	19 43 20.7
29	8	..	..	34.2	50.3	..	..	..	40 34.02	6.69	1.01	IV.	3	36.349	23 21.89	4.67	8.92	40 41.7	57 5.5
30	10.11	..	..	..	..	27.?	..	..	41 54.45	6.69	1.00	V.	4	42.271	17 11.46	4.64	7.92	42 2.1	50 54.0
31	9	..	27.2	..	..	..	..	..	42 43.59	6.69	0.97	II.	5	49.176	9 57.72	4.63	6.74	42 51.2	43 39.1
32	10.11	..	56.8	..	..	..	..	..	43 13.18	6.69	0.98	II.	5	48.250	10 55.89	4.62	6.89	43 20.8	19 44 37.4
33	8.9	..	..	..	..	40.8	..	..	43 8.21	6.69	1.03	V.	3	31.672	28 15.10	4.62	9.71	43 15.9	20 1 59.4
34	8	..	29.5	46.2	..	18.5	..	..	17 45 46.00	+ 6.69	+1.01	IV.	4	42.268	−17 12.77	− 4.57	− 7.92	17 44 53.7	− 19 50 55.3

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 260	June 22, 17 0	78 54 64.9	58.5	63.	60.5	58.4	59.9	60.87	30.070	81.3	77.	..	81.	80.7
	17 20	..	..	..	..	..	..	..	30.074	80.5	77.			
	17 40	..	..	..	..	..	..	..	..	..	76.6			
	18 0	..	..	..	..	..	..	..	30.068	80.	76.			
	18 20	..	..	..	..	..	..	..	..	..	75.6			
	19 0	64.7	58.5	63.	61.9	58.4	..	61.05*	30.060	79.5	75.8	82.	79.8	79.8

REMARKS.

(259) 39. The number (25) of micrometer revolutions deduced from comparison with zone of June 20.
(259) 41. Minutes assumed as 10, not 11.
(259) 43. Time of transit over T. V assumed as $57^s.0$ instead of $59^s.0$.
(260) 1. Minutes assumed as 57 instead of 58.
(260) 9. Minutes assumed as 9, not 10.
(260) 16. Micrometer reading assumed as $16^r.808$, not $11^r.808$.
(260) 17. Micrometer reading assumed as $35^r.664$ instead of $36^r.664$.
(260) 30. Right ascension differs $1^m\ 3^s$ from Arg. Z. 219, 7; minutes perhaps 40, not 41; and transit over T. V 24^s, not 27^s.
(260) 34. Minutes assumed as 44, not 45.

*The mean 61″.30 is corrected by −0″.25 in order to reduce the mean of five microscopes to the mean of six.

ZONE 260. JUNE 22. C. $D_0 = -19° 33' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
35	10	. .	42.2	58.5	. .	. .	. .	. .	17 46 58.58	+ 6.70	+1.08	III.	1	12.332	−48 28.59	− 4.54	−13.03	17 46 6.3	− 20 22.16.2
36	10	. .	. .	. .	58.	. .	. .	. .	46 41.55	6.70	0.99	IV.	5	45.676	13 37.58	4.55	7.32	46 49.2	19 47 19.5
37	9	. .	. .	. .	42.2	. .	. .	. .	48 25.71	6.70	1.01	III.	4	37.919	21 43.87	4.51	8.65	48 33.4	55 27.0
38	9.10	. .	. .	. .	49.5	6.2	. .	. .	48 33.33	6.70	1.02	IV.	4	41.364	18 8.50	4.51	8.07	48 41.0	19 51 51.1
39	9	. .	. .	. .	18.3	34.3	. .	. .	50 1.74	6.70	1.04	IV.	3	31.161	28 47.29	4.48	9.80	50 9.5	20 2 31.6
40	7	. .	. .	57.2	13.5	30.1	. .	. .	51 57.23	6.70	1.08	IV.	2	15.095	45 35.48	4.44	12.54	51 5.0	20 19 22.5
41	10	. .	. .	. .	28.	. .	. .	. .	52 3.53	6.70	1.02	IV.	5	41.641	17 50.88	4.44	8.01	52 11.3	19 51 33.3
42	9	. .	. .	. .	. .	42.1	. .	. .	52 5.52	6.70	1.03	V.	4	36.325	23 25.27	4.44	8.92	52 13.3	57 8.6
43	9.10	31.2	47.6	4.	. .	. .	. .	. .	55 3.93	6.70	1.02	III.	5	44.542	14 48.80	4.37	7.52	55 11.6	48 30.7
44	8	0.5	16.7	33.2	. .	5.2	. .	. .	56 33.01	6.70	1.01	II.	5	47.422	11 47.86	4.35	7.01	56 40.7	45 29.2
45	9	. .	39.7	. .	. .	. .	. .	. .	57 56.10	6.71	1.00	II.	5	49.928	9 10.37	4.31	6.59	57 3.8	19 42 51.3
46	9.10	. .	. .	. .	14.2	30.	. .	. .	57 57.52	6.71	1.06	IV.	3	25.892	34 17.73	4.31	10.71	58 5.3	20 8 2.7
47	9.10	51.2	8.1	. .	. .	. .	. .	. .	59 24.18	6.71	1.07	II.	3	25.832	34 21.30	4.28	10.70	59 31.9	20 8 6.3
48	9	. .	. .	26.	. .	. .	. .	. .	59 26.02	6.71	1.03	III.	3	40.231	19 18.16	4.28	8.25	59 33.8	19 53 0.7
49	9	. .	. .	. .	56.2	. .	. .	. .	17 59 39.67	6.71	1.07	IV.	2	27.691	32 25.31	4.28	10.40	17 59 47.4	20 6 10.0
50	9.10	. .	. .	. .	. .	36.2	. .	. .	18 0 3.64	6.71	1.03	V.	4	39.755	19 49.79	4.27	8.33	18 0 11.4	19 53 32.4
51	10	. .	. .	. .	. .	39.7	. .	. .	0 7.14	6.71	1.03	V.	4	40.462	19 5.67	4.27	8.21	0 14.8	52 48.2
52	7.8	. .	57.7	13.5	. .	46.5	. .	. .	2 13.83	6.71	1.04	IV.	4	41.285	18 13.47	4.22	8.07	2 21.6	19 51 55.8
53	9	. .	. .	. .	10.1	. .	. .	. .	3 53.50	6.71	1.11	IV.	1	7.664	53 21.33	4.18	13.84	3 1.3	20 27 9.3
54	9	. .	. .	. .	11.4	27.8	. .	. .	4 55.10	6.71	1.03	IV.	5	46.414	12 51.44	4.16	7.19	4 2.8	19 46 32.8
55	8	. .	53.3	. .	26.	. .	. .	. .	6 9.51	6.71	1.11	IV.	1	9.074	51 52.90	4.13	13.60	6 17.3	20 25 40.6
56	9.10	. .	. .	. .	. .	12.	. .	. .	6 39.36	6.72	1.09	V.	3	20.847	39 34.14	4.12	11.57	6 47.2	20 13 19.8
57	9	. .	. .	39.5	56.2	12.5	. .	. .	8 39.73	6.72	1.02	IV.	5	49.606	9 30.97	4.08	6.65	8 47.5	19 43 11.7
58	9	. .	. .	33.5	. .	. .	. .	. .	10 33.47	6.72	1.04	III.	4	45.828	13 27.53	4.03	7.29	10 41.2	47 8.8
59	9	. .	12.	27.5	. .	. .	. .	. .	11 27.93	6.72	1.05	II.	3	39.242	20 20.09	4.01	8.41	11 35.7	19 54 2.5
60	8.9	. .	. .	. .	46.5	2.5	. .	. .	11 29.89	6.72	1.11	IV.	2	17.832	42 43.70	4.01	12.08	11 37.7	20 16 29.8
61	8.9	. .	. .	. .	. .	33.5	. .	. .	12 0.97	6.72	1.03	V.	5	49.769	9 20.61	3.99	6.62	12 8.7	19 43 1.2
62	10	. .	. .	. .	10.5	. .	. .	. .	14 54.03	6.73	1.06	IV.	4	43.213	16 12.28	3.91	7.75	15 1.8	49 53.9
63	8.9	. .	. .	9.6	. .	. .	. .	. .	15 9.53	6.73	1.03	III.	5	53.704	5 13.68	3.91	5.96	15 17.3	38 53.5
64	8.9	. .	. .	37.2	. .	. .	. .	. .	15 37.18	6.73	1.05	III.	4	44.668	14 40.40	3.90	7.49	15 44.9	48 21.8
65	9	1.4	18.2	. .	50.5	. .	. .	. .	19 34.21	6.73	1.07	IV.	4	41.421	18 4.67	3.80	8.05	19 42.0	51 46.5
66	10	. .	26.5	. .	. .	. .	. .	. .	21 42.91	6.74	1.05	II.	5	50.984	8 4.09	3.73	6.40	21 50.7	19 41 44.2
67	9	. .	. .	. .	47.5	3.5	. .	. .	21 30.87	6.74	1.13	V.	1	11.685	49 9.16	3.74	13.16	21 38.7	20 22 56.1
68	10	. .	. .	59.2	. .	. .	. .	. .	24 59.30	6.74	1.11	III.	3	30.549	29 25.68	3.64	9.91	25 7.2	3 9.2
69	8.9	53.5	9.3	. .	. .	. .	. .	. .	24 25.96	6.74	1.16	II.	1	6.374	54 42.16	3.66	14.08	24 33.9	20 28 29.9
70	9.10	. .	. .	. .	53.2	. .	. .	. .	24 36.70	6.74	1.09	IV.	4	36.396	23 20.26	3.65	8.90	24 44.5	19 57 2.8
71	8	. .	. .	24.2	. .	57.2	. .	. .	25 24.43	6.74	1.08	IV.	4	39.670	20 7.23	3.63	8.35	25 32.2	53 49.2
72	9.10	. .	. .	. .	. .	4.5	. .	. .	25 31.95	6.74	1.08	V.	4	41.593	17 54.57	3.63	8.02	25 39.7	51 36.2
73	9	. .	57.3	13.2	. .	. .	. .	. .	27 13.44	6.75	1.09	III.	3	36.105	23 37.01	3.58	8.95	27 21.3	57 19.5
74	10	. .	. .	. .	. .	4.5	. .	. .	27 31.97	6.75	1.06	V.	4	48.158	11 2.55	3.57	6.89	27 39.8	44 43.0
75	9.10	. .	. .	. .	. .	37.2	. .	. .	28 4.64	6.75	1.09	V.	3	39.448	20 7.29	3.56	8.38	28 12.5	53 49.2
76	9	. .	. .	. .	. .	25.4	. .	. .	29 52.87	6.75	1.07	V.	4	49.371	9 46.54	3.49	6.69	29 0.7	19 43 26.7
77	7.8	19.3	35.3	52.1	. .	24.6	. .	. .	31 51.96	6.75	1.14	IV.	2	22.168	38 11.72	3.46	11.34	30 59.9	20 11 56.5
78	10	. .	. .	. .	31.8	. .	. .	. .	32 15.40	6.75	1.06	III.	5	56.671	2 7.43	3.43	5.44	32 23.2	19 35 46.3
79	8	. .	. .	. .	39.6	. .	. .	. .	33 23.01	6.76	1.17	IV.	2	7.713	53 14.99	3.39	13.85	33 30.9	20 27 2.2
80	9	. .	. .	55.2	11.5	27.5	. .	. .	35 55.06	6.76	1.13	IV.	3	31.568	28 21.75	3.32	9.74	36 2.9	20 2 4.8
81	7.8	29.4	45.2	2.	18.5	34.6	. .	. .	37 1.94	6.76	1.08	IV.	4	47.437	11 47.36	3.28	7.02	37 9.8	19 45 27.7
82	9.10	5.3	. .	38.7	. .	. .	. .	. .	38 38.41	6.77	1.14	III.	3	32.271	27 36.45	3.23	9.62	38 46.3	20 1 19.3
83	8	. .	. .	. .	6.3	23.4	. .	. .	18 39 50.22	+ 6.77	+1.18	IV.	1	8.750	−52 13.15	− 3.18	−13.67	18 38 58.2	− 20 26 0.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(260) 35. Minutes assumed as 45, not 46.
(260) 40. Minutes of transit assumed as 50, not 51.
(260) 41. Transit over T. IV assumed as 20^s, not 28^s, to agree with Transit Z. June 26, 1848, and Arg. Z.
(260) 42. Transit over T. IV assumed as $38^s.1$, not 48^s, to agree with Transit Z. June 26, 1848, and Arg. Z.
(260) 45. Minutes assumed as 56, not 57.
(260) 53. Minutes assumed as 2, not 3.
(260) 54. Minutes assumed as 3, not 4.
(260) 76. Minutes assumed as 28, not 29.
(260) 77. Minutes assumed as 30, not 31.
(260) 83. Minutes assumed as 38, not 39.

ZONE 260. JUNE 22. C. $D_0 = -19° 33' 30''$—Continued.

No.	Mag.	Seconds of Transit I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
84	8.9			49.		21.4			18 40 48.94	+ 6.77	+1.17	IV.	2	15.492	−45 10.64	− 3.16	−12.48	18 39 56.9	− 20 18 56.3
85	9			45.5					41 45.62	6.77	1.15	III.	3	23.485	36 48.84	3.13	11.12	41 53.5	20 10 33.1
86	9		52.5			41.3			42 8.82	6.77	1.10	II.	5	45.911	13 22.51	3.12	7.27	42 16.7	19 47 2.9
87	9			31.		3.4			42 30.92	6.77	1.10	IV.	5	44.498	14 51.62	3.10	7.51	42 38.8	19 48 32.2
88	10					35.2			43 2.56	6.77	1.17	V.	2	19.175	41 19.71	3.09	11.88	43 10.5	20 15 4.7
89	10					1.3			43 28.68	6.77	1.16	V.	3	24.562	35 41.29	3.07	11.94	43 36.6	20 9 26.3
90	8.9			49.2					45 49.26	6.78	1.14	III.	4	34.985	24 47.97	2.99	9.14	45 57.2	19 58 30.1
91	9				34.3				45 17.76	6.78	1.16	IV.	3	27.075	33 3.58	3.01	10.51	45 25.7	20 6 47.1
92	9			2.2		35.3			46 2.47	6.78	1.11	IV.	5	43.821	15 33.99	2.98	7.63	46 10.6	19 49 14.6
93	10					59.5?			46 26.97	6.78	1.10	IV.	5	50.282	8 48.60	2.97	6.52	46 34.9	42 28.1
94	9.10				5.2	22.			49 49.08	6.79	1.13	IV.	4	39.248	20 21.29	2.85	8.41	49 57.0	54 2.6
95	8	4.5	21.4	37.3	53.4				51 37.29	6.79	1.13	IV.	4	41.532	17 57.90	2.78	8.03	51 45.2	19 51 38.7
96	9				22.3	38.6			52 5.88	6.79	1.16	IV.	3	28.354	31 43.52	2.76	10.29	52 13.8	20 5 26.6
97	9.10					10.2			52 37.61	6.79	1.15	V.	3	31.581	28 20.87	2.74	9.73	52 45.5	20 2 3.3
98	10		11.5		44.7				54 28.08	6.80	1.12	V.	5	49.135	10 0.54	2.66	6.71	54 36.0	19 43 39.9
99	9				34.2	50.8			55 17.87	6.80	1.20	IV.	1	12.992	47 47.13	2.63	12.95	55 25.9	20 21 32.7
100	9		44.1	0.3		33.1			57 0.44	6.80	1.12	IV.	5	50.541	8 32.35	2.55	6.46	57 8.4	19 42 11.4
101	9.10			44.2	0.2				58 0.44	6.81	1.19	IV.	2	21.588	38 48.22	2.47	11.45	58 9.44	20 12 32.1
102	10		58.3						18 59 14.66	6.81	1.14	II.	4	42.641	16 47.55	2.46	7.82	18 59 22.6	19 50 27.8
103	9			54.2					19 0 54.29	6.81	1.17	III.	3	30.808	29 9.25	2.39	9.86	19 0 2.3	20 2 51.5
104	9				19.2				0 2.64	6.81	1.19	IV.	2	20.184	40 16.29	2.43	11.69	0 10.6	14 0.4
105	7.8			49.2	5.2				1 48.99	6.81	1.17	IV.	3	31.160	28 47.35	2.36	9.80	0 57.0	2 29.5
106	9					12.4			0 39.75	6.81	1.20	V.	1	17.715	42 50.96	2.41	12.13	0 47.8	16 35.5
107	9.10		42.						19 2 58.30	+ 6.81	+1.19	II.	2	21.368	−39 1.71	− 2.30	−11.51	19 3 6.3	− 20 12 45.5

ZONE 261. JULY 2. C. $D_0 = -28° 59' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8			17.5					18 1 17.66	+ 9.69	+0.86	III.	1	13.939	−46 47.55	− 3.19	− 9.72	18 1 28.2	− 29 46 20.5
2	8				48.2				1 30.34	9.69	0.85	IV.	2	20.276	40 10.51	3.19	8.24	1 40.9	39 41.9
3	8			15.3	33.2				2 15.39	9.69	0.85	IV.	3	24.026	36 14.66	3.19	7.38	2 25.9	35 45.2
4	9		53.2	11.3	29.2				4 11.18	9.69	0.84	IV.	3	25.621	34 34.73	3.17	7.01	4 21.7	34 4.9
5	9	31.	48.2	6.2					6 6.14	9.69	0.84	III.	3	23.972	36 18.16	3.16	7.39	6 16.7	35 48.7
6	9.10				31.3	49.2			6 13.87	9.69	0.81	IV.	5	47.014	12 13.47	3.16	2.13	6 24.4	11 38.8
7	9		55.1	12.5					8 12.62	7.69	0.82	III.	4	40.709	18 48.79	3.14	3.56	8 23.1	18 15.5
8	9				40.2	57.5			8 22.28	9.69	0.85	IV.	1	14.655	46 2.77	3.14	9.54	8 32.8	45 35.4
9	9			27.5	45.4				9 27.59	9.69	0.83	IV.	2	16.227	44 24.42	3.14	9.18	9 38.1	43 56.8
10	9				14.6				10 56.74	9.69	0.83	IV.	2	19.655	40 49.28	3.12	8.38	10 7.3	40 20.8
11	8.9			42.3					10 42.24	9.69	0.80	III.	5	51.107	7 56.69	3.12	1.21	10 52.7	7 21.0
12	3				30.2	48.4			11 12.70	9.69	0.84	IV.	1	7.448	53 34.86	3.12	11.20	11 23.2	53 9.2
13	9					16.5			11 41.31	9.69	0.83	V.	3	24.049	36 13.09	3.12	7.37	11 51.8	35 43.6
14	10				58.6	16.4			12 40.96	9.69	0.83	IV.	3	20.188	40 15.54	3.11	8.26	12 51.5	39 46.9
15	9	54.2		29.2					14 29.24	9.70	0.80	III.	5	49.056	10 5.43	3.10	1.68	14 39.7	9 30.2
16	8.9				9.3				15 51.46	9.70	0.82	IV.	2	24.157	36 6.95	3.09	7.35	16 2.0	35 37.4
17	8.9	45.3	2.4	20.5					17 20.41	9.70	0.82	III.	2	24.473	35 47.12	3.07	7.27	17 30.9	35 17.4
18	9	53.2	10.2						19 28.12	9.70	0.80	II.	3	33.148	26 42.49	3.06	5.27	19 38.6	26 10.8
19	7.8	53.7	10.8	28.3		4.2			19 28.69	9.70	0.79	IV.	4	38.372	21 16.13	3.06	4.11	19 39.2	20 43.3
20	8				5.3				20 47.51	9.70	9.79	IV.	3	35.151	24 36.81	3.05	4.82	20 58.0	24 4.7
21	10		4.2?		39.7				18 22 21.91	+ 9.70	+0.77	IV.	4	46.098	−13 10.58	− 3.04	− 2.34	18 22 32.4	− 29 12 36.0

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle A.	B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 261	July 2,	18 0	88 19 61.4	59.1	60.2	63.	53.5	55.1	58.72	30.080	69.5	60.2	77.7	68.2	70.7
		18 20										59.9			
		18 40								30.082		58.9			
		19 0	60.7	60.1	60.1	64.2	53.2	54.5	58.80	30.078	65.8	58.4		70.	69.4

REMARKS.

(260) 84. Minutes assumed as 39, not 40.
(260) 101. Transits over T.'s II and III assumed as recorded over T.'s III and IV.
(260) 103. Minutes assumed as 59, not 0.
(260) 105. Minutes assumed as 0, not 1.
(261) 10. Minutes assumed as 9, not 10.

ZONE 261. JULY 2. C. $D_\circ = -28° 59' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
22	7.8	..	..	30.8	..	6.3	..	..	18 22 31.01	+ 9.70	+0.78	IV.	4	41.562	−17 55.89	− 3.04	− 3.36	18 22 41.5	− 29 17 22.3
23	7	39.2	56.8	14.2	32.3	49.6	..	..	26 14.42	9.71	0.81	IV.	1	11.694	49 8.41	3.01	10.24	26 24.9	48 41.7
24	9	..	9.3	27.3	..	..	..	..	27 27.12	9.71	0.78	III.	4	37.876	22 5.52	3.00	4.27	27 37.6	21 32.8
25	7.8	..	..	..	..	9.	..	..	27 33.81	9.71	0.80	V.	3	24.311	35 56.78	3.00	7.31	27 44.3	35 27.1
26	8	..	45.7	3.5	..	38.8	..	..	29 3.50	9.71	0.81	IV.	2	13.818	46 55.33	2.99	9.74	29 14.0	46 28.0
27	10	36.2	..	11.3	..	47.	..	..	31 11.57	9.71	0.78	IV.	3	31.981	27 55.58	2.97	5.54	31 22.1	27 24.1
28	10	43.5	0.9	..	36.2	54.2	..	..	31 18.70	9.71	0.78	IV.	3	32.563	27 19.19	2.97	5.41	31 29.2	26 47.6
29	8.9	..	..	..	14.7	32.2	..	..	33 56.92	9.71	0.78	IV.	2	22.983	37 20.46	2.95	7.61	33 7.4	36 51.0
30	9	..	..	..	..	9.5	..	..	33 34.24	9.71	0.79	V.	1	12.823	47 57.42	2.96	9.98	33 44.7	47 30.4
31	8.9	..	..	38.2	56.3	..	..	..	34 38.39	9.72	0.78	IV.	3	25.497	34 42.57	2.95	7.03	34 48.9	34 12.5
32	8.9	..	..	..	32.3	..	..	..	35 14.44	9.72	0.78	IV.	3	21.372	39 1.40	2.94	7.99	35 24.9	38 32.3
33	9	8.1	25.3	..	..	..	..	..	36 43.17	9.72	0.78	II.	3	19.705	40 45.77	2.93	8.37	36 53.7	40 17.1
34	9	..	42.2	..	..	36.2	..	..	37 0.38	9.72	0.78	II.	3	21.072	39 20.08	2.92	8.05	37 10.9	38 51.1
35	7.8	..	..	3.3	21.3	39.3	..	..	37 3.63	9.72	0.79	IV.	2	13.382	47 22.68	2.92	9.86	37 14.1	46 55.5
36	10	..	..	..	2.8	..	..	..	40 45.07	9.72	0.75	IV.	5	44.491	14 51.94	2.89	2.70	40 55.5	14 17.5
37	9.10	57.2	15.3	32.7	..	..	..	..	41 32.74	9.72	0.77	III.	3	24.466	35 47.37	2.88	7.28	41 43.2	35 17.5
38	10	..	..	1.3	..	..	..	..	42 1.40	9.73	0.76	III.	3	30.305	29 41.06	2.87	5.93	42 11.9	29 9.9
39	7	..	37.3	54.3	12.	29.6	..	..	43 54.47	9.73	0.75	IV.	3	26.625	33 31.74	2.84	6.77	43 4.9	33 1.3
40	10	..	..	..	57.3	..	..	..	43 39.58	9.73	0.73	IV.	5	45.568	13 44.35	2.86	2.46	43 50.0	13 9.7
41	8	..	..	..	44.5	1.7	..	..	44 26.68	9.73	0.74	IV.	4	43.237	16 10.83	2.85	2.97	44 37.2	15 36.6
42	7.8	..	26.6	44.3	2.6	..	..	..	46 44.45	9.73	0.74	IV.	3	35.472	24 16.73	2.81	4.75	45 54.9	23 44.3
43	8	..	..	26.1	44.	1.6	..	..	46 26.25	9.73	0.76	IV.	1	20.294	40 9.20	2.82	8.23	46 36.7	39 40.2
44	10	..	..	..	13.2	..	..	..	47 55.36	9.73	0.76	IV.	2	24.678	35 34.20	2.79	7.23	47 5.8	35 4.2
45	10	44.3	1.9	19.2	..	..	..	..	49 19.41	9.74	0.73	III.	4	43.400	16 0.10	2.77	2.95	49 29.9	15 25.8
46	8.9	3.3	20.9	38.5	56.4	..	..	..	51 38.57	9.74	0.74	IV.	3	26.805	33 20.32	2.74	6.74	51 49.0	32 49.8
47	9.10	..	..	51.3	..	26.2	..	..	54 51.20	9.75	0.76	IV.	1	10.872	49 59.91	2.70	10.43	54 1.7	49 33.0
48	9	7.2	24.3	..	..	..	..	..	55 42.18	9.75	0.73	II.	3	33.717	26 6.72	2.69	5.16	55 52.6	25 34.6
49	7.8	..	..	7.3	25.	42.5	..	..	56 7.32	9.75	0.72	IV.	4	40.944	18 34.54	2.68	3.50	56 17.8	18 0.7
50	9	..	9.3	26.3	44.6	..	..	..	57 26.69	9.75	0.72	IV.	3	36.133	23 35.19	2.67	4.60	57 37.2	23 2.5
51	9.10	..	..	..	29.8	..	..	..	18 58 12.06	9.75	0.71	IV.	4	42.579	16 52.06	2.66	3.12	18 58 22.5	16 17.8
52	10	3.2	..	..	..	..	..	..	19 0 38.30	9.75	0.70	III.	5	52.012	6 59.82	2.63	0.97	19 0 48.7	6 23.4
53	9	..	56.4	14.	31.5	49.2	..	..	1 14.00	9.76	0.70	IV.	5	52.585	6 23.91	2.62	0.84	1 24.5	5 47.4
54	7	..	..	..	..	13.2	..	..	1 37.96	9.76	0.73	V.	1	15.808	44 50.21	2.62	9.30	1 48.4	44 22.1
55	9.10	..	..	..	..	49.3	..	..	2 14.04	9.76	0.74	V.	1	13.636	47 6.55	2.61	9.79	2 24.5	46 39.0
56	9	11.3	28.3	46.8	..	..	..	..	5 46.46	9.77	0.71	III.	3	28.190	31 53.69	2.58	6.41	5 56.9	31 22.7
57	8	..	43.5	0.2	18.2	35.8	..	..	5 0.59	9.76	0.71	IV.	3	29.972	30 1.63	2.59	6.01	5 11.1	29 30.2
58	8	14.3	32.2	49.3	..	..	..	..	19 9 49.54	+ 9.77	+0.69	III.	4	41.636	−17 50.69	− 2.55	− 3.33	19 10 0.0	− 29 17 16.6

ZONE 262. JULY 3. C. $D_\circ = -29° 14' 20''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	14.2	31.6	49.2	7.2	24.5	..	..	15 48 49.34	+ 9.65	+0.86	IV.	4	40.768	−18 45.58	− 0.86	− 2.54	15 48 59.85	− 29 33 9.0
2	9.10	..	..	..	48.	7.2	..	..	48 30.96	9.65	1.04	IV.	1	12.937	47 50.39	0.85	8.93	48 41.65	30 2 20.2
3	8.9	..	..	46.5	4.4	22.3	..	..	50 46.69	9.65	1.04	IV.	1	11.941	48 52.85	0.90	9.17	50 57.38	30 3 22.9
4	8	..	..	..	..	45.2	..	..	50 9.97	9.65	0.89	V.	4	35.296	24 29.53	0.88	3.79	50 20.51	29 38 54.2
5	9	..	..	..	..	12.4	..	..	50 37.20	9.65	0.86	V.	4	40.582	18 57.76	0.89	2.60	50 47.71	33 21.2
6	8.9	56.	13.4	31.3	49.	..	..	..	53 31.15	9.64	0.96	IV.	3	24.362	35 53.84	0.96	6.30	53 41.75	50 21.1
7	9	..	..	2.3	20.1	37.5	..	..	54 2.29	9.64	0.93	IV.	3	31.496	28 26.20	0.97	4.66	54 12.86	42 51.8
8	9	..	42.3	0.3	17.8	..	..	..	15 59 0.09	+ 9.63	+0.88	IV.	4	38.095	−21 33.39	− 1.09	− 3.15	15 59 10.60	− 29 35 57.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 262	July 3,	15 45	88 34 60.8	56.4	58.9	59.8	52.6	53.6	57.02	30.218	71.8	66.5	..	69.7	71.
		16 0	..	..	..	..	..	..	..	..	..	66.8			
		16 20	60.9	56.9	59.9	60.9	52.4	53.8	57.47	30.224	70.7	65.7	73.	67.5	70.

REMARKS.

(261) 29. Minutes assumed as 32, not 33.
(261) 32. Right ascension differs 10^s from Arg. Z. 221, 119.
(261) 39. Minutes assumed as 42, not 43.
(261) 42. Minutes assumed as 45, not 46.
(261) 44. Minutes assumed as 46, not 47.
(261) 47. Minutes assumed as 53, not 54.
(262) 2. Transit observations discordant by 2^s; their mean doubtless 1^s in error.
(262) 6. Time of transit over T. I assumed as $55^s.6$ instead of $5^s.6$.

ZONE 262. JULY 3. C. $D_{\circ}=-29° 14' 20''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
9	8.9	. .	. .	. .	48.4	15.7	. .	. .	15 59 30.45	+ 9.63	+0.97	IV.	3	23.462	−36 50.22	− 1.10	− 6.49	15 59 41.05	− 29 51 17.8
10	9.10	. .	. .	. .	39.5	57.4	. .	. .	16 0 21.85	9.63	0.98	IV.	3	22.011	38 21.13	1.12	6.83	16 0 32.46	52 49.1
11	8	31.1	48.6	6.2	. .	41.6	. .	. .	3 6.35	9.62	0.93	IV.	3	28.971	31 4.43	1.21	5.24	3 16.90	45 30.9
12	8	. .	59.3	17.	34.4	52.6	. .	. .	4 16.97	9.62	0.96	IV.	3	25.372	34 50.48	1.26	6.05	4 27.55	49 17.8
13	8.9	44.6	. .	19.7	37.4	55.2	. .	. .	7 19.79	9.62	0.80	IV.	5	51.536	7 29.77	1.36	0.12	7 30.21	21 51.2
14	9	. .	. .	. .	28.2	45.5	. .	. .	8 10.33	9.62	0.88	IV.	4	38.429	10 45.15	1.39	0.81	8 20.83	29 25 7.4
15	8.9	. .	. .	18.2	. .	53.3	. .	. .	9 18.14	9.61	1.07	IV.	1	7.971	53 1.88	1.44	10.10	9 28.82	30 7 33.4
16	8.9	. .	10.6	. .	46.2	3.8	. .	. .	9 28.32	9.61	1.05	IV.	2	12.113	48 42.38	1.44	9.12	9 38.98	30 3 12.9
17	9	. .	22.4	40.1	58.	15.5	. .	. .	11 40.14	9.61	0.93	IV.	3	30.242	29 44.88	1.51	4.94	11 50.68	29 44 11.3
18	9.10	. .	5.2	22.	40.	. .	. .	. .	13 22.35	9.61	0.93	IV.	3	30.174	29 49.09	1.57	4.96	13 32.89	44 15.6
19	8.9	. .	. .	15.5	. .	50.3	. .	. .	14 15.32	9.60	0.97	IV.	3	25.161	35 3.58	1.61	6.10	14 25.89	49 31.3
20	8.9	. .	13.2	. .	48.2	6.3	. .	. .	14 30.72	9.60	0.97	IV.	3	26.392	33 46.42	1.61	5.82	14 41.29	48 13.8
21	8	. .	. .	. .	30.3	48.	. .	. .	16 12.64	9.60	0.88	IV.	4	39.659	19 55.26	1.66	2.81	16 23.12	34 19.7
22	8.9	27.1	44.3	2.3	20.1	37.4	. .	. .	20 2.24	9.60	0.90	IV.	4	42.076	17 23.57	1.80	2.25	20 12.74	31 47.6
23	8.9	. .	16.2	34.2	52.	. .	. .	. .	21 34.08	9.59	0.94	IV.	3	32.362	27 31.94	1.83	4.46	21 44.61	41 58.2
24	9	. .	. .	5.5	23.4	41.3	. .	. .	22 5.73	9.59	0.89	IV.	4	40.479	19 3.91	1.84	2.62	22 16.21	33 28.4
25	9.10	. .	. .	. .	. .	34.5	. .	. .	16 23 59.19	+ 9.59	+0.99	V.	2	22.285	−38 4.44	− 1.88	− 6.77	16 24 9.77	− 29 52 33.1

ZONE 263. JULY 5. C. $D_{\circ}=-28° 54' 10''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	. .	. .	9.7	27.2	44.8	. .	. .	15 50 9.58	+ 9.95	+1.10	IV.	2	16.125	−44 30.76	− 3.12	−13.12	15 50 20.63	− 29 38 57.0
2	9.10	. .	44.4	2.0	. .	37.3	. .	. .	54 2.07	9.94	1.17	IV.	2	12.368	48 26.52	3.17	13.97	54 13.18	42 53.7
3	9	31.5	49.2	6.3	24.2	. .	. .	. .	58 6.56	9.93	0.52	IV.	5	49.707	9 24.57	3.22	5.63	15 58 17.01	3 43.4
4	9	. .	42.2	59.7	17.2	35.3	. .	. .	15 59 59.76	9.93	1.04	IV.	2	18.974	41 31.93	3.24	12.49	16 0 10.73	35 57.7
5	6	57.2	14.8	32.3	50.1	7.9	. .	. .	16 1 32.46	9.92	0.47	IV.	5	52.389	6 36.28	3.25	5.03	1 42.85	0 54.6
6	8.9	30.4	48.	5.2	23.6	40.9	. .	. .	3 5.62	9.92	1.24	IV.	1	9.846	51 4.25	3.28	14.55	3 16.78	45 32.1
7	9	. .	. .	. .	. .	12.8	. .	. .	3 37.69	9.92	0.75	V.	4	38.608	21 1.58	3.29	8.08	3 48.36	15 22.9
8	9	. .	. .	. .	. .	52.3	. .	. .	4 17.00	9.92	1.30	V.	1	6.226	54 51.30	3.29	15.37	4 28.22	49 20.0
9	8	44.2	1.7	19.2	37.3	54.6	. .	. .	7 19.40	9.91	0.86	IV.	3	32.394	27 29.87	3.33	9.47	7 30.17	21 52.7
10	8.9	. .	52.5	9.2	27.8	45.4	. .	. .	8 9.89	9.91	0.93	IV.	3	29.276	30 45.48	3.34	10.18	8 20.73	25 9.0
11	9	22.8	40.4	58.2	16.	33.5	. .	. .	10 58.18	9.91	1.02	IV.	2	20.287	40 9.76	3.38	12.18	11 9.11	34 35.3
12	9	. .	43.3	0.5	18.5	35.8	. .	. .	11 0.73	9.91	0.82	IV.	5	44.812	14 31.61	3.38	6.70	11 11.46	8 51.7
13	9	. .	. .	. .	. .	14.8	. .	. .	11 39.53	9.91	1.20	V.	1	11.116	49 44.60	3.39	14.25	11 50.64	44 12.2
14	8.9	29.1	46.5	. .	21.4	39.1	. .	. .	15 4.00	9.90	0.84	II.	3	33.466	26 22.65	3.44	9.22	15 14.74	20 45.3
15	8	29.2	46.6	. .	21.5	39.2	. .	. .	15 4.10	9.90	0.84	IV.	3	33.368	26 28.81	3.44	9.24	15 14.84	20 51.5
16	8.9	. .	. .	. .	. .	41.?	. .	. .	16 5.96	9.90	0.52	V.	5	50.432	8 38.87	3.45	5.46	16 16.38	2 57.8
17	9.10	. .	26.2	43.6	. .	. .	. .	. .	18 43.71	9.89	0.60	III.	4	46.489	12 46.23	3.48	6.33	17 54.20	7 6.0
18	9.10	. .	. .	. .	7.4	. .	. .	. .	18 49.72	9.89	0.47	IV.	5	51.814	7 12.12	3.48	5.15	18 0.08	29 1 30.7
19	8	. .	. .	. .	. .	21.3	. .	. .	18 56.40	9.89	0.39	V.	5	56.455	2 20.79	3.48	4.13	18 6.68	28 56 38.4
20	9	26.2	44.5	1.9	. .	. .	. .	. .	20 1.88	9.89	0.96	III.	3	22.939	37 22.91	3.50	11.58	20 12.73	29 31 48.0
21	9.10	. .	. .	. .	31.3	. .	. .	. .	20 13.40	9.89	1.19	IV.	2	11.300	49 33.43	3.50	14.22	20 24.48	44 1.1
22	8.9	. .	. .	. .	25.	42.5	. .	. .	21 7.35	9.89	0.61	IV.	5	44.761	14 34.87	3.51	6.71	21 17.85	8 55.1
23	9	. .	. .	. .	. .	9.1	. .	. .	21 33.85	9.89	1.11	V.	2	15.184	45 29.78	3.52	13.34	21 44.85	39 56.6
24	8.9	. .	. .	. .	. .	40.5	. .	. .	22 5.29	9.89	0.99	V.	3	21.314	39 4.79	3.52	11.95	22 16.16	33 30.3
25	9	56.6	14.5	32.	. .	. .	. .	. .	24 32.04	9.88	0.93	III.	3	24.139	36 7.77	3.55	11.33	24 42.85	30 32.7
26	9.10	. .	. .	. .	2.4	. .	. .	. .	16 25 44.58	+ 9.88	+0.89	IV.	3	30.871	−29 5.23	− 3.57	− 9.79	16 25 55.35	− 29 23 28.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 263	July 5, 15 50	88 14 62.0	56.1	57.8	59.9	52.1	53.7	56.93	30.192	72.5	69.8	. .	70.3	71.5
	16 0	. .	. .	. .	. .	. .	. .	. .	. .	. .	69.5			
	16 25	62.0	56.0	58.1	59.8	52.1	53.1	56.85	30.198	71.5	68.5	72.5	69.2	70.5

REMARKS.

(262) 9. Transit over T. V assumed to have been observed at 5s.7 instead of 15s.7

(262) 14. Micrometer reading assumed as 48r.429, not 38r.429.

(263) 17. Minutes assumed as 17, not 18.

(263) 18. Minutes assumed as 17, not 18.

(263) 19. Transit over T. I assumed as recorded over T. IV, and minutes as 17, not 18.

ZONE 264. JULY 5. C. $D_0 = -20° 48' 40''$.

No.	Mag.	Seconds of Transit. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
1	9	. .	. .	. .	51.3	. .	. .	. .	16 54 34.67	+ 9.82	+1.10	IV.	3	36.806	−22 52.84	− 0.43	− 3.83	16 54 45.6	− 21 11 37.1
2	9.10	. .	. .	. .	. .	12.	. .	. .	54 39.13	9.82	1.04	VI.	3	30.351	29 37.67	0.43	4.94	54 50.0	18 23.0
3	8	. .	. .	35.2	52.3	. .	. .	. .	56 35.45	9.82	1.16	IV.	5	44.056	15 12.91	0.41	2.58	56 46.4	3 55.9
4	8	. .	. .	. .	20.2	36.5	. .	. .	57 3.58	9.82	1.00	IV.	3	27.806	32 17.53	0.41	5.38	57 14.4	21 3.3
5	9	. .	. .	. .	. .	42.?	. .	. .	16 57 9.18	9.82	1.15	V.	5	44.774	14 33.86	0.41	2.46	16 57 20.2	3 16.7
6	10	. .	. .	. .	41.2	. .	. .	. .	17 0 41.34	9.81	0.84	IV.	1	13.795	46 56.65	0.39	7.78	17 0 52.0	35 44.8
7	10	34.6	. .	7.4	. .	. .	. .	. .	2 7.43	9.81	1.12	III.	5	46.622	12 38.27	0.38	2.14	2 18.4	1 20.8
8	9	. .	. .	. .	27.2	. .	. .	. .	2 10.58	9.81	1.04	IV.	4	37.550	22 7.72	0.38	3.71	2 21:4	10 51.8
9	8.9	. .	. .	54.3	11.4	. .	. .	. .	3 54.56	9.81	0.80	IV.	1	13.646	47 6.05	0.36	7.81	3 5.2	35 54.2
10	8	. .	. .	. .	46.5	3.	. .	. .	3 29.96	9.81	0.90	IV.	3	23.935	36 20.36	0.37	6.05	3 40.7	21 25 6.8
11	10	. .	. .	. .	33.2	50.2	. .	. .	4 17:01	9.81	1.12	VI.	5	48.906	10 14.22	0.36	1.76	4 27.9	20 58 56.3
12	8.9	. .	. .	. .	. .	45.2	. .	. .	5 12.35	9.81	1.02	V.	3	37.672	21 58.43	0.35	3.68	5 23.2	21 10 42.5
13	8.9	. .	. .	. .	14.7	31.3	. .	. .	6 58.26	9.80	1.01	IV.	3	36.917	22 45.87	0.34	3.82	6 9.1	11 30.0
14	8	. .	57.6	14.2	30.9	47.	. .	. .	7 14.16	9.80	0.87	IV.	1	9.152	51 47.95	0.34	8.60	7 24.8	40 36.9
15	10	56.6	13.2	29.3	. .	. .	. .	. .	9 29.56	9.80	0.85	III.	3	23.678	36 36.62	0.33	6.09	9 40.2	25 23.0
16	10	15.9	32.	. .	. .	. .	. .	. .	11 48.68	9.80	0.86	II.	3	26.694	33 27.41	0.31	5.57	11 59.3	22 13.3
17	10.11	. .	. .	12.2	. .	. .	. .	. .	11 12.32	9.80	0.83	III.	3	23.342	36 57.88	0.31	6.15	11 23.0	25 44.3
18	10	. .	. .	. .	9.4	. .	. .	. .	12 52.76	9.80	0.93	IV.	4	34.588	25 13.52	0.30	4.21	13 3.5	13 58.0
19	10	. .	. .	. .	46.2	. .	. .	. .	12 13.31	9.80	0.85	IV.	3	25.026	35 11.99	0.31	5.86	12 24.0	23 58.2
20	10	. .	. .	. .	27.3	. .	. .	. .	13 54.46	9.80	0.97	IV.	4	39.899	19 40.12	0.30	3.30	13 5.2	8 23.7
21	8	. .	9.8	26.4	43.5	. .	. .	. .	14 26.52	9.80	0.73	IV.	1	15.497	45 10.08	0.29	7.50	14 37.1	33 57.9
22	8.9	. .	22.	38.2	. .	11.3	. .	. .	14 38.39	9.80	0.78	IV.	2	19.635	40 50.61	0.29	6.78	14 49.0	29 37.7
23	6.7	. .	. .	. .	49.2	6.1	. .	. .	15 32.88	9.80	0.85	IV.	3	30.954	29 0.02	0.28	4.84	15 43.5	17 45.1
24	8	. .	. .	. .	49.3	6.2	. .	. .	17 32.98	9.79	0.83	IV.	3	28.932	31 6.88	0.27	5.18	17 43.6	19 52.3
25	8.9	. .	. .	. .	. .	7.5	. .	. .	17 17 34.63	+ 9.79	+0.86	V.	3	32.065	−27 50.25	− 0.27	− 4.65	17 17 45.3	− 21 16 35.2

ZONE 265. JULY 11. C. $D_0 = -20° 48' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	Micrometer.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	8	51.4	7.3	24.5	. .	57.3	. .	. .	17 3 24.30	+16.78	+0.18	IV.	3	23.925	−36 20.99	− 8.29	− 5.04	17 3 41.3	− 21 25 4.3
2	9	33.	49.6	5.4	22.5	. .	. .	. .	5 5.84	16.78	0.23	IV.	3	37.631	22 1.20	8.26	2.70	5 22.8	10 42.2
3	9	. .	35.3	52.	8.4	25.	. .	. .	6 51.93	16.78	0.23	IV.	3	36.888	22 47.69	8.24	2.83	6 8.9	11 28.8
4	8.9	. .	51.6	7.9	24.9	41.4	. .	. .	7 8.18	16.78	0.11	IV.	3	9.102	51 49.71	8.24	7.55	7 25.1	40 35.5
5	10	. .	. .	22.8	. .	. .	. .	. .	9 22.92	16.77	0.18	III.	3	23.624	36 40.07	8.21	5.09	9 39.9	21 25 23.4
6	6.7	11.1	27.4	43.8	60.5	16.9	. .	. .	11 43.94	16.77	0.29	IV.	5	50.938	8 7.17	8.18	0.47	12 1.0	20 56 45.8
7	10	. .	. .	. .	. .	39.3	. .	. .	12 6.41	16.77	0.18	V.	2	24.985	35 14.93	8.17	4.85	12 23.4	21 23 58.0
8	9	47.6	4.	. .	36.8	53.3	. .	. .	14 20.39	16.76	0.13	IV.	1	15.454	45 12.52	8.15	6.48	14 37.3	33 57.1
9	9.10	. .	15.5	32.2	. .	5.4	. .	. .	14 32.25	16.76	0.16	IV.	2	19.582	40 53.98	8.15	5.77	14 49.2	29 37.9
10	7.8	. .	. .	. .	. .	59.2	. .	. .	15 26.33	16.76	0.20	V.	3	30.898	29 3.34	8.13	3.85	15 43.3	17 45.3
11	9	. .	. .	. .	36.8	53.4	. .	. .	16 20.30	16.76	0.16	IV.	2	19.864	40 36.12	8.12	5.72	16 37.2	29 20.0
12	8	. .	10.2	. .	43.2	59.8	. .	. .	17 26.70	16.76	0.20	II.	3	28.916	31 7.88	8.11	4.19	17 43.7	19 50.2
13	9	. .	. .	. .	44.5	1.5	. .	. .	17 28.24	16.76	0.21	IV.	3	32.030	27 52.58	8.11	3.66	17 45.2	16 34.4
14	10	14.2	. .	47.6	4.	. .	. .	. .	22 47.42	16.75	0.19	IV.	3	27.154	32 58.55	8.03	4.48	22 4.4	21 41.1
15	10.11	. .	. .	. .	. .	43.2	. .	. .	22 10.30	16.75	0.17	V.	3	22.419	37 55.53	8.04	5.29	22 27.2	26 38.9
16	10	32.2	48.4	5.1	. .	. .	. .	. .	24 5.05	16.75	0.23	III.	4	37.032	22 39.54	8.02	2.81	24 22.0	11 20.4
17	10.11	. .	. .	44.2	3.3	. .	. .	. .	25 45.45	16.75	0.25	IV.	4	43.346	16 4.05	7.99	1.76	26 2.5	4 43.8
18	10	. .	. .	. .	0.2	17.	. .	. .	26 43.88	16.75	0.25	IV.	4	41.734	17 45.03	7.98	2.02	26 0.9	6 25.0
19	8.9	. .	. .	33.3	50.3	. .	. .	. .	26 33.50	16.75	0.25	IV.	4	42.332	17 7.70	7.98	− 1.91	26 50.5	21 5 47.6
20	8.9	. .	. .	. .	25.4	42.3	. .	. .	17 27 9.20	+16.75	+0.31	IV.	5	55.021	− 3 49.68	− 7.98	+ 0.21	17 27 26.3	− 20 52 27.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		Circle. A.			B.	C.	D.	E.	F.	Mean.	Barom.	Thermom. At.	Ex.	U.	L.	I.
	1849.	h. m.	°	′	″						″	in.	°	°	°	°	°
Zone 264	July 5,	17 0	80	9	63.2	59.2	61.8	62.6	55.2	55.2	59.53	30.206	71.	67.	. .	70.8	70.7
		17 20			63.5	59.0	61.9	63.0	55.1	55.1	59.60	30.206	70.5	66.5	. .	67.7	
Zone 265	July 11,	17 0	80	9	65.1	56.9	60.3	59.6	55.7	57.1	59.12	30.314	81.8	79.5	79.	81.	79.5
		17 20			. .	. .	. .	. .	. .	. .	. .	. .	. .	79.1			
		17 40			. .	. .	. .	. .	. .	. .	. .	30.304	80.8	78.4			
		18 0			. .	. .	. .	. .	. .	. .	. .	. .	. .	78.0			
		18 40			. .	. .	. .	. .	. .	. .	. .	30.320	79.5	77.8			
		19			64.4	57.3	60.7	59.9	55.2	57.1	59.10	30.326	79.2	77.5	. .	78.8	78.5

REMARKS.

(264) 6. Transit over T. III assumed as recorded over T. IV.
(264) 9. Minutes assumed as 2, not 3.
(264) 13. Minutes assumed as 5, not 6.
(264) 18. Right ascension differs 1^m from Arg. Z. 213, 85; minutes probably 11, not 12.
(264) 19. Transit over T. V assumed as recorded over T. IV.
(264) 20. Transit over T. V assumed as recorded over T. IV, to agree with Arg. Z. 393, 50, and minutes as 12, not 13.
(265) 3. Minutes of transit assumed as 5, not 6.
(265) 14. Minutes assumed as 21, not 22.
(265) 17. Transits discordant by 2^s; their mean probably 1^s in error.
(265) 18. Minutes assumed as 25, not 26.

ZONE 265. JULY 11. C. $D_0 = -20° 48' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
21	8	. .	. .	. .	. .	5.	. .	. .	17 27 32.22	+16.74	+0.32	V.	5	56.205	− 2 36.50	− 7.97	+ 0.41	17 27 49.3	− 20 51 14.1
22	8.9	. .	. .	. .	. .	58.5?	. .	. .	28 25.66	16.74	0.23	V.	3	38.724	20 52.35	7.96	− 2.53	28 42.6	21 9 32.8
23	6.7	36.4	. .	9.5	25.8	42.4	. .	. .	34 9.41	16.74	0.12	IV.	1	13.232	47 31.95	7.88	6.85	34 26.3	30 16.7
24	9.10	. .	. .	4.5	21.1	. .	. .	. .	35 4.52	16.74	0.18	IV.	3	25.779	34 24.69	7.87	4.72	35 21.4	23 7.3
25	9.10	. .	. .	54.8	. .	28.	. .	. .	36 55.01	16.73	0.12	IV.	2	11.265	49 35.69	7.85	7.19	37 11.9	38 20.7
26	9.10	. .	. .	54.2	. .	27.	. .	. .	37 54.20	16.73	0.16	IV.	2	17.524	43 3.07	7.83	6.12	37 11.1	31 47.0
27	9	. .	. .	. .	. .	56.5	. .	. .	37 23.60	16.73	0.17	V.	2	22.314	38 2.68	7.84	5.31	37 40.5	21 26 45.8
28	9.10	. .	41.8	. .	14.8	. .	. .	. .	42 58.30	16.73	0.30	IV.	5	52.668	6 18.65	7.76	0.15	43 15.3	20 54 56.6
29	9	. .	. .	. .	. .	7.2	. .	. .	42 34.39	16.73	0.28	V.	4	47.145	12 5.95	7.76	1.10	42 51.4	21 0 44.8
30	10	44.3	. .	18.	34.8	. .	. .	. .	44 17.82	16.73	0.26	IV.	4	41.339	18 9.76	7.74	2.03	44 34.8	21 6 49.6
31	9	. .	. .	25.5	42.	58.5	. .	. .	45 25.53	16.72	0.28	IV.	5	48.616	10 33.05	7.72	0.84	45 42.5	20 59 11.6
32	8.9	43.5	0.2	16.3	32.1	49.2	. .	. .	50 16.26	16.72	0.27	IV.	5	46.304	12 58.21	7.65	1.24	50 33.3	21 1 37.1
33	9.10	. .	. .	. .	22.5	39.2	. .	. .	51 6.05	16.72	0.17	IV.	2	22.006	38 21.81	7.63	5.36	51 22.9	27 4.8
34	8.9	49.1	5.6	22.1	38.4	55.	. .	. .	53 22.04	16.72	0.16	IV.	2	19.115	41 23.23	7.60	5.84	53 38.9	21 30 6.7
35	10.11	. .	. .	. .	16.8	33.5	. .	. .	54 0.48	16.72	0.30	IV.	5	51.599	7 25.81	7.58	0.34	54 17.5	20 56 3.7
36	9.10	. .	. .	28.5	. .	. .	. .	. .	55 28.45	16.72	0.30	III.	5	50.906	8 9.19	7.56	0.46	55 45.5	20 56 47.2
37	8.9	. .	. .	13.1	. .	46.3	. .	. .	56 13.29	16.72	0.25	IV.	3	39.502	20 3.85	7.54	2.39	56 30.3	21 8 43.8
38	10	. .	. .	. .	10.	. .	. .	. .	57 53.30	16.71	0.16	IV.	2	21.073	39 20.40	7.51	5.52	58 10.2	28 3.4
39	8	. .	. .	. .	50.5	. .	. .	. .	57 33.79	16.71	0.15	IV.	2	18.436	42 4.68	7.52	5.97	57 50.7	30 48.2
40	7	. .	. .	. .	11.1	27.2	. .	. .	58 54.35	16.71	0.17	IV.	2	21.870	38 30.28	7.49	5.36	59 11.2	27 13.1
41	8	. .	56.	12.5	. .	. .	. .	. .	59 12.50	16.71	0.21	II.	3	32.517	27 22.20	7.47	3.57	59 29.4	16 3.2
42	7	. .	. .	21.8	38.3	54.2	. .	. .	59 21.61	16.71	0.17	IV.	2	21.250	39 9.26	7.47	5.50	17 58 38.5	17 52.2
43	9	. .	. .	. .	55.	21.8	. .	. .	59 11.67	16.71	0.17	IV.	3	23.576	36 43.07	7.47	5.09	18 0 28.5	25 25.6
44	10	. .	14.	. .	. .	. .	. .	. .	17 59 25.	16.71	0.17	II.	3	23.591	36 42.13	7.45	5.09	0 42.	25 24.7
45	8.9	. .	. .	. .	14.2	. .	. .	. .	18 1 57.53	16.71	0.19	IV.	3	27.928	32 9.87	7.43	4.35	1 14.4	20 51.6
46	8.9	. .	. .	. .	47.2	3.3	. .	. .	1 30.48	16.71	0.19	IV.	3	28.715	31 20.56	7.45	4.22	1 47.4	21 20 2.2
47	9	. .	. .	. .	. .	24.2	. .	. .	2 51.41	16.71	0.30	V.	5	53.155	5 47.96	7.42	0.06	2 8.4	20 54 25.4
48	10	. .	. .	25.	41.2	. .	. .	. .	3 24.80	16.71	0.28	IV.	4	46.845	12 24.20	7.41	1.14	3 41.8	21 1 2.7
49	6	. .	. .	30.3	47.3	3.6	. .	. .	4 30.57	16.71	0.26	IV.	4	42.562	16 53.19	7.38	1.86	4 47.5	21 5 32.4
50	9	. .	. .	. .	4.2	20.6	. .	. .	6 47.71	16.71	0.28	IV.	5	48.049	11 8.57	7.34	0.94	7 4.7	20 59 46.8
51	10	. .	. .	52.3	. .	. .	. .	. .	11 52.44	16.71	0.14	III.	2	15.751	44 54.02	7.22	6.45	12 9.3	21 33 37.7
52	10	. .	. .	. .	. .	32.3	. .	. .	11 59.37	16.71	0.14	V.	2	16.406	44 13.26	7.21	6.33	12 16.2	32 56.8
53	9.10	. .	. .	. .	17.8	33.8	. .	. .	12 1.00	16.71	0.17	IV.	3	23.046	37 16.26	7.21	5.19	12 17.9	25 58.7
54	9.10	. .	. .	13.5	29.4	. .	. .	. .	13 13.17	16.71	0.17	IV.	3	22.808	37 31.07	7.19	5.24	13 30.1	26 13.5
55	9	. .	7.5	24.	40.5	56.9	. .	. .	16 23.99	16.70	0.26	IV.	4	41.330	18 10.58	7.11	2.07	16 41.0	6 49.8
56	10.11	. .	. .	33.5	. .	. .	. .	. .	17 33.65	16.70	0.13	III.	1	13.372	47 23.37	7.09	6.86	17 50.5	36 7.3
57	9	. .	34.2	51.5	. .	. .	. .	. .	19 51.13	16.70	0.17	III.	3	22.956	37 21.84	7.02	5.21	19 8.0	26 4.1
58	9	. .	. .	. .	. .	27.2	. .	. .	19 54.33	16.70	0.20	V.	3	29.255	30 46.61	7.02	4.12	19 11.2	19 27.7
59	9	. .	. .	. .	51.3	8.	. .	. .	19 34.85	16.70	0.17	IV.	1	21.738	38 38.43	7.03	5.41	19 51.7	27 20.9
60	9	. .	. .	. .	. .	9.4	. .	. .	20 36.58	16.70	0.27	V.	4	45.362	13 57.90	7.01	1.39	20 53.6	2 36.3
61	8.9	. .	. .	43.2	59.5	16.6	. .	. .	21 43.26	16.70	0.13	IV.	1	12.191	48 37.36	6.98	7.06	22 0.1	37 21.4
62	8.9	. .	. .	. .	. .	46.5	. .	. .	22 13.62	16.70	0.19	V.	3	27.936	32 9.18	6.97	4.36	22 30.5	10 50.5
63	9	. .	. .	22.	. .	. .	. .	. .	23 22.11	16.70	0.19	III.	3	28.106	31 58.90	6.93	4.32	23 39.0	20 40.2
64	9	. .	. .	20.2	. .	53.3	. .	. .	24 20.37	16.70	0.20	IV.	3	28.398	31 40.64	6.91	4.27	24 37.3	21 20 21.8
65	7.8	34.3	50.3	7.1	23.6	39.9	. .	. .	26 7.06	16.70	0.29	IV.	3	50.587	8 28.07	6.86	0.49	26 24.1	20 57 5.4
66	9	38.3	54.2	11.2	. .	. .	. .	. .	28 11.12	16.70	0.13	III.	1	12.620	48 10.40	6.82	6.99	28 27.9	21 36 54.2
67	9	. .	. .	24.2	. .	57.5	. .	. .	28 24.46	16.70	0.15	IV.	2	17.159	43 25.97	6.81	6.20	28 41.3	32 9.0
68	7.8	. .	. .	. .	55.	11.2	. .	. .	28 38.29	16.70	0.15	IV.	2	18.294	42 14.84	6.81	6.03	28 55.1	30 57.7
69	7.8	. .	. .	. .	56.	12.5	. .	. .	18 29 39.51	+16.70	+0.24	IV.	4	38.080	−21 34.39	− 6.79	− 2.62	18 29 56.5	− 21 10 13.8

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex	U.	L.	I.
1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°

REMARKS.

(265) 26. Minutes assumed as 36, not 37.
(265) 43. Transits over T.'s II and III assumed as recorded over T.'s IV and V, and transit over T. III as $11^s.8$, not $21^s.8$, and minutes as 0, not 1.
(265) 45. Minutes of transit ass'd as 0^m instead of 1^m.
(265) 47. Minutes assumed as 1, not 2.
(265) 57. Minutes assumed as 18, not 19.
(265) 58. Minutes assumed as 18, not 19, to agree with Arg. Z. 310, 47.

ZONE 265. JULY 11. C. $D_0 = -20° 48' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
70	8.9	. .	. .	. .	. .	56.?	. .	. .	18 30 23.19	+16.70	+0.27	IV.	5	45.938	−13 21.00	− 6.77	− 1.28	18 30 40.2	− 21 1 59.0
71	8.9	. .	. .	. .	. .	21.5	. .	. .	31 48.67	16.70	0.26	V.	4	42.442	17 1.16	6.74	1.88	32 5.6	5 39.8
72	9	. .	. .	. .	. .	56.	. .	. .	31 23.06	16.70	0.13	V.	1	12.002	48 49.03	6.75	7.10	31 39.9	37 32.9
73	9	. .	. .	43.2	. .	16.5	. .	. .	32 43.46	16.70	0.17	IV.	2	21.661	38 43.52	6.71	5.41	33 0.3	27 25.6
74	9	. .	. .	. .	23.2	. .	. .	. .	34 6.50	16.70	0.16	IV.	2	21.494	38 54.05	6.68	5.45	34 23.4	27 36.2
75	8	. .	. .	. .	. .	51.4	. .	. .	34 18.58	16.70	0.27	V.	4	44.366	15 0.41	6.67	1.58	34 35.6	3 38.7
76	8	. .	. .	. .	40.8	56.6	. .	. .	35 23.97	16.70	0.25	IV.	4	41.115	18 23.94	6.65	2.11	35 40.9	7 2.7
77	7.8	. .	. .	. .	20.7	37.2	. .	. .	36 4.22	16.70	0.25	IV.	4	39.342	20 15.33	6.63	2.42	36 21.2	8 54.4
78	10	. .	. .	. .	5.5	. .	. .	. .	37 48.83	16.70	0.20	IV.	3	28.305	31 46.47	6.59	4.29	37 5.7	20 27.4
79	10	. .	50.2	7.2	. .	. .	. .	. .	38 6.96	16.70	0.21	III.	3	31.054	28 53.93	6.58	3.82	38 23.9	17 34.3
80	10	. .	. .	42.3	. .	. .	. .	. .	38 42.32	16.70	0.25	III.	4	40.930	18 34.92	6.56	2.14	38 59.3	7 13.6
81	10	51.	7.2	. .	. .	. .	. .	. .	42 23.81	16.70	0.27	II.	4	43.675	15 42.72	6.47	1.67	42 40.8	4 20.9
82	9.10	. .	. .	36.6	53.2	. .	. .	. .	42 36.60	16.70	0.28	IV.	4	46.068	13 13.09	6.46	1.27	42 53.6	1 50.8
83	10.11	34.1	. .	. .	. .	. .	. .	. .	44 7.15	16.70	0.16	I.	2	19.562	40 54.81	6.43	5.79	44 24.0	29 37.0
84	7	12.2	28.2	44.9	. .	. .	. .	. .	45 44.98	16.70	0.15	III.	2	17.022	43 34.31	6.39	6.24	45 1.8	32 16.9
85	9	. .	. .	. .	12.2	29.2	. .	. .	45 55.98	16.70	0.25	IV.	4	41.456	18 2.66	6.38	2.03	45 12.9	6 41.1
86	9.10	49.8	6.2	. .	39.2	56.1	. .	. .	48 22.80	16.70	0.20	II.	3	28.232	31 51.05	6.32	4.29	48 39.7	20 31.7
87	6	. .	13.2	29.2	46.2	2.8	. .	. .	48 29.60	16.70	0.21	IV.	3	30.750	29 12.88	6.32	3.88	48 46.5	17 53.1
88	9	. .	42.2	. .	15.5	. .	. .	. .	50 58.72	16.71	0.18	IV.	3	23.328	36 58.70	6.26	5.14	50 15.6	25 40.1
89	9.10	2.4	. .	34.3	. .	. .	. .	. .	52 34.84	16.71	0.25	III.	4	39.706	19 51.74	6.22	2.36	52 51.8	21 8 30.3
90	9	22.3	38.4	55.1	. .	. .	. .	. .	54 55.05	16.71	0.29	III.	5	51.518	7 31.02	6.16	0.34	55 12.1	20 56 7.5
91	9.10	. .	. .	. .	33.	. .	. .	. .	54 16.36	16.71	0.22	IV.	3	35.249	24 30.72	6.18	− 3.11	54 33.3	21 13 10.0
92	9.10	. .	. .	. .	57.2	. .	. .	. .	54 40.66	16.71	0.30	IV.	5	53.665	5 16.06	6.17	+ 0.05	54 57.7	20 53 52.2
93	9	. .	. .	. .	. .	31.2	. .	. .	55 58.39	16.71	0.28	V.	4	46.954	12 17.80	6.14	− 1.11	56 15.4	21 0 55.0
94	8	. .	. .	. .	7.2	24.2	. .	. .	56 50.97	16.71	0.24	IV.	3	38.404	21 12.81	6.12	2.55	57 7.9	9 51.5
95	9	. .	. .	. .	50.3	6.5	. .	. .	56 33.67	16.71	0.25	IV.	3	39.952	19 35.41	6.13	2.29	56 50.6	8 13.8
96	9	. .	. .	46.5	. .	. .	. .	. .	58 46.66	16.71	0.12	III.	1	10.552	50 20.15	6.07	7.35	58 3.5	39 3.6
97	8.9	. .	. .	32.5	. .	5.6	. .	. .	58 32.66	16.71	0.16	IV.	3	20.769	39 38.97	6.08	5.60	58 49.5	28 20.7
98	8.9	. .	. .	. .	58.2	. .	. .	. .	18 59 21.54	16.71	0.22	IV.	4	35.242	24 32.54	6.05	3.11	18 59 38.5	13 11.7
99	4	. .	16.3	33.3	49.7	6.3	. .	. .	19 0 33.15	16.71	0.21	IV.	3	33.121	26 44.18	6.03	3.47	19 0 50.1	21 15 23.7
100	9	. .	. .	. .	. .	53.2	. .	. .	19 1 20.41	+16.71	+0.30	V.	5	53.114	− 5 50.52	− 6.02	− 0.04	19 1 37.4	− 20 54 26.6

ZONE 266. JULY 17. C. $D_0 = -30° 49' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	9	27.1	45.2	. .	20.8	. .	. .	. .	17 9 2.96	+18.37	−0.15	IV.	4	47.529	−11 41.39	− 2.24	− 0.73	17 9 21.18	− 31 1 14.4
2	9	. .	. .	2.8	20.9	. .	. .	. .	9 2.80	18.37	0.15	IV.	5	51.838	7 10.62	2.24	+ 0.32	9 21.02	30 56 42.5
3	8	. .	. .	. .	. .	54.	. .	. .	9 18.21	18.37	0.16	V.	3	37.532	22 7.21	2.24	− 3.16	9 36.42	31 11 32.6
4	8.9	. .	7.5	25.8	44.1	. .	. .	. .	11 25.75	18.37	0.16	IV.	3	24.476	35 46.61	2.24	6.37	11 43.96	25 25.2
5	8.9	. .	. .	15.5	34.1	. .	. .	. .	12 15.76	18.37	0.16	IV.	3	24.059	36 12.66	2.24	6.48	12 33.97	25 51.4
6	10	. .	. .	. .	. .	49.3	. .	. .	12 13.39	18.37	0.16	V.	2	20.029	40 25.76	2.24	7.48	12 31.60	30 5.5
7	10	. .	. .	. .	32.?	. .	. .	. .	13 13.83	18.37	0.16	IV.	3	29.296	30 44.23	2.23	5.17	13 32.04	20 21.6
8	8.9	. .	. .	. .	49.2	7.4	. .	. .	13 31.22	18.37	0.16	IV.	2	17.301	43 17.06	2.23	8.16	13 49.43	32 57.5
9	10	39.5	57.1	15.1	. .	. .	. .	. .	16 15.28	18.36	0.16	III.	2	20.057	40 24.00	2.23	7.47	16 33.48	30 3.7
10	8.9	. .	. .	36.8	54.8	. .	. .	. .	16 36.76	18.36	0.16	IV.	2	21.812	38 33.92	2.23	7.03	16 54.96	31 28 13.2
11	9	. .	. .	. .	. .	33.5	. .	. .	17 57.79	18.36	0.15	V.	5	51.338	7 42.00	2.22	0.20	18 16.00	30 57 14.4
12	8	. .	. .	12.5	31.3	. .	. .	. .	18 12.86	18.36	0.16	IV.	4	44.486	14 52.44	2.22	1.45	18 31.06	31 4 26.1
13	8	. .	. .	. .	59.3	17.5	. .	. .	18 41.42	18.36	0.16	IV.	3	34.292	25 30.77	2.22	3.94	18 59.62	15 6.9
14	8	. .	. .	. .	30.3	48.5	. .	. .	17 19 12.37	+18.35	−0.16	IV.	3	25.567	−34 38.12	− 2.22	− 6.10	17 19 30.56	− 31 24 16.4

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.		CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849.	h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 266	July 17,	17 10	90 9 64.5	57.6	61.2	63.1	51.4	55.8	58.93	30.156	75.5	70.5	. .	75.7	76.7
		17 30	. .	. .	. .	. .	. .	. .	. .	. .	. .	70.1			
		17 40	. .	. .	. .	. .	. .	. .	. .	30.158	74.5	70.0			

REMARKS.

(265) 78. Minutes assumed as 36, not 37.
(265) 84. Minutes assumed as 44, not 45.
(265) 85. Minutes assumed as 44, not 45, to agree with Mer. Cir. Z., 1848, July 19.
(265) 88. Minutes assumed as 49, not 50.
(265) 96. Minutes assumed as 57, not 58.
(265) 98. Transit over T. IV assumed as $38^s.2$, not $58^s.2$.
(266) Wind fresh; sometimes difficult to hear the clock.

ZONE 266. JULY 17. C. $D_0 = -30° 49' 30''$—Continued.

No.	Mag.	SECONDS OF TRANSIT. I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
									h. m. s.	s.	s.			r.	′ ″	″	″	h. m. s.	° ′ ″
15	10	. .	. .	. .	37.2	55.3	. .	. .	17 20 19.25	+18.35	−0.16	IV.	3	29.976	−30 1.38	− 2.22	− 5.01	17 20 37.44	− 31 19 38.6
16	8.9	30.3	48.2	6.5	. .	. .	. .	. .	22 6.36	18.35	0.16	III.	3	24.114	36 9.33	2.22	6.46	22 24.55	25 48.0
17	9	. .	. .	. .	. .	35.5	. .	. .	22 59.51	18.35	0.17	V.	1	8.215	52 46.58	2.21	10.43	23 17.69	31 42 29.2
18	10	. .	. .	23.2	. .	. .	. .	. .	23 23.14	18.35	0.15	III.	5	49.807	9 18.16	2.21	− 0.17	23 41.34	30 58 50.5
19	9.10	. .	. .	8.5	. .	. .	. .	. .	24 8.44	18.35	0.15	III.	5	51.314	7 43.82	2.21	+ 0.19	24 26.64	30 57 15.8
20	9	. .	. .	40.5	58.6	. .	. .	. .	24 40.50	18.35	0.16	IV.	3	37.167	22 30.32	2.21	− 3.25	24 58.70	31 12 5.8
21	10	. .	. .	55.2	12.4	. .	. .	. .	17 28 54.76	+18.34	−0.16	IV.	1	22.302	−38 3.24	− 2.20	− 6.91	17 29 12.94	− 31 27 42.3

ZONE 267. JULY 17. C. $D_0 = -21° 23' 30''$.

No.	Mag.	I.	II.	III.	IV.	V.	VI.	VII.	T.	a_1	a_2	MICROMETER.			i	d_1	d_2	Mean Right Ascension, 1850.0.	Mean Declination, 1850.0.
1	7.8	. .	9.5	26.	42.8	9.5	. .	. .	17 29 26.17	+16.30	+1.21	IV.	3	34.428	−25 22.30	− 7.46	− 5.24	17 29 43.7	− 21 49 5.0
2	9.10	38.5	. .	11.5	28.1	. .	. .	. .	32 11.53	16.29	1.23	IV.	3	32.011	27 53.77	7.42	5.66	32 29.1	21 51 36.8
3	9.10	. .	. .	. .	53.8	10.3	. .	. .	32 37.10	16.29	1.29	IV.	1	10.892	49 58.71	7.41	9.31	32 54.7	22 13 45.4
4	7	. .	52.3	8.3	25.3	41.5	. .	. .	34 8.59	16.29	1.19	IV.	5	46.657	12 35.95	7.39	3.14	34 26.1	21 36 16.5
5	8	. .	. .	3.3	19.5	36.3	. .	. .	35 3.13	16.29	1.27	IV.	2	17.088	43 30.36	7.37	8.25	35 20.7	22 7 16.0
6	9.10	. .	. .	. .	. .	55.2	. .	. .	35 22.17	16.29	1.25	IV.	3	26.865	33 16.56	7.36	6.55	35 39.7	21 57 0.5
7	9.10	. .	. .	53.2	. .	26.3	. .	. .	37 53.26	16.28	1.19	V.	5	50.941	8 6.79	7.33	2.39	38 10.7	31 46.5
8	9.10	. .	. .	. .	39.2	. .	. .	. .	37 22.59	16.28	1.17	IV.	5	55.772	3 3.73	7.34	1.59	37 40.0	21 26 42.7
9	10	. .	. .	. .	. .	29.5	. .	. .	38 56.45	16.28	1.24	V.	2	22.931	37 23.79	7.31	7.22	39 14.0	22 1 8.3
10	9.10	. .	. .	19.5	36.3	. .	. .	. .	41 19.58	16.28	1.27	IV.	3	30.858	29 6.05	7.27	5.85	41 37.1	21 52 49.2
11	9	. .	. .	. .	. .	1.5	. .	. .	41 28.53	16.28	1.25	5.	4	38.857	20 46.07	7.27	4.48	41 46.1	44 27.8
12	10	37.5	. .	10.5	. .	. .	. .	. .	44 10.55	16.27	1.25	III.	4	39.549	20 1.71	7.22	4.36	44 28.1	43 43.3
13	7.8	28.6	45.5	1.8	18.5	34.7	. .	. .	47 1.82	16.27	1.39	IV.	3	28.330	31 44.90	7.17	6.29	47 19.5	55 28.4
14	9.10	. .	6.4	23.	39.4	. .	. .	. .	48 22.89	16.27	1.46	IV.	1	12.061	48 45.45	7.15	9.12	48 40.6	12 31.7
15	10	. .	. .	. .	10.1	. .	. .	. .	49 53.34	16.26	1.42	IV.	3	25.254	34 57.80	7.12	6.82	50 11.0	21 58 41.7
16	8	45.5	2.0	18.3	. .	. .	. .	. .	52 18.55	16.26	1.42	III.	2	17.065	43 31.67	7.08	8.24	52 36.2	22 7 17.0
17	9	. .	45.2	2.1	18.4	. .	. .	. .	53 1.85	16.26	1.41	IV.	3	26.562	33 35.76	7.07	6.40	53 19.5	21 57 19.2
18	8.9	. .	. .	. .	. .	54.3	. .	. .	53 21.38	16.26	1.33	V.	5	52.548	6 26.11	7.06	2.13	53 39.0	21 30 5.3
19	9	. .	. .	. .	. .	1.5	. .	. .	54 28.40	16.26	1.48	V.	1	10.591	50 17.65	7.04	9.37	54 46.1	22 14 4.1
20	9	. .	48.3	4.8	. .	. .	. .	. .	56 4.82	16.26	1.40	III.	4	42.837	16 33.99	7.01	3.80	56 22.5	21 40 14.8
21	9	. .	. .	44.7	1.7	. .	. .	. .	57 44.88	16.25	1.47	IV.	2	17.016	43 34.81	6.99	8.26	58 2.6	22 7 20.1
22	9	. .	. .	. .	. .	3.5	. .	. .	56 30.41	16.25	1.48	III.	1	12.016	48 48.21	7.00	9.14	56 48.1	12 34.3
23	8.9	. .	. .	. .	45.7	2.2	. .	. .	57 29.04	16.25	1.46	IV.	2	20.891	39 31.69	6.98	7.57	57 46.8	22 3 16.2
24	8.9	. .	. .	23.	. .	56.3	. .	. .	58 23.19	16.25	1.45	IV.	3	31.317	28 37.50	6.97	5.78	58 40.9	21 52 20.3
25	9	. .	. .	24.2	. .	. .	. .	. .	59 24.34	16.25	1.49	III.	2	13.919	46 48.86	6.95	8.77	59 42.1	22 10 34.6
26	9	. .	. .	. .	52.3	8.5	. .	. .	17 59 35.46	16.25	1.49	IV.	2	12.992	47 47.19	6.94	8.94	17 59 53.2	11 33.1
27	9	. .	. .	. .	8.2	24.3	. .	. .	18 0 51.31	16.25	1.49	IV.	2	12.702	48 5.38	6.94	9.02	18 0 9.1	11 51.3
28	8.9	. .	. .	22.5	39.5	56.3	. .	. .	18 1 22.85	+16.25	+1.50	IV.	2	8.959	−52 0.05	− 6.93	− 9.66	18 1 40.6	− 22 15 46.6

CORRECTIONS.

Date.		Corr. of Clock.	Hourly rate.	m	n	c	Zenith Point.	Mic. Co.
1849.	h.	s.	s.	s.	s.	s.	° ′ ″	r.

INSTRUMENT READINGS.

	Date.	CIRCLE. A.	B.	C.	D.	E.	F.	Mean.	Barom.	THERMOM. At.	Ex.	U.	L.	I.
	1849. h. m.	° ′ ″						″	in.	°	°	°	°	°
Zone 267	July 17, 18 0	80 44 62.5	56.9	60.5	62.7	50.6	54.3	57.92	30.156	74.	69.7	78.	72.	74.5

REMARKS.

(266) 17. Right ascension differs 1^m from B. A. C. 5908, depending only on Lacaille 6108.

(267) 1. Transit over T. V assumed to have been at $59^s.5$ instead of $9^s.5$.

(267) 27. Right ascension assumed as $17^h\ 59^m$, to agree with Arg. Z. 224, 44; 307, 56.